MODELS, MYTHS AND MUDDLES

Thinking toward Survival

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Introduction

It is ambition enough to be employed as an under-laborer in clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge.
John Locke, "An Essay Concerning Human Knowledge"

We have computers. We have satellites. We have iPods. We have all kinds of great technological stuff. However, the crucial question is, are we humans using our grey matter in a way that will keep our species going?

It's not often that we think about our species or accept any responsibility toward it. This would be a good time to start.

Nor do we often think about our thinking, or try to improve it. On the national level we often see more heat than light. In smaller groups, most of us have observed our share of individuals working at cross-purposes, expressing their egos non-stop, or maybe arguing for hours even though they appeared to be in fundamental agreement. We have endured large meetings that went nowhere—sometimes *fortissimo*—and have watched organizations with the highest of motives degenerate into turf battles. On the personal level, we have misunderstood or been misunderstood. However, while bad habits of thinking and communication may become entrenched, by themselves these small-scale misunderstandings are seldom life-threatening.

It is a different matter with a number of larger errors and misunderstandings which could end life, liberty, and the pursuit of happiness for as many as everyone on Earth. Thinking patterns that we have inherited or learned at home and in school are not proving adequate for managing the complex, technological world we have made. While capable of being rational creatures, we too seldom are. Even less often are we wise. This situation has become too serious to call forth our amused indulgence—"It's just human nature." Human nature is many things, and it is time to make some major changes in the way we approach the problems that threaten our species.

For some years I've watched how people think, as evidenced by their conversation, writing, and actions, and also watched my own mind at work. It is my good fortune to live in an area that long had three daily newspapers, all of which carried letters to the editor [due to a merger there are currently two editorial pages]. These letters have been an invaluable window into the ways that people think about public issues. And now there are blogs, other windows into thinking.

I began writing *Models, Myths, and Muddles* in the late 1980s, but life circumstances interrupted. Now, twenty years later, we can observe the same old problems along with emerging ones that are equally disturbing. The public, newly aware of challenges or crises such as peak oil and global warming, meanwhile continues to live with threats widely known two decades ago, such as mass extinctions, dying oceans, and nuclear proliferation.

It is evident that my survival and that of my friends and family is linked with everybody else's. Yet the worldwide realization—only about forty years ago—that we humans can destroy and are destroying the living earth, does not appear to grab many people in the way that their favorite soap opera does. To take only one of our challenges, nuclear weaponry, we see that the shock of Hiroshima and Nagasaki has faded after forty years of mutually assured destruction, SDI 'Star Wars' technology, and now, tactical nukes.

United States politics has become extremely polarized, with public discourse often illogical and uncivil. Political leaders and broadcast media often cater to the lowest common

denominator, to emotions of greed and fear. International politics are not much better. Nations seem paralyzed to act together against climate change, nuclear proliferation, or local genocides.

In crucial respects, we seem to be moving backward at a pretty good clip just when we urgently need to take a giant step forward. Quite simply, we are not confronting the stark realities of our shared situation. Many people obsess about social and political problems much less urgent than the survival issues we face. Some fail even to recognize these larger issues. Many escape to fantasy worlds—not only games but also religious belief systems that welcome earthly destruction. The way that we humans deal with our lives together as members of one species, living on and dependent on one self-maintaining planet, is irrational and sub-intuitive.

Our species behavior also leads to a terrible waste of finite planetary resources, including unique human lives. Modern wars kill many more civilians than soldiers, yet we rarely mention the noncombatants. Every year the world spends well over a trillion dollars on armaments ($1.5 trillion in 2009) the sole purpose of which is to destroy some of the Earth's inhabitants along with their environs. Almost one half of it is spent by the United States. The money spent on military preparation and wars could easily finance a decent living for everybody on earth, with clean water, educational opportunities, and universal basic health care.

After five thousand years of civilization, is this the best we can do? If so, we don't live up to our own blurbs, where we call ourselves 'the rational animal.' Mahatma Gandhi said, when a reporter asked him what he thought of Western Civilization, "I think it would be a good idea!" Truly civilized people would not require a large-scale blood-letting every ten or twenty years, would not worship a piece of colored cloth, and certainly would not mindlessly destroy their home base and means of sustenance. (The report card says, "Not working up to potential.")

We need to look at human thinking processes and assumptions in order to become more conscious of how we first help to create and then try to cope with the difficulties that confront us. This is about much more than logic. The term 'cognition' includes several aspects of how we use our minds. According to the *American Heritage Medical Dictionary*, cognition is: "The mental faculty of *knowing*, which includes perceiving, recognizing, conceiving, judging, reasoning, and imagining." So this book is about cognition, thinking better in a very broad sense that includes critical thinking, basic awareness, and worldview. Consider these major points:

- As a species, we find ourselves facing a convergence of quite grave problems. Only from a *species viewpoint* can we successfully meet our challenges, evolve, and survive.
- We need to recognize that we are better than our governments and greater than our technologies.
- We know more than we think we know, but greatly overestimate how much of the time we actually *think*, or how well we do it.
- Leaders in a variety of fields are calling for a paradigm change, a new worldview—transformations of how we think about *everything*.
- The origins of thought lie in our physical perceptions, creaturely origins, and unconscious fears and desires.
- Many terms used in public life desperately need clarification and extended definition.
- People often view issues through frames that allow only a small portion of the total story. We need context such as the historical background of a problem or the full range of possible alternatives.
- We often deceive ourselves and others, or are deceived, through ego defense mechanisms, half-truths, and propaganda.
- There are several ways to overcome our mental limitations, on the individual, group, and species levels, in order to improve our chances of survival as well as our happiness.

One subject of this book is critical thinking. To function democratically, any country needs a majority of citizens who can think straight. But if that democratic nation wields a great deal of economic and political power, and holds half of the world's military hardware, it is *crucial* for it to have an informed and reasoning public. Because of America's power, its growing tendencies to abandon reality, and because I know this country best, *Models, Myths, and Muddles* is mainly—but not exclusively—directed to the United States.

A second theme has to do with our very deepest assumptions and perceptions of reality. It deals with a certain loss of human spirit and awareness of our place in nature and the cosmos that has occurred over the last three or four centuries. This lack has contributed greatly to our existential problems. Some thinkers, such as historian Morris Berman and psychotherapist Thomas Moore, refer to our "disenchantment," and with them we will eventually suggest some agencies of re-enchantment. Critical thinking is not in opposition to imagination, community, and other manifestations of the human spirit. We are not wholly rational beings, and in fact a better understanding of our whole selves will allow us to be more rational when we need to be.

A minor purpose or side-effect of this book is to shed light on day-to-day misunderstandings. Hopefully, some sections will be useful for the reader's interpersonal relationships. Any increase in individual insight and harmony also helps the family; families add up to the community; and communities add up to the world. However, most of all I am concerned about the species to which you and I belong.

The main aim is to focus attention on how we think in order to better prepare our species to survive. I am optimistic that we *can* survive, if we act as one species—but we do not have a lot of time left to 'get our act together.' We are truly arrived at the eleventh hour. According to the "Doomsday Clock," a symbol of nuclear danger maintained by the *Bulletin of the Atomic Scientists*, the setting has been at seven minutes to midnight since 2002. As H.G. Wells said, back in 1920, "Human history becomes more and more a race between education and catastrophe."

Note: the purpose here is not 'doom-saying.' Although the combination of challenges facing the human race is truly formidable, I trust you, the reader, to have the courage and ability to confront these challenges and stay cool, calm, and collected, as you would in any sort of emergency. We all need each other, and anyway, there is really no place to escape.

We made these problems and we should be able to fix them.

About this book: *Models, Myths, and Muddles* is the first of three books that will treat several aspects of how we think and how this affects human survival. The second book will focus on ideologies, propaganda, and media. The third book will provide quite a few hopeful and helpful options for increasing our species-wide capacities for dealing with the extreme challenges that confront us. It will include new or under-utilized approaches, concepts, and tools for making changes in the way we think and subsequently act.

Although many of the matters we deal with here are deadly serious, sometimes they are absurd as well—and humor seems more appropriate than denial or settling into despair. I hope this lightness will not jar you. There is no intention to make these pages into the 'last word' on anything, or to cover any subject thoroughly, but only to open up new perspectives, add context, and clarify matters. The aim is to think more deeply, broadly, and long-range about many issues that have been largely framed by the mainstream media or other conventional wisdom—or else neglected entirely.

Along the way, you will find a number of extended definitions that attempt to clarify terms that people use constantly without ever defining them. Individuals can seemingly argue forever about some word that has two (or more) different definitions, without realizing that each person is using a different definition. Or someone may do this deliberately, *equivocating* in order to manipulate opinion. Equivocation is a popular fallacy described later.

If you disagree with something, that is a good starting point for an argument, in the positive sense described in a later chapter. Please argue with me (or add your own ideas) in the margins if you own the book or print-out, or on post-its if you don't. If you have never dialogued with a book, try it.

Reader's guides such as Mortimer Adler's classic *How to Read a Book* suggest that you preview a work before actually reading it, to put the book in its context. So here is the general plan of *Models, Myths, and Muddles*:

The first four chapters focus on five basic threats facing us as a species: overpopulation, dangerous technologies, ecosystem failure (including global warming), war, and peak oil geopolitics. I must warn the reader that Part I is not light summer reading while lying in a hammock, eating bonbons. Things may be even worse than you thought they were. Our species seems to be in the worst predicament we have been in since about 75,000 years ago when we squeaked through a volcanic winter. Many scientists believe that the eruption of the supervolcano Toba back then almost extinguished our ancestral line. My intention in Part I is not to scare you but to help mobilize your problem-solving abilities. This time we have a lot more knowledge to apply to our endangerment.

Part I sets the stage for an overview of how in general we humans go about trying to solve these and other problems, that is, our customary mental habits and strategies. Chapters 5-10 survey some time-honored ways that contemporary people approach thinking. Some of these are short-cuts to thinking, or hardly thinking at all, such as recipes or jumping to conclusions. If these don't describe your thinking habits, well and good—now you can identify them all around you. The more of us who are aware of what good thinking is and isn't, the better off we'll be.

A later chapter discusses critical thinking, one of two disciplined approaches developed through many generations, methods that help to overcome natural human tendencies toward lazy, impulsive, and self-centered thinking. Critical thinkers are skeptical, meaning that they require evidence. They need full information (context) and time to reflect on it. As real estate people say "Location, location, location," so in critical thinking one might say "Context, context, context." The second systematic mental approach, the scientific method, will be part of the second book.

Chapter 5 also introduces the relatively new concept of *memes*. A meme is any element of a culture passed on by imitation. Do all the female students in a particular high school start wearing purple t-shirts? Does some catch-phrase like "You are *so* right" suddenly sweep the country? Put the blame on a meme. Viral marketing is all about memes, and a recent scientific study suggests that even obesity is "socially contagious," spreading from person to person especially among friends. The study of memes (*memetics*) rests on the idea that most of what we learn is by imitation. Memetics is not yet an accepted, full-fledged science, but it does suggest interesting insights.

Then we shift gears a bit, probing more deeply into the way humans think, pulling together evidence and viewpoints from a variety of sources such as history, anthropology, Freudian theory, popular culture, animal behavior, and others. Chapters 11 through 23 make use of three organizing concepts, the models, myths, and muddles of our title. These are defined as follows:

Models are images deeply embedded in our culture, our language and even our physiology. Some models are inborn and species-wide, while others are individual and may be consciously chosen or created as useful aids for explanation. A few are overarching analogies, theories or paradigms.

Myths are stories, or fragments of stories, that often serve the interests of some people over others and are part of ideologies. Myths are distinct from **Mythology,** which expresses an ancient need for coherent, dramatic narratives of the world's creation or the origin of human customs, or other insights that apply to an entire people or humanity as a whole.

Muddles are generally failures of communication between two or more people because of differing temperaments, backgrounds, assumptions, agendas, or styles of communication. **Grand Muddles** involve large groups of people and multiple layers of confusion and myths that often result in widespread suffering and death. War is the epitome of a Grand Muddle.

Note that models, myths, and muddles are not hard-and-fast, mutually exclusive categories, nor will they cover all cases. They are simply handy tools. In general, it is a good idea to be aware of one's mental tools and not turn them into immutable categories, like the person with a hammer who sees every problem as a nail.

The final chapters present tools for improving one's intellectual skills. Chapter 24 describes popular fallacies to avoid. Chapter 25 concerns literacy as the ability to read, to read well, to read widely, and also to gain a basic acquaintance with science, history, geography, and other matters we need to know about in order to make good personal and public decisions. Chapter 26 surveys the teachable and self-teachable skill of critical thinking. The conclusion brings us back to the awareness we need, besides critical thinking, in order to gain wisdom.

Some people like to dip into a book, and some books have self-contained chapters, but you will probably get more out of this one by reading chapters in order. Certain ideas and arguments depend on previous chapters and later books will refer back to concepts from this one. Some topics that are touched on briefly in this book will be covered more thoroughly or from different perspectives in later books.

And now, a survey of disasters-in-the-making, that humans have precipitated and must rapidly learn as a species how to back away from.

Part One: The World We Have Made

Chapter 1: Who are all these people and what are we doing here?

Man is old enough to see himself as he really is—a mammal among mammals….He is old enough to know that in the years to come he may be crowded out like the prehistoric monsters of the past, while life breaks out in some ascendant form that is better suited to survive.
Homer W. Smith, *Kamongo,* 1932

98% of all species in the fossil record are extinct.

Add us all together we are a species, almost seven billion strong: creatures with a shared past and, hopefully, a shared future.

We have been in this form for, say, sixty thousand years. Before that the folks back home were a bit beetle-browed, not spell-binders and intellectuals, but capable hunters and kind enough to their own. Before that—we are talking two, three million years here—we were smaller creatures, scavenging around the edges, always alert for the main chance.

Our ancestors and we have made tools for a million or more years. We tamed the fire. And here we are at last, the most successful species on earth! (*Flourish of trumpets*)

That is, we are the most successful if you leave out ignorant creatures such as copepods, nematodes, ants, and cockroaches that turn up everywhere and in far greater numbers.

Nevertheless, we are a very successful and unusual species. First, our numbers have increased enormously in the last ten thousand years. Second, we have spread across the globe and adapted to every sort of environment from jungle to desert to icy tundra. Third, we have learned to push around the rest of Nature in order to feed and gain more creature comforts for our burgeoning species. Fourth, we have some accomplishments that we ourselves are very proud of, such as arts and music and understandings we have about the universe.

Unfortunately, we may have been a little too successful. (Is that possible?) It all depends on how you measure success. With other species, adaptation to the environment is indicated by reproductive success, not by how many eggs they lay or how many in the litter, but by how many of them grow up to be reproducing adults themselves. If plenty of offspring survive to reproduce again, and the creatures are adapted to a wide variety of ranges, then they are a successful species. More is better—up to a point.

To us there may seem to be an awful lot of mice or minnows or spiders; but there are never more of them than whatever it is they eat. Nature always provides some mechanism within the species or in its relationship with other species to maintain a balance of numbers. A population of animals does not overuse the local environment on which they depend for life—not for long, anyway. And one animal population does not normally destroy another. If there were so many individuals that they consumed their own sustenance—if the deer herd ate every blade of grass, or if the bobcat family ate every rabbit within hundreds of miles—the deer or the bobcats would starve and die out.

Animals have various patterns of behavior built in to prevent that from happening. One such behavior pattern is territoriality, demonstrated by many birds, fishes, and mammals. The males compete, display aggressively, and in some species actually fight over a piece of ground (or a ledge in the stream, or a tree) that is just large enough to maintain one reproductive unit. Males who lose such encounters do not mate at all, and so they do not reproduce. Another way that

numbers keep in balance is through the predator/prey relationship. Predators, by pulling down the weaker of their prey, also tend to select for survivability traits in the prey species.

Some large, powerful animals with no natural enemies except for the Johnny-come-lately human—animals such as elephants, sperm whales, and rhinoceros—appear to be able to reduce the number of births in order to prevent overcrowding and stress on their environment. For example, when elephants begin to overtax their habitat, the age of puberty rises and there is a longer interval between calving. But with most animals, harsher mechanisms come into play. An AP story in March 2006 told how packs of gray wolves on Isle Royale National Park were invading each other's territories and killing each other. This unusual behavior developed because Isle Royale, on an island in Lake Superior, is a closed environment. The wolves' main food source is moose, but the moose population is at a 48-year low, and the wolves have no place else to go to find prey.

Certain 'irrupting' species undertake mass migrations when their numbers are at peak, as they look for virgin territory. Many of them will die before they reach their promised land. Lemmings and locusts are well-known animals with this behavior pattern, although lemmings do not actually jump or get pushed off cliffs into the sea as the myth says.

Among some creatures, massive die-offs may occur from 'shock disease'—probably hypoglycemic shock caused by the stress of overcrowding. Adrenal glands become overactive and the liver breaks down. Animals such as deer or rabbits may succumb to shock diseases when overcrowded, although normally their natural predators keep the population in balance. If the usual checks and balances of territoriality or predator/prey relationships fail to keep an animal population from exceeding the carrying capacity of their range, and if they are not among the few animals to have developed an instinctive means of birth control, then the almost certain result is a 'population crash' in which large numbers of creatures die, not only of starvation but also of shock disease. David Brower points out in *For Earth's Sake* that

> Natural scientists know full well what happens when there is an explosion of population in deer. The deer themselves lose vitality and starve by the thousands because they have overloaded their range. Mankind has a range, too, and it has a maximum carrying capacity consistent with a good life—a life with enough resources on hand for all to spare us the final quarrel over them. We may argue about how many people the range can withstand, but we can hardly argue that there is no limit.

Unbelievably, some people do argue about whether limits exist for human population. But what has the scenario of population crash to do with our own species? Are humans currently building up to a population crash? That disaster seems less likely than it did thirty years ago when several very grim predictions were in the air, before the Green Revolution prevented the worst of predicted famines, and before a number of third world countries developed family planning programs that in some places reduced the average family from six children to three. World population has stopped growing quite so fast. The rate of population growth dropped from a peak of about 88 million per year in the late 1980s to about 75 million per year today.

Nevertheless, as *The World Factbook* (CIA) states, "The addition of 75 million people each year to an already overcrowded globe is exacerbating the problems of pollution, desertification, underemployment, epidemics, and famine." Another looming problem is water shortages. Despite the successes, so many of the world's people are now or are soon to be of reproductive age, that we are likely to add almost three billion more before stabilizing numbers at mid-century.

Officially, world population passed the six and a half billion mark on February 25, 2006. Nobody celebrated, even those who believe, for religious or ideological reasons, that the Earth can support an indefinite number of people. Demographers currently project that world population will grow to 9.1 billion in 2050. Most of this growth (two and a half billion) is expected to concentrate in Latin America, Africa, and South Asia, in countries that already have problems providing adequate healthcare, shelter, and sometimes food or water for all their people.

Much of the world's population is already very poor. About two and a half billion people earn less than $1,000 per year. They live mostly in Indonesia, rural China, India, and Africa. We should note that the median income of the world's people is currently [2007] about $1,100 a year, with half earning more while half earn less. Inequities between the richer and poorer nations are growing.

Note: The **median** is the middle figure in a range of figures. The **mean** or **average** is derived by adding all figures in the range and dividing by the number of figures. With per capita world income, the median is about $1,100 while the mean/average is about $9,000, indicating that a few wealthy individuals are raising the world mean or average although large numbers of people are poor.

We could further illustrate this by the following example: In a group of ten people, if nine earn $10,000 a year and one of them earns $1,000,000 a year, the average income is $109,000 but the median income is $10,000.

Carrying Capacity

A suitable total for the number of citizens cannot be fixed without considering the land.
Plato, *Laws, V*

Our concern with population growth hinges on the biological concept of *carrying capacity,* which defines how many individuals one ecological niche can support. Overpopulation occurs when the numbers of a species exceed the resources they need to survive. These resources for humans include clean water for drinking; sufficient water for cooking, bathing, livestock, and watering crops; clean air; and arable land for growing crops. While thirty percent of the Earth's surface is land, half or more of that is unsuitable terrain for human settlements because it is tundra, mountains, deserts, or covered with snow.

Arable land is about eight to ten percent of earth's surface, with half under cultivation. If we were to divide the land currently used as cropland equally among the world's present population, each person would have slightly more than half an acre. With 9.1 billion people at mid-century, each person would have no more than two fifths of an acre of cropland, but further losses from erosion and quite possibly from global warming will reduce the total further.

Currently, world cropland is shrinking by about 37,000 square miles a year due to erosion, losing annually an agricultural area the size of Indiana. Cornell's David Pimentel reports that wind and water are sweeping away the soil ten to forty times faster than it is replenished. It takes up to a thousand years to replace an inch of topsoil.

Adding more cropland creates other problems. By cutting down tropical forests—or worse, by burning them—humans create new land to cultivate, perhaps to raise soybeans for China's burgeoning population or run cattle for fast food hamburgers. When the soil loses fertility in a few years, they do it again elsewhere. This quick fix creates impacted, infertile land, and the loss

of forests changes the regional climate to hotter and drier. This is short-term gain, with large and lasting loss.

One-third of the Earth's lands are at risk of turning into deserts. China has lost 36,000 square miles to desert and almost one-third of Spain is threatened. Contributing causes are slash-and-burn agriculture, increasing populations, exhausted water supplies and wasteful irrigation practices. A 2004 report from the U.N. forecasts that by the year 2050, Africa will lose two-thirds of its arable land, Asia one-third, and South America one-fifth.

Water: Finite water supply is another factor limiting population growth. Less than one percent of all Earth's water is available for human use, since most of it is too salty, some is locked up in icecaps and glaciers, and more arrives in remote areas or at the wrong time and place (such as Katrina and Rita). Two hundred scientists in fifty countries identified water shortage as one of the two top problems in this millennium, along with global warming. Irrigation claims 65 to 70 percent of human water use, with increasing amounts used for large corporate farms. Irrigation increased by a factor of five between 1900 and 1980. Industrial agriculture often uses inefficient and wasteful irrigation methods, instead of moving to drip irrigation and other conservation practices.

Rather than depend on rainfall and surface water, many countries are using their underground aquifers, a strategy which is "like making constant withdrawals from a bank account without ever paying anything into it." Some of the world's largest cities such as Mexico City, Bangkok, and Jakarta, are overdrawing their account. Western states in the United States are also exhausting their underground sources such as the Ogallala Aquifer.

A study at Colorado University found that a third of the world's people already live in water-stressed regions, predicting that by 2025, half the world's people will find it difficult to find enough water for crops, livestock, and drinking. Pollution further reduces available water, and global warming will also affect this water crisis. One scientist points out that with every increase of one degree centigrade, the temperate latitudes move 62-125 miles farther away from the Equator. This means that the most productive farm areas of today could become arid or semi-arid.

Water wars are likely, especially in the African basins of the Nile, Niger, Volta, and Zambezi Rivers, with many people there already facing water scarcity or water stress. Another region subject to water shortage is the Middle East, especially Jordan and Israel. Dr. Dan Zaslavsky, Israel's water controller said in 1992 that the area would need large-scale desalination soon. (That was almost 20 years ago.) The investment of $2.5 billion is "less than the cost of a small war."

Meanwhile, global corporations are moving into the business of water supplies, which the World Bank says is a potential trillion-dollar industry. Multinational trade agreements and governing bodies such as NAFTA, GATT, and WTO define water as a commodity, so that a country cannot prohibit the export or import of water. But privatization of municipal water supplies often leads to prices too high for the poor to pay. Brian Howard reports that many families in Ghana spend 10 to 20 percent of their income on bottled water.

A UN Development Program report in November, 2006 called for an end to "water apartheid" in which wealthy people waste water to spray down driveways and keep up lush lawns, while others in the region can only afford to use about a gallon a day for all purposes. If developing countries can raise access both to clean water and better sanitation systems at the

same time, their rates of child survival could rise dramatically, "almost overnight," according to the report's author, Kevin Watkins.

The lack of clean drinking water is a major problem in many countries. One-fifth to one-third of the world's population lacks access to clean drinking water, and up to twelve million people a year die of diseases caused by unsanitary water. During disasters such as earthquakes and hurricanes, the lack of clean water is often a major concern. Yet a simple technology, solar disinfection, using only a plastic bottle and six hours of sunlight, appears to destroy most of the pathogens that cause diarrhea. A Swiss researcher, Martin Wegelin, tested the system and promotes it in a number of developing countries such as Nepal. The Global Resources Institute is developing a network of groups in various countries to introduce solar disinfection or SODIS.

Still another problem is the many hours a day spent by women and young girls in poor countries in order to procure drinkable water for their families. In sub-Saharan Africa they spend an estimated 40 billion hours yearly walking and standing in line to obtain water. This is equivalent to one year's labor for the entire French work force. Jacques-Yves Cousteau, pointing out that the condition of women is a measuring stick for population growth, says that to stabilize such growth, a priority is to drill wells and educate women.

Estimating Carrying Capacity: To live a modern lifestyle, people need a number of other resources, including energy sources such as oil and coal, and mineral ores for steel and other metals. All of these resources are finite; even uranium ore for nuclear energy is finite; and some vital minerals are already rare and expensive, perhaps supplied from only one or two countries. We may expect Science-and-Technology to find substitutes for some resources, but hardly all of them at once. The larger the population and the more people with aspirations to live the modern lifestyle, the greater stress there will be on these dwindling resources.

We can estimate carrying capacity at subsistence levels or at a given standard of living. For example, it might be that the planet could support 10 billion peasants but only one billion people at North American (U.S. and Canadian) standards of living. (These numbers are just for illustration although close to some estimates.) A 2002 article by Gigi Richard, professor of environmental science at Mesa State University, compares estimates by fourteen scientists or scientific teams of Earth's human carrying capacity, with high and low possibilities. These twenty-eight estimates vary between one and eleven billion humans, with the median low estimate at 2.1 billion and the median high estimate at 5 billion. You will note that current world population has already exceeded the median high estimate.

Most of these scenarios would require drastic changes in consumption patterns to achieve the higher estimates. For instance, Brown and Kane (1994) say to achieve a worldwide carrying capacity of ten billion humans would require them all to live at a level of consumption similar to that of India's today.

Ecological Footprint: Another way to describe environmental sustainability is the *ecological footprint*. This analysis measures the amount of ecologically productive land and sea necessary to sustain a given population by taking into account the use of energy, food, water, building materials, fibers, and other consumables. Humans are increasingly consuming renewable resources faster than they can renew themselves. Several footprint calculators are available online.

Mathis Wackernagel, co-author of Our Ecological Footprint, says that at the present population of Earth, "nature provides an average of 5 acres of bioproductive space for every

person" while also giving room for other species. However, humanity's footprint may already be thirty percent more than our fair Earth share. The largest footprints are those of the United Arab Emirates (40 acres per person) and the United States (30 acres per person). Most European nations have a footprint about half as large as that of the United States, and some nations such as India and Bangladesh have footprints smaller than five acres.

Some who study population say the problem is not that there are too many people but that there are too many rich people (the millions living in industrialized nations and using up world resources at a prodigious rate). Unfortunately, we rich people do not much like that message; and some of the world's not-so-rich-people dislike the idea that world conditions may permanently disbar them from ever becoming rich people too.

However, this book is not solely about population: that is just the first of our complications! The second paradox in our Human Success Formula has to do with pushing Nature around. We may be pushing her (or him, or it) past the point of no return.

Chapter 2: Technology, a Blind Bargain

Can a man take fire in his bosom, and his clothes not be burned?
Bible, Proverbs

We push Nature around through our technologies, the means by which we produce food and all the material things of civilization. Three ancient technologies that shaped the direction of human development had to do with *taming*: the taming of fire, of plants, and of animals. Actually, hominids who were not yet 'Man' learned to preserve natural fires, and then to produce them. This alliance with combustion made it possible for our ancestors to migrate and settle in colder areas for which our bodies were poorly adapted because of our tropical origins.

Eventually domestication of cattle, goats, pigs, poultry, and other animals followed, making sure that herds or flocks did not disappear through migration or over-hunting. Animal domestication made life simpler and more secure, if less interesting and less tied to the cycles of nature. Herder families could have more children, because animal milk supplemented human milk, and populations began to rise.

Domestication of plants and their improvement through selective breeding provided still more security. Agriculture allowed humans to settle in one place with a steady source of food in sufficient quantity to support a much larger group of people living together. Surpluses allowed society to support new specialized roles. Agriculture was thus the beginning of towns, cities, and civilizations.

There were some downsides to all this. Susan Blackmore in *The Meme Machine* points out that although farming spread in a great wave from the Middle East to Northern Europe between 10,000 and 4500 B.C., "in fact, it seems that farming did not make life easier, nor did it improve nutrition, or reduce disease….Memes can spread because they appear to provide advantages even when they do not."

The first disadvantage is that living in denser human concentrations meant that diseases could easily move through a larger population. In addition, many diseases and parasites jumped to humans from our domestic animals. Measles and tuberculosis came from cattle and influenza from pigs. We share 300 common diseases with our dogs, according to Jeff Sossamon of the American Kennel Club's Canine Health Foundation. The Avian Flu is but the most recent of a long series of accidental borrowings.

Storage of grains attracted other species that wanted to partake of our bounty, notably mice and rats, two rodents with so many uncanny similarities to humans that scientists use them as experimental animals to mimic our physiological reactions and even our behavior. The rat is the civilized human's shadow, and rats have often carried catastrophic illnesses from one human habitation to another. Both species of rodents also—and to this day—account for large losses in the distribution of food.

The fact of community surpluses in storage also attracted another species—humans. Once the people of Central Asia had tamed the horse, approximately 3000 BC, gangs of marauders could gallop into an agricultural village, steal stored grain and maybe a few women, and ride off into the sunset. So we see the beginning of property was quickly followed by the beginning of organized theft and eventually by the early nation-state, whose ruler demanded tribute from all the villages around, a sort of organized theft on the grand scale.

Another problem that developed was the ancient conflict between the herders of sheep and goats, and the farmers. Goats in particular can destroy an olive grove or vineyard in nothing flat. Many Mediterranean countries such as Spain and Greece were once much greener before goats or sheep overgrazed portions of them down to the rocks.

The growing of crops allowed our ancestors to enlarge their populations, but dependence on a few plant species also meant that several years of drought or a plague of grasshoppers might reduce them to famine. Once people had settled, they no longer had the option to migrate, nor could they hunt and forage enough food nearby to feed them all. In addition, some groups that were heavily dependent on one staple crop did not receive optimum nutrition.

Not all peoples turned to agriculture. According to Evan Eisenberg in *Ecology of Eden*, several African tribes—the Bobo of Burkina, Khasi of Assam, and followers of the Dogon myth from Mali—believe that the original harmony of the world was destroyed when farming began.

Fire technology did not show its worst face until the last few hundred years, with accidental conflagrations in large cities such as London and Chicago, pollution from burning fossil fuels, global warming from by-products of combustion, and wartime use of incendiary weapons. The ancient Greeks gods severely punished Prometheus, the legendary bringer of fire to the human race, because he gave too much power to mortals, not because of fire's potential pollution and dangers.

So from the beginning our technologies have had disadvantages, but we generally forget about them in the triumphal idea of constant progress.

Industrial Technology

Technology [is] the knack of so arranging the world that we need not experience it.
Max Frisch

Within the last two hundred years or so, the human mainstream has made increasing use of technology in terms of mining, machines, and mass production. The rate of population growth has skyrocketed. The standard of living rose for great numbers of people. As we are now committed to the path of industrialization, most of us assume it is a good thing. With industrial technology, we produce material things that we need. We also produce many things that we don't need: 'junk food,' high fashion, suburban houses as large and filled with treasure as castles or museums, plastic kitsch, personal vehicles as big as tanks, electric can openers, talking dolls, jeweled dog collars, and weapons of war. But whether necessities or luxuries, material objects require finite resources and energy from finite sources to produce them.

We are no longer afraid of nature, except for the occasional hurricane or earthquake, and most of us in the industrialized nations treat nature with contempt. Everything else on earth that is not actually *us* is for our use: it is raw material, natural resources, ours for the taking. Some take their cue from interpretations of the Christian Bible (although others find a greener revelation in holy books). Some assume that their idea of exploiting nature is 'scientific' although they are more comfortable with the understandings of nineteenth century science than with twentieth century cosmology, quantum physics, ecology, and chaos theory. Their assumptions are mechanistic. Whether or not they are qualified to speak for Science, they do.

Others are ideologically motivated to oppose any restriction upon the individual's "moral right" to do whatever he pleases with earth's resources. (See Book 2 for examples by Objectivist-libertarian Robert James Bidinotto, a "leading opponent and critic of environmentalism.")

Increasingly, someone points out that the coal, oil and natural gas that fueled this last great surge of population growth will eventually run out, and oil may already have started its decline. However, we Westerners are on a roll now, and most of us are not listening. We believe what we want to believe. We'll figure out something else, like fusion power or the hydrogen economy. Science will provide. We are as gods, so clever that we can dispense with the natural laws that worked for a billion or two years before we got here. Whatever works is okay. We want short-term results and we get them.

Some of the changes precipitated by humans are very gradual, longer than the lifetime of one single human being. Many small, imperceptible changes eventually turn into major change. Erosion, resource depletion, and pollution are dangers often overlooked at first. A century of heavy fossil fuel burning turned into Global Warming, now developing faster than predicted. Behind the short-term advantages that we wrest from nature lurk unknown consequences that sometimes take centuries to notice. At that point, they may take centuries or even millennia to undo—unless they are in fact irrevocable changes such as extinctions or a runaway greenhouse effect.

The purely pragmatic approach does not take into account the way everything on earth is interconnected. This ability to see the whole may be the crucial understanding that makes the most difference for our survival.

Problematic Technologies: Nuclear Energy

When it comes to safety, a nuclear accident anywhere is a nuclear accident everywhere.
Najmedin Meshkati, Physicist, University of Southern California

Four extremely problematic technologies have developed in the sixty years since World War II—or they are currently developing. These are nuclear technology; toxic chemicals, notably Persistent Organic Pollutants (POPs) a category of the 70,000 or so largely untested synthetic compounds now in production; biotechnology; and nanotechnology. Genetic engineering, Nanotechnology, and Robotics are sometimes abbreviated GNR as three overlapping technologies which are now being developed faster than you think.

Nuclear power plants are an important part of supplying electricity worldwide and currently enjoy a revived interest in the United States. But a 2003 MIT study ("The Future of Nuclear Power") says there are four unresolved problems in the way: "high relative costs; *perceived* adverse safety, environmental, and health effects; potential security risks stemming from proliferation; and unresolved challenges in long-term management of nuclear wastes."

Let us review some of these "perceived" adverse effects and the problem of *radioactive waste*, which continues to be dangerous for thousands or millions of years, through earthquakes, revolutions, and who knows what changes yet to come on this Earth. Promoters of the nuclear industry keep saying that they have solved the waste problem. They claim their containers or ceramics can hold radioactive material safely through the millennia required but the only problem is that nobody wants it in their backyard. Vladimir Putin, the president of Russia, indicated in 2006 that Moscow would bury radioactive waste in Russia's backyard, for a price. The U.S. has also proposed its own program to import and reprocess foreign spent fuel, greatly increasing a pollution and security risk without disclosing any benefits to the American people.

A recent news item in *Scientific American* says that a ceramic called zircon, intended to be a container for nuclear waste, is not as stable as previously believed. It would last only 1,400 years rather than the 250,000 years required.

Whatever is the state-of-the-art plan for disposing of nuclear waste, in actual practice human carelessness and cost-cutting have resulted in travesties such as the Idaho National Laboratory, where boxes and barrels of radioactive waste are buried in unlined pits and trenches a few hundred feet above the Snake River Aquifer, an underground water source for the region. The Defense Facilities Safety Board found Plutonium 238 stored in paint cans. Such improper containers have already resulted in several accidents that exposed workers to radiation.

The second problem is that fissionable material can also be used to make weapons, whether by a 'rogue state' (and exactly which of them are not?) or by terrorists. In July 2007, Reuters reported that U.S. undercover investigators posing as a fake firm acquired a license and altered it to buy radioactive materials in quantities sufficient to build a 'dirty bomb.' The Government Accountability Office (GAO) said that the Nuclear Regulatory Commission approved the license in only 28 days, after a couple of faxes and phone calls, and without a visit to the (nonexistent) facilities. The license was mailed to a drop box at a UPS center.

Then there is the danger of theft. The *Economist* says:

> The sheer volume of material being processed makes it impossible to be sure none has been pilfered; the IAEA says it takes only 8 kg (17.6 lb) of plutonium and 25 kg of highly enriched uranium to make a bomb; others say less….Even in a time of climate change, it's hard to be a nuclear booster.

The problem of waste is not limited to nuclear power plants or military weaponry. An AP article points out that "There are millions of radioactive devices in use for which there is no long-term disposal plan." These include medical devices and smoke detectors. The discarded ones were being stored in thousands of urban locations across the United States.

Third, there is still a danger of nuclear accidents such as Chernobyl. It is disturbing that 92 percent of the U.S. nuclear power plants operating in 1996 broke federal safety regulations during the following five years, according to *Harper's Magazine*. After 30 years without building any reactors, the industry planned to apply for as many as 31 new licenses by 2010. The government was giving multi-billion dollar loan guarantees. But the chairman of the U.S. Nuclear Regulatory Commission, Dale Klein, recently warned against a "bubble" in this rush, saying "Thirty years ago, a lot of people jumped onto the nuclear bandwagon that didn't understand the culture, the issues, the procedures, the practices."

Najmedin Meshkati, an Iranian-born engineer who is now a leading U.S. expert in nuclear safety, worries that the Russian technology and human error that caused Chernobyl could also cause an accident in Iran, since Russian contractors are supplying Iran's reactors. Meshkati visited Chernobyl and was shocked by the design of the control room of reactor 3, like "someone had thrown dials into a bag and tossed them against the wall." He says "Russian control room design and nuclear safety culture are still among the worst in the world."

Under the Nuclear Non-Proliferation Treaty (NPT), every country that signed the treaty including Iran is entitled to get technical assistance from the International Atomic Energy Agency (IAEA). However, in February 2007, pressure from the United States caused the IAEA to withdraw 22 of 55 technical projects with Iran, several of them related to nuclear safety. Meshkati says preventing Iran from getting the safest nuclear technology could lead to another Chernobyl and cause contamination throughout the Gulf and elsewhere. "Nuclear safety must be decoupled from political considerations. Technology and know-how that relate to nuclear safety should never be made a pawn of political feuds."

 On March 11, 2011, a disastrous earthquake and tsunami in Japan broke down the cooling systems in several reactors at the Fukushima Daiichi nuclear power complex. The reactors had not been designed for an earthquake of this magnitude, and the Tokyo Electric Power Company had a history of falsified safety reports and faked repair records. At this writing, some nuclear experts said there was still possibility of an unprecedented "core-on-the-floor"situation (when radioactive fuel burns through containment layers and creates a huge, radioactive steam explosion). This could make Japan's water supply radioactive for millennia and would be a catastrophe on the scale of Chernobyl. According to *Stars and Stripes*:

It's never happened before, but experts fear it may soon become reality in one or more reactors at the Fukushima nuclear complex, which was gravely damaged in last Friday's 9.0-magnitude earthquake and ensuing tsunami."We are right now closer to core-on-the-floor than at any time in the history of nuclear reactors," said Kenneth Bergeron, a former Sandia National Laboratory researcher who spent his career simulating such meltdowns, including in reactors of the type at the Fukushima plant.

Some European nations were rethinking their dependence on nuclear electricity, as tens of thousands of anti-nuclear protestors in Germany on March 12 formed a human chain 28 miles long between the Neckarwestheim nuclear plant and the city of Stuttgart. Three days later Prime Minister Angela Merkel closed down the seven nuclear reactors built before 1980 for a three-month moratorium. However, the United States, Russia, China, and several other nations did not seem to be backing away from the development of nuclear power.

Many countries in Asia are increasingly dependent on nuclear power. This includes Indonesia, building its first reactor on the island of Java where an earthquake killed almost 6,000 people in May 2006, and where the Mount Merapi volcano may erupt at any time.

Another kind of hazard arises from the mining of uranium, which is toxic to miners and pollutes groundwater and underground waters. There is also the danger of accidents in the transport of nuclear materials and waste, which often use highways near large cities.

The fifth set of hazards arise from military use of nuclear power. The military has a reputation for secret and careless handling of fissionable material and radioactive waste. For example, in 2004 a team of twenty scientists went to the coast of Georgia to find a hydrogen bomb lost in 1958, one of eleven "Broken Arrows" (the euphemism for nuclear bombs lost during accidents). Although the Georgia nuke is emitting radiation, the Air Force claims that there is no danger of a nuclear explosion because the bomb did not contain its trigger. According to the Pentagon, there were 32 accidents involving U.S. nuclear arms between 1950 and 1980, but according to a GAO report there were at least 233 accidents during that time.

Comments at a science site claim that an area 365 miles square around the Farallon Islands National Marine Sanctuary, 27 miles from San Francisco, has for 30 years served as a nuclear waste dumping ground for nuclear labs such as Lawrence Livermore. A new analysis published in July, 2010 states that the amount of plutonium buried at the Hanford Nuclear Reservation in Washington State is almost three times as much as the federal government had reported earlier.

As of 1995, the U.S. government estimated that the cleanup of radioactive waste remaining from decades of nuclear weapons production would cost between $230 billion and $350 billion. It would take longer than the forty years of the Cold War to clean up Hanford, the Savanna River complex in South Carolina, Oak Ridge, Rocky Flats, and the Idaho National Laboratory. Note that at the rate of current annual budgets, the cleanup would take up to one hundred years.

In 2004, the nuclear cleanup was on hold because the Department of Energy (DOE) wanted states to accept a new plan reclassifying some radioactive waste to make disposal easier and

cheaper. The DOE threatened to withhold $350 million earmarked for the next fiscal year if the states did not agree. The NDRC, Snake River Alliance, and two Native American tribes sued the DOE about the new plan and won in federal court, but the DOE then asked Congress to rewrite the applying law, which it did, allowing DOE to reclassify the waste. However, the final decision is currently ricocheting between the Nuclear Regulatory Commission, DOE, Congress, NDRC, and the State of Washington, which opposes the reclassification.

Some weapons make use of the nuclear waste from producing enriched uranium. This so-called depleted uranium or DU is abundant and cheap as well as effective in weapons. The United States stores an estimated 1.5 billion pounds of depleted uranium. Few civilians realize that DU weapons, used by the U.S. and allies during the Gulf War, Bosnia, Afghanistan, and Iraq War, are in fact nuclear weapons. Despite the word 'depleted,' the uranium used is sixty percent as radioactive as natural uranium. The fine dust left behind has a half-life of 4.5 billion years.

Persistent stories emerge about former peacekeepers or soldiers who appear to be ill from DU, and about areas of Afghanistan and Iraq with extremely high rates of unusual birth defects and stillbirths. About thirty percent of Gulf War veterans are ill with *something*, but the Department of Defense does not admit DU is hazardous and the VA does not recognize DU even as a contributing cause of Gulf War Syndrome.

Journalist and former bomb maker Bob Nichols says that the entire Middle East is now contaminated with uranium oxide particles. Researchers found that Israeli sperm concentration has declined by 40 percent in less than 10 years, and if this rate of decline continues, Israelis will be sterile by 2020.

Many politicians and scientists promote nuclear power as an alternative to the fossil fuels largely responsible for global warming. They present it as less expensive than it is, by neglecting the energy costs of energy production. According to Dr. Helen Caldicott, an Australian medical doctor who for many years has dedicated herself to learning and speaking about nuclear power, "enormous quantities of fossil fuel are used to mine, mill, and enrich the uranium needed to fuel a nuclear power plant, as well as to construct the enormous concrete reactor itself." Caldicott claims the plant must operate for almost two decades to produce the equivalent of the fossil fuel used in its preparation and construction. In addition, a great deal more energy is needed to dismantle nuclear plants at the end of their operating life (about 40 years) and then for the final transport and long term storage of nuclear waste.

Another MIT study in 2010 ("The Future of the Nuclear Fuel Cycle") says that the availability of uranium will not be a limiting factor in nuclear production for several decades, but "more research is needed to develop improved fuel-cycle options." The report recommended a new alternative:

 an enriched uranium-initiated breeder reactor in which additional natural or depleted (that is, a remnant of the enrichment process) uranium is added to the reactor core at the same rate nuclear materials are consumed.... a much simpler and more efficient self-sustaining fuel cycle. There's an additional benefit to this concept that would provide a built-in protection against nuclear weapons proliferation: Large amounts of separated plutonium, a nuclear-weapons material, are needed to start the breeder reactors in the traditional fuel cycle. In contrast, the starting uranium fuel could not be used for a weapon. *On the downside, however, there are little hard data on whether such a cycle would really be practical and economically competitive.* (My italics)

Again, more research is needed, adding to the long lead-in time required for building nuclear reactors. As for the availability of uranium, scientists Jan Willem Storm van Leeuwen and Philip

Smith have a different slant, saying that as long as rich uranium ores are available, nuclear reactors will produce far less CO_2 emissions than fossil fuel plants. However, they estimate that by 2010 the rich ores will be exhausted. Energy needed to exploit leaner ores will then require more fossil fuel energy than the energy yield of the nuclear power-plant. Fifty years ago the nuclear industry hoped to develop fast-neutron breeder reactors to reuse fuel but van Leeuwen and Smith say this appears to be a technological failure. "If that situation continues we can look back on a wasted half a century in which mankind, for much lower cost, could have instead developed truly sustainable energy sources."

In an essay about plutonium—a substance invented by humans solely for the purpose of making nuclear weapons—Joe Masco points out that plutonium does not exist in nature, yet with a life span of a quarter million years it is virtually immortal. In another paradox, plutonium is one of the world's most deadly poisons, destroying both humans and ecology, yet it has defined "national security" for sixty years. Masco says that plutonium has also produced deep changes in the social order:

> During the Cold War, access to plutonium was the basis for an unprecedented dual structured world….The huge sums of money and industrial infrastructure needed to break into the nuclear economy worked to support the centralizing power of the nation-state and the dominance of the 1st world over the 3rd. Today, the quickest way for any nation to become a global power remains a plutonium-mediated one—merely ten pounds of properly machined plutonium can generate immediate, and world-wide attention [for instance, North Korea]….It is almost inevitable that we will see a proliferation of nuclear powers…as plutonium continues to circulate around the globe.

Problematic Technologies: Toxic Chemicals. Industries introduce approximately one thousand new synthetic chemicals to the market every year, with U.S. testing conducted on only about a fifth of them. Combinations are not tested, although once they are in the environment, compounds are altered by other compounds. Of more than 80,000 chemicals used commercially since World War II, the United States regulates only five types: PCBs, halogenated chlorofluoroalkanes, dioxin, asbestos, and hexavalent chromium.

Toxic chemicals include those that are poisonous, carcinogenic (causing cancer), mutagenic (causing changes in the genes), and teratogenic (causing birth defects or otherwise adversely affecting fetuses). Many of these toxic chemicals or metals are by-products left over from manufacturing processes. There are also hazardous chemicals that may or may not be toxic, but are flammable, explosive, or corrosive.

When testing chemicals for toxicity, researchers customarily look for the effect of large doses, but with certain chemicals called *hormone disrupters* or *endocrine disrupters,* even a small dose can confuse the body's natural hormones. Hormone disrupters can affect both humans and wildlife, and are especially harmful in the embryo and fetus, where hormones control the development of organs and tissues such as the brain, sexual organs, nervous system, and immune system.

Congress in 1996 directed the EPA to include endocrine-disruption studies in the safety screenings required to license chemicals, but in 2006 the agency was still working to develop standards for laboratory tests to measure such effects. The EPA does not conduct its own research. William Souder notes: "Under the peculiar logic of pesticide regulation, it is the manufacturer and not the agency that is responsible for testing chemical products." The EPA does set up standards for the tests and requests raw data besides the conclusions from industry labs.)

Souder says that the EPA process for licensing pesticides has become increasingly more lax under a number of political administrations, both Republican and Democratic. The companies that make pesticides can "game" the system, and studies go on for years after clear evidence of problems. For instance, by 2002 research strongly pointed to the common pesticide atrazine as an endocrine-disrupter. That year the attorneys general of New York and Connecticut asked the EPA to ban atrazine, and a top U.S. Fish and Wildlife official complained that atrazine threatened endangered species. But EPA is still studying studies of studies.

Another danger with some chemicals is that living organisms can convert harmless compounds into harmful ones. For instance, mercury-compound effluent from paper mills and other industries often concentrates in lakes and rivers where microorganisms convert the mercury compounds into methyl mercury, which is quite toxic. Whatever eats the microorganisms is in turn eaten by something else, and so on—thus the methyl mercury concentrates in the food chain, perhaps ending with a fish that is eaten by a human.

Exposure to toxins is cumulative, and scientists call the total effect of chemicals a person's *body burden*. Scientific testing often detects toxic chemicals in human secretions such as urine, semen, and mother's milk. Some people are more sensitive to these effects than others, developing a multiple chemical sensitivity that severely limits what they eat, what they wear, what sort of houses and furnishings they can live with, and where they can go without encountering fumes or people wearing perfumes. Those who are chemically sensitive may be 'canaries in the coal mine.'

Fetuses, infants, and small children are especially at risk from toxic chemicals. Analysis shows that hazardous substances such as phthalates, triclosan, alkylphenols, and perfluorinated compounds from household products can move from the maternal blood through the umbilical cord to the unborn.

A number of studies suggest that sperm count in men has greatly declined over recent years, at least in some parts of the world. In 1992, researcher Elisabeth Carlsen analyzed 62 separate sperm-count studies and concluded that among men living in the industrialized world, sperm-count had declined about 40% over the previous fifty years. Industry researchers challenged her statistical methods. However, new research appears to confirm the decline. A study reported in the *New England Journal of Medicine* in 1995 indicated that sperm count declined 33% over twenty years among healthy, fertile men in Paris, France. Another study noted in the *British Medical Journal* found that comparing Scottish men of similar ages, sperm count had declined 41 percent from those born in 1941 to those born in 1969.

There is significant geographical variation in sperm count trends. Geographic patterns may provide clues to the causes, which are likely to be multiple, because sperm formation can be disrupted at many separate stages. Some suspected causes are phthalates, dioxin, PCBs, maternal smoking during pregnancy, and the pesticides alachlor, diazinon, and atrazine. These three pesticides, widely used for industrial agriculture in the Midwest, are frequently found in the region's water systems. Men in Missouri have the lowest sperm count compared to New York, Minneapolis, and Los Angeles.

Also, over the past twenty years, levels of testosterone in U.S. men have been falling; reasons are unclear.

A new category called Persistent Organic Pollutants is determined not by their chemical similarities but by how the chemical behaves in the environment and human body. POPs include many pesticides, along with PCBs, organochlorines, and byproducts of industrial processes and incineration such as dioxins. Any compound with the following characteristics might be labeled

a POP: it is not very biodegradable, persists in the environment, builds up in body fat, accumulates in the food chain, travels easily through the atmosphere and global waters, and may be linked to serious conditions such as hormonal, reproductive, neurological, and/or immune disorders.

Many U.S. environmentalists welcome the new category of POPs because they hope it will replace the existing and obsolete one-chemical-at-a time approach to regulation.

Accidental spills and the disposal of chemical waste are worldwide problems. In Germany a series of accidental spills in the Rhine River in 1986 poisoned water supplies for a number of municipal water systems and large brewers. An article in *The Times of India* in 1987 described severe chemical pollution in fourteen major Indian rivers. Greenpeace International lists a number of "toxic hotspots" including these in the United States: the Fox River in Wisconsin, Penobscot River in Maine, and Columbia River basin in Oregon. Another large region of toxic pollution is South Vietnam from the Quang Tri province to the Mekong Delta where the spraying of Agent Orange released an estimated total of 170 kilograms of dioxin. One source of toxic chemical pollution in Asia is 'ship-breaking.' The U.S. and European countries send decommissioned, contaminated warships to developing countries for scrapping.

As for hazardous waste sites, most Americans are familiar with Times Beach and Love Canal. They are hardly unique. In the United States, 1,305 Superfund sites are on the National Priorities List for cleaning up. About 11 million people, including 3-4 million children, live within a mile of Superfund sites. Besides the federal Superfund program, numerous other sources of land contamination are not tracked in national databases.

The worst chemical disaster to date occurred in Bhopal, India in 1984, when toxic gas leaked into a densely populated area from a poorly maintained factory owned by Union Carbide. An estimated 20,000 people died and 120,000 are chronically ill. Survivors have not received adequate compensation, and the site still leaks toxins into the groundwater.

Problematic Technologies: GNR

> *Your vision is machines for making more machines.*
> Gordon Bottomley, 1894-1948

Ray Kurzweil writes in a journal devoted to nanotechnology: "The first half of the 21st century will be characterized by three overlapping revolutions—in Genetics, Nanotechnology, and Robotics (GNR). The deeply intertwined promise and peril of these technologies has led some serious thinkers to propose that we go very cautiously, possibly even to abandon them altogether." One of those "serious thinkers" was Bill Joy, a well-known master of high tech who invented computer languages and who had previously supported new technologies. However, in the April 2000 edition of *Wired* magazine, Joy called for the voluntary relinquishment of GNR.

Kurzweil admits the many possible dangers of nanotechnology and GNR, and he advocates strongly for preparation of defenses before their expected full arrival on the scene within fifteen or twenty years. Nevertheless, he argues against relinquishing any of these technologies for three reasons: first, it would be "contrary to economic progress;" second, GNR gives the opportunity to "alleviate disease, overcome poverty, and clean up the environment;" third, the only way to stop GNR technology's advance would be through a "worldwide totalitarian system that relinquishes the very idea of progress." In other words, he claims GNR technology is unstoppable.

According to its *proponents*, here are a few potential dangers of a future nanotechnology. The worst possible case would be an accidental or intentional release of self-replicating nanobots: the 'green goo' scenario of biological destruction or the 'grey goo' scenario that endangers all physical matter, alive or not. Each self-replicating nanobot like a little 'PacMan' would consume everything it could reach in order to make more particles like itself. Kurzweil says that theoretically, an out-of-control, replicating nanobot could destroy the Earth's biomass in three hours. There are a number of lesser, but still grave scenarios.

Kurzweil says, "We will need to place twenty-first-century society's highest priority on the continuing advance of defensive technologies, keeping them one or more steps ahead of the destructive technologies." So, our highest priority would be to protect ourselves from this wonderful new technology.

The Center for Responsible Nanotechnology (CRN) lists a number of risks, including "horrifically effective weapons….As many as 50 billion toxin-carrying devices—theoretically enough to kill every human on earth—could be packed into a single suitcase." CRN says that the green or grey goo scenario is unlikely, and that non-replicating weapons are a more dangerous threat. This group also assumes that the technology is inevitable and imminent.

It is so imminent, in fact, that a newspaper article in October 2006 says that submicroscopic particles are currently incorporated in drugs, foods, cosmetics, and medical devices, the sorts of products which give the Food and Drug Administration a major role in regulating and guiding the future development of nanotechnology. The Project on Emerging Nanotechnologies lists over 320 nanotech consumer products already on the market, including vitamin sprays and anti-bacterial bags for food storage. Let me clarify, these are not self-replicating—that function is still in the future.

Karen Schmidt in says *New Scientist* that the very smallness of these particles means they could have unknown effects if they escape into the environment and are inhaled or swallowed. Researchers think three types of nanomaterials may be toxic: carbon nanotubes, spheres of carbon atoms called "buckyballs," and metal oxide nanoparticles. Some scientists find that carbon nanotubes are very similar to the ultra-fine particulates that are the toxic component of pollution from combustion. In fact, it is possible that they are the same thing.

Schmidt says that for technical reasons, working out the risks of nanomaterials to human health is "devilishly difficult." Also the coordinator of nanotoxicology research at the U.S. National Institute for Occupational Safety and Health (NIOSH) says that it is hard to know what industrial users are doing with nanomaterials. "It's very difficult to find out how products are being made, what the processes are and what the hotspots of [worker] exposure are."

Scientists and members of the U.S. House Science Committee recently issued warnings that the risks of nanotechnology must be studied but these warnings were couched in general, rather vague language. Kathy Jo Wetter of the ETC Group, appearing at an FDA conference, told the agency that it was understaffed, under-funded, and poorly equipped to deal with nanotechnology, noting that hundreds of nano products were already on the market with little oversight. Wetter said, "Unfortunately, so far the U.S. government has acted as a cheerleader and not as a regulator."

Some people enjoy living dangerously, but my hunch is that the vast majority do not wish to live on the brink of doom, no matter what the rosy scenario. Some of us remember the promise that nuclear electricity would be "too cheap to meter" and perhaps we have heard that World War I was "the war to end wars." Promises are cheap. I believe that cancer patients would turn

down a miracle cure if the price tag included even a small chance of the possible destruction of everything.

Another technology that is just around the corner is genetic genome engineering, or GGE. This is the branch of genetic engineering that proposes to change the very nature of humans, for those who want and can afford 'designer babies.' Soon our kids can look like movie stars, pitch a ball like Sandy Koufax, and think like Einstein. For the truly imaginative parent of the future, Junior may even sport fluorescent skin or grow wings. Of course, some proponents admit that GGE is likely to produce a caste system, as only the rich will be able to afford enhanced children, while the ordinary, dumb and ugly people like us become the underclass.

The growth of this technology depends on human cloning. Most governments have not been receptive to human cloning, but a few scientists may not wait. There are a few countries in which they can pursue their experiments unhindered. In any case, the social, ethical and spiritual dimensions of GGE are so far-reaching that I believe there should be a species-wide referendum about pursuing it, after fully informing everybody. In fact, every problematic technology should have had and should now depend on informed consent of the entire human race.

Transhumanism. While not a technology in itself, the new movement of Transhumanism envisions, prepares for, and promotes technological changes in the physical human (including cloning and cyborgs). Kurtzweil's article appears to accept such a vision when he says: "The *transbiological* era *will* ultimately give way to the *postbiological* era, but it is to be *hoped* that our values will remain influential" [italics are mine]. He also says: "*When* we have software running in our brains and bodies and controlling the world's nanobot immune system, the stakes will be immeasurably greater [concerning computer viruses and other software pathogens]."

While this vision may appear to be absurdly futuristic, as well as repellent to many, it is worth keeping in mind that new technologies that appear to have market value will often attract investment into research and development ahead of others. If they seem to have military value, even more research and development money will be available.

Our species is not controlling the development of new technologies but is instead leaving this up to a relatively few individuals who are interested in 'sexy' research, profits and/or power.

Chapter 3: Ecosystem Failure

Most people would rather die than think; in fact, they do so.
Bertrand Russell, 1872-1970

Almost all of the people you meet on your path care about others. They play by the rules. They seem sensible. They try to do their best. At least it has been my experience over many years that most people do mean well.

Yet all our many human decisions and actions added together, especially over the last century, have landed us in an unprecedented predicament. We are closer to the extinction of our species than at any time in the last seventy thousand years. Our demise would likely take the other more complex species along with us. However, most people do not even consider this possibility. Ecosystem failures are another way that 'business as usual' could destroy us. This third looming threat results from a combination of population pressure and destructive technology, in addition to ignorance, greed, and short-sightedness. There are three enormous, global disasters-in-the-making: the Sixth Extinction, Global Warming, and declining health of our planet's Ocean.

The Sixth Extinction: One sign of ecosystem failure is the Sixth Extinction: an ongoing loss of species, with the potential loss of half the Earth's wild animal species over the next century, and of a fourth of all plant and animal species by 2050. The major reason is loss of habitat by development and deforestation. However, climate change (global warming) may surpass these as a cause. Other major causes of extinction are pollution, the introduction of exotic species, and overexploitation, as by over-hunting (whales) or collecting (wild orchids). The previous five mass extinctions, many millions of years ago, resulted from natural disasters such as asteroid hits.

Species sometimes go extinct naturally. However, scientists can measure the background rate of extinctions, and by this measure, the recent rate of vertebrate extinction is about 7,000 times greater than the background rate. According to an estimate by environmental scientist James W. Kirchner and paleontologist Anne Weil, the recovery time for mass extinction is about ten million years.

Some people seem to think extinction is merely a sentimental, even aesthetic concern. "We'll still have our pets and beef cattle, won't we? I mean, I'll miss the hippos but we don't really *need* the wild creatures, do we?"

Well, yes we do. We need various pollinating insects to pollinate our crops. We need species that fix nitrogen. We need certain creatures to perform functions in the ecosystem so that other species, such as mice or grasshoppers or sea urchins, do not irrupt and run all over the place, destroying our own food sources. We need creatures that keep the oceans alive, that make the soil fertile, and that consume our garbage. Trees and ocean plankton take up the carbon dioxide that animals (and fossil fuel combustion) release. They are all part of the web of life.

Many plant species are also disappearing. Up to 47 percent of them are at risk. Whether we are vegetarians or meat-eaters, all our food ultimately depends on plants and their ability to synthesize carbohydrates using energy from sunlight. All of humanity depends on only about twenty staple crops, with wheat, rice, corn, and potatoes the top four. You may recall what happened in mid-nineteenth-century Ireland, so heavily dependent on the potato for its staple

food, when a potato blight caused crops to fail. Millions either starved or emigrated. Is it wise for us to depend so heavily on a few domesticated crops and let other potential human foods become extinct?

Ecological goods and services (EGS) are the benefits humans derive from ecosystems. Besides food production, this includes water supplies and their purification, flood protection, erosion protection, and climate regulation. Biodiversity (the existence of a large number of interacting species) is an essential component of EGS. One reason is that diversity allows a natural system to resist and adapt to changes such as disease or severe weather. It provides flexibility and stability for the system.

Greater species diversity also increases the efficiency of an ecosystem. Studies show that a wider range of species can better utilize their resources of water, sun, and nutrients. For instance, in a rainforest there are taller trees, under-story trees, and smaller plants, each with its associated animal life, each exploiting a different niche. A number of the most biodiverse rain forest areas need immediate protection, such as the Atlantic Forest in Brazil, Western Ghat in India, Madagascar, Indonesia, the Philippines, Melanesia, and several others. Another largely forgotten source of species diversity is the taiga, boreal or northern forests of North America and Eurasia. The two million square miles of North America's boreal forest is home to almost half its bird species at one season or another.

Several scientists estimated the annual economic value of the Earth's ecosystems and published the results in *Nature* (1997). They found the annual value of $33 trillion for ecosystem services, as compared to world GNP at that time of $18 trillion. Since Evan Eisenberg said the estimators used "conservative assumptions," one could say that ecosystem services are roughly double that of the world's combined human economies.

We do not know all the potential benefits of species diversity. For instance, a plant disease that devastated rice crops in India and Indonesia in 1970 threatened tens of thousands with famine. Scientists tested 6,273 varieties of rice in order to find the one variety that had a gene resistant to the disease. Other species serve as a living library of information. Some speculate that early humanoids learned to weave baskets by imitating the weaverbird and to craft with clay from watching the potter's wasp. Modern scientists have studied and adapted numerous animal traits and products for human use such as glues, spider silk (which is extremely strong), the condition of dormancy (medical applications), and the hexagonal shape of honeycombs. Aircraft designers base new wing designs on the flippers of humpback whales and the flexible joints of seagull wings.

Many herbs, first used by indigenous healers, were then synthesized as pharmaceuticals. In fact, we have very few medicines without wild plant origins. The fact is that our lives are quite interwoven with other species, whether or not we as individuals or societies realize this. James Smith, Commissioner of Yukon Territory, said:

> *Every time we eliminate a species...we reduce the complexity of the systems upon which our very existence depends. Our emotional concern to save the animals from extinction is therefore a reflection of man's desire to extend his own survival on this planet.*

Global Warming: The most frightening planetary ecosystem failure is climate change. The American public has been slow to take this threat seriously, especially because of propaganda that pooh-poohs it. As late as 2005, a survey by Anthony Leiserowitz found that most Americans believed global warming mostly threatened nature or people in distant countries. Only 13 percent saw any real risk to themselves and neighbors. Since then, the American public has begun to

recognize global warming as the immense problem that it is—due in part to hurricane Katrina, to a film "The Inconvenient Truth," and to the full emergence of this issue in the media, with new scientific findings and predictions almost daily. Although Americans now seem convinced that global warming is real, a Pew Global Attitudes Project poll in June, 2006 found that only nineteen percent of us care about it "a great deal," compared with sixty-six percent of Japanese and sixty-five percent of Indians. To date no major laws have passed Congress to help cut the pollution that leads to global warming. However, most other countries and many international businesses including large insurance companies do take global warming quite seriously.

Effects Are Already Evident. The three greenhouse gases that contribute most to global warming are CO_2, nitrous oxides, and methane. Humans produce these gases by our agriculture and industry, and by the increasing scale of these activities because of our growing numbers.

The hottest year on record so far was 2005 (tied with 1998), and 2007 is not over yet. Swiss meteorologists say the European heat wave that killed 20,000 people in 2003 was quite different from previous heat waves. An MIT study found hurricanes and tropical storms had increased 100 percent in intensity and duration since the 1970s. Australia suffers a "1,000-year" drought, worst on record, and scientists predict a permanent drought, similar to the 1930s Dust Bowl, in the U.S. Southwest within decades.

Besides its role in changing weather patterns—creating heat waves, more severe storms, droughts and floods—global warming contains the threat of rising sea levels from the melting of polar ice sheets. A fleet of satellites that monitor sea levels show that oceans are rising about 50 percent faster this decade than in previous ones. Four hundred thousand square miles of Arctic sea ice have melted since 1975. While this will not directly raise sea level, it is a sign of the melting that is also occurring on land. After sea ice melts, the dark water absorbs the sun's heat instead of reflecting it as Arctic ice does. This creates a feedback mechanism that increases the rate of global warming. The loss of Arctic sea ice will also extinguish the polar bear. Lacking platforms to rest from swimming, the bears will drown. A significant rise in sea levels would inundate many low-lying countries and areas, destroying coastal cities such as London, Venice, Calcutta, New York, and Tokyo, as well as large areas of Egypt and Bangladesh. Two-thirds of the world's major cities are along coasts

Among the threats of global warming is the loss of ancient water supplies for people in China, India, and parts of South America, because of the rapid melting of mountain glaciers. The most catastrophic possibility is runaway change due to feedback mechanisms leading to a hothouse planet that might not be habitable.

Changing weather patterns from global warming have already severely affected some parts of the world. The Maasai people of Kenya are appealing to the world for "urgent action" because their way of life is threatened by emissions from developed countries. "We had hardly little rains for the last three years, animals are dying, children are not going to school and women spend most of their time in search of water, not doing economic activities to support their livelihood," said a Maasai tribeswoman, Sharon Looremetta. The Maasai themselves rarely use vehicles or burn fossil fuels.

A number of non-human species are already at risk specifically from climate change, including many species of frogs and other amphibians, twenty-six bird species, and the spectacular King Protea, national flower of South Africa. Bears in northern Spain have stopped hibernating.

Tipping Points. The chief climate scientist at NASA, James Hansen, was one of the earliest researchers to call attention to global warming. He now says that we are close to a tipping point, after which it would be out of our power to prevent the most catastrophic changes. Hansen says: "I think we have a very brief window of opportunity to deal with climate change...no longer than a decade, at the most."

John Schellnhuber, distinguished science advisor at the U.K.'s Tyndall Centre for Climate Change Research, has identified twelve global warming tipping points. They connect with each other, and triggering any one of them is likely to start sudden, catastrophic changes worldwide. According to an article by Julia Whitty, the tipping points are:

- **Amazon rainforest**, which climate models predict will change from wet tropical forest to savanna within this century, *even if deforestation stops now*. The loss of trees makes Amazonia a net CO_2 producer, accelerating global warming. (The year 2005 was the driest for the Amazon in forty years, with many wildfires raging.)
- **North Atlantic Current** gains more water as ice caps melt, diluting the ocean and potentially halting its thermohaline circulation (THC) or oceanic river that warms Europe. (A 2005 study found that a vital component of the THC had suddenly slowed by 30 percent.)
- **Greenland Ice Sheet** holds 6 percent of the Earth's freshwater. If it melts, this would raise sea levels by about 23 feet worldwide. That, in turn, would affect the THC. (A joint study by NASA and the University of Kansas found that Greenland's ice doubled its rate of decline between 1996 and 2005.)
- **Ozone Hole**—it never went away, and a general thinning of the ozone layer continues. Predictions are that the ozone will not start healing until about 2018. Meanwhile, increased ultraviolet radiation harms the phytoplankton, the tiny ocean plants which "mitigate atmospheric carbon dioxide more powerfully than any other known agent."
- **Antarctic Circumpolar Current** circulates 34 billion gallons of water around Antarctica each second, bringing up nutrients from the ocean bottom. These nutrients feed the phytoplankton. A Princeton study in 2006 described this ocean current as the planetary key to the balance of nutrient and carbon cycles.
- **Sahara Desert** will probably get more rainfall on its southern side, shrinking the desert. Offhand that sounds good. However, the Sahara will then emit less dust to feed the Atlantic phytoplankton, to suppress the formation of hurricanes, and to fertilize the trees of Amazonia.
- **Tibetan Plateau** comprises a million square miles of mountains and steppes, with hardly any inhabitants. Global warming that melts its snows would uncover dark soil that absorbs sunlight instead of reflecting it, creating a positive feedback loop. This 15,000 foot high "chimney" also mediates between earth and sky, cooling the stratosphere which in turn affects other climate systems.
- **Asian Monsoon** may be strengthened or weakened by global warming or may fluctuate between these changes. More than half the world's population has adapted to living with the monsoon as it is, and changes could be catastrophic. There is also a connection between monsoons and the North Atlantic thermohaline circulation or THC.
- **Methane Clathrates** are reservoirs of frozen methane under the ocean floor and the Arctic permafrost--one to 2.5 trillion tons of the stuff. If the permafrost melts, it could release gigantic "burps" of methane that catastrophically amplify the effects of global warming. One hypothesis is that such a burp triggered the Permian-Triassic extinction 250 million years ago.
- **Salinity Valves** are the chemical plugs that allow oceanic bodies such as the Mediterranean, Caribbean, and Java Sea to maintain very different ecosystems. Warming oceans may unbalance these.

- **El Nino** could become a constant phenomenon, with intense droughts and floods afflicting half the globe, if warming waters unbalance its tipping point.
- **West Antarctic Ice Sheet**, if melted, would raise ocean levels between 16 and 50 feet worldwide. It contains seven million cubic miles of ice. (Recent data from the British Antarctic Survey suggests that its ice is beginning to thin.)

Several climate scientists agree that individual action is crucial—it "gets you 10, 20, 50 percent of the way," according to Stephen Schneider of Stanford. But most scientists appear to believe that government action is even more essential, especially action by the United States, the developed country contributing the most to global warming pollution while so many of its officials and politicians deny it. We need both/and individual and government action—and as soon as possible.

Oceans: Still a third sign of ecosystem failure is the unhealthy condition of our oceans or one Ocean. This interlinked body of water covers seventy percent of Earth's surface and our survival depends on its surface plant life to serve as the planet's 'lungs' (together with the tropical forests). Many humans also depend on sea life to feed them. But over-fishing, especially by industrialized fishing fleets supported by heavy subsidies from rich countries (around fifteen billion dollars yearly), is stripping the Ocean of its keystone species. Ninety percent of big predator fish such as tuna, marlin, sharks, and cod are already gone

Twenty-nine percent of commercial fish and seafood species have collapsed from over-fishing and pollution, according to a team of ecologists and economists reporting in *Science*. The lead author, Boris Worm, said that "if the long-term trend continues, all fish and seafood species are projected to collapse...by 2048." He added that it was not too late to turn this trend around, but that "it must be done soon." The researchers called for a shift from single species management to ecosystem management, new marine reserves, prevention of over-fishing, and tighter controls on pollution.

Almost half the world's population lives within sixty miles of a coast. Their construction, sewage, agricultural run-off, and industrial pollutants are destroying marine habitats, especially coral reefs. Coral reefs contain as much as one-fourth of all marine species, and they could be lost in the next 20-40 years. Fertilizer runoff from farms results in toxic algae blooms called red tides. Other pollutants include pulp mill wastes, insecticides, oil spills and leaks, radioactive waste, flame retardants, and detergents. Some whale populations that have been preserved by international treaties regulating whale-hunting, are now dying because their bodies are full of PCBs.

We are treating the Ocean like a toilet and garbage dump, although our lives depend on its health. Every year the Ocean receives an estimated seven billion tons of litter, the majority of it plastics Seabirds, fish, and other marine animals die from swallowing bits of plastic or getting entangled in discarded fishing lines and nets. Cruise ships contribute to the problems of litter and pollution; they may also discharge invasive non-native species and pathogens in their ballast waters at ports.

Excessive atmospheric carbon from the burning of fossil fuels for the last two centuries has increased the acidity of the ocean to a "level irreversible in our life-times" according to the British Royal Society. Increased acidity could further affect the Ocean's ability to absorb greenhouse gases, adding to the effects of global warming.

Overshoot: Back in 1982, Professor William Catton wrote a hugely important but little-known book about our species, *Overshoot: The Ecological Basis of Revolutionary Change*. It

describes our species' transition into *detrivores* (rather than carnivores, omnivores, or herbivores). That is, we are becoming creatures that live off of dead matter (fossil fuels and mineral ores). We eat food that (we presume) is impossible to produce without petroleum-dependent machines, petrochemical fertilizers, and petrochemical pesticides; and sometimes we literally eat petrochemical products (for instance, foods with artificial colors that are coal-tar derivatives). Thus a way of life turns into a paradigm, and humans behave as though we are as dependent on fossil fuels as a koala bear is dependent on certain varieties of eucalyptus trees—the only diet it will eat, or die.

Catton says that with the high energy lifestyle of increasing numbers of our species, the species *Homo sapiens* is fast becoming *Homo colossus.* Living off the accumulated detritus of the planet, we are fated to crash after our blooming, just like a wine-yeast in a vat full of grape detritus.

> It was thus becoming apparent that nature must, in the not far distant future, institute bankruptcy proceedings against industrial civilization and perhaps against the standing crop of human flesh, just as nature has done many times to other detritus-consuming species following their exuberant expansion….No group of leaders conspired knowingly to turn us into detrivores. Using the ecological paradigm to think about human history, we can see instead that the end of exuberance was the summary result of all our separate and innocent decisions to have a baby, to trade a horse for a tractor, to avoid illness by getting vaccinated, to move from a farm to a city, to live in a heated home, to buy a family automobile and not depend on public transit, to specialize, exchange, and thereby prosper.

However, we are no longer innocent and must consider our decisions much more carefully from this day on. Living as detrivores greatly foreshortens our future.

If we were to push Nature, the biosphere on which we depend for life, past the point of no return—then what? Where would we find more opportunities for this opportunistic species of ours? According to one view, we humans should combine our knowledge and resources to move off earth, go out into space, and build artificial habitats or terraform existing objects in space. That would be a technological version of what we did by overspreading the earth in the first place.

Such efforts to terraform space work on "Star Trek," but our problems cannot wait for twenty-fourth century technology. Even if we were ready, a crash project to move into space would require incredible amounts of money. For this plan, the moment seems to have passed either for the international cooperation needed or the cheap and abundant energy sources to fuel it, since most experts believe that we are close to or have already passed the peak of global oil supplies. Rather than look to futuristic fantasies, it would be infinitely easier to take better care of the planet we have, so ideally suited to human needs, so diverse and self-sustaining until now.

A lot of humans are in denial about all these self-caused problems, but there is yet a fourth one that at times seems to be the most urgent of all: the Wars.

Chapter 4: Endless War—What Next?

Either man is obsolete, or war is.
Buckminster Fuller, American architect and futurist, 1895-1983

How did we come to be in the position of being able to destroy each other on such a grand scale? Here is one story: Long ago when our ancestors were first out on the savanna, puny scavengers as yet without tools and surrounded by predators, they had to build up their nerve to defend themselves. Like many primates, these proto-people were territorial, and like our closest animal relatives the chimpanzees, these ancestors could get vicious on occasion. Eventually our line learned to hunt large animals such as elephants with stone weapons. That way of life, in which we ourselves were cooperative predators, apparently lasted for a couple million years, until climate changes and our own clever hunting skills combined to kill off many of the prey animals. Then most of us settled down to be farmers.

Yet somehow, through all of these changes, we still have something built-in about fighting. Maybe it is "I'll show you who is boss!" (Dominance) or, "We're surrounded by enemies with fangs!" (Fear) or, "Let's go and get some wild zebadox!" (Greed, Aggression) when in fact our ancestors hunted the last wild zebadox to extinction 10,000 years ago, and the closest thing to it today is another human being. That we are still hard-wired for violence is one story.

Reasons for actual wars, though, often have to do with material resources. The earliest evidence of organized warfare comes from the ancient Syrian city of Hamoukar in approximately 3500 BC. The evidence is 1,200 clay sling bullets and ruins of burned buildings. From other evidence, archeologists believe that Uruks from southern Mesopotamia occupied Hamoukar, perhaps to eliminate a political rival or to keep open a key trade route, according to the leader of the archeological team, Clemens Reichel. Many a war may be viewed as an economic stimulus package.

In any case, one study suggests that in the 5,600 years since Hamoukar there have been more than 14,000 wars, in which about 3.6 billion people were killed.

Most of us present-day humans do not voluntarily become part of collective aggression. Instead, governments force or entice young men (and lately women) in their late teens and twenties to serve as warriors. These young people are at the height of their physical ability and aggressive energy, but many have not yet developed their critical faculties to overcome indoctrination, so all in all, they are the best recruits.

War does not happen day in and day out in most places. Countries such as Uganda, Sudan, and Afghanistan have had war for decades, but they are still the exception. Women have been less directly involved in the fray, although as civilians they may be more at risk in modern wars than soldiers are. Many individuals will avoid fighting in a war even if they must go to jail or emigrate. Several of my own ancestors came to the United States in the 1840s and 1850s to escape conscription by German barons. Ironically, some of those ancestors then found themselves conscripted into the Union Army in the United States Civil War.

Furthermore, some human groups such as the Inuit and Kalahari Bushmen can hardly imagine going to war. It is true that the Inuit and Bushmen live in such difficult and marginal conditions that it would be sheer folly for them to be fighting each other as well. We civilized people, on the other hand, have all these neat surpluses and resources such as oil reserves to fight over until we bomb each other back into the Stone Age.

That so many of us are not enthusiastic about warring, indicates that the urge is not built-in too deeply. It may be, as some maintain, that modern war is mainly a function of—and the inevitable result of—the large, centralized nation state. Leaders who would rather play grand chessboard games of power and brinksmanship start wars, not the ordinary citizens who are subject to their war propaganda and trumped-up fears.

But deep impulse or not, a big group of us will on occasion get ourselves worked up as if there were a giant predator out there instead of another bunch of our own species, and we will let fly with everything we've got. Spears, arrows, and bullets were damaging enough, but now space weapons, radioactivity, fire, and poisons could render the Earth uninhabitable. No religion has yet done much to stop this insanity. In fact, God's interpreters often claim that He is on 'our side.' As for science, it is very useful for designing tools and weapons for war, but not nearly so helpful for teaching people how to live with them. Science has barely started studying peace and harmony. People are too unpredictable—hardware is easier. Nor is anybody handing out scientific grants to study conflict resolution and peaceful societies. The money is in weapons.

At this point, military hardware is very big business indeed, with the world shelling out 950 billion dollars a year for their militaries, largely for weapons of mass destruction (Stockholm International Peace Research). According to John Perkins, 2006 set a new record of $1.1 trillion. This global military spending almost equals the total annual income of the poorest half of the human race. Besides defense contractors, another vested interest is evident in the fact that world military establishments employ more than two percent of the global labor force.

Military historian Sir John Keegan says that warfare is a human habit that is much more likely to occur when the means are at hand. Since World War II the world has seen about 250 wars, killing at least 23 million people, two-thirds of them women and children. Over 35 major conflicts are going on today.

While only a few individuals are ever suicidal, collectively it's a different matter. Some people behave as though war is a videogame. They enthusiastically support the means of species suicide, thinking that it is always we who will employ them on the other guy. Despite the growing potential for ending our species, many people continue to think about war in a conventional way, in terms of flags and national honor, black hats and white hats. They also assume that their leaders will act rationally despite all historical evidence to the contrary.

Not only is armed conflict a habit, we could say that it is an addiction, a species-wide addiction. Maybe we need mass detoxification and a twelve-step program for individuals and societies addicted to war.

Nuclear Warfare: Complacency

I will be as harsh as truth, and as uncompromising as justice. On this subject I do not wish to think, or speak, or write, with moderation. No! no! Tell a man whose house is on fire to give a moderate alarm; tell him to moderately rescue his wife from the hands of the ravisher; tell the mother to gradually extricate her babe from the fire into which it has fallen; but urge me not to use moderation in a cause like the present.
William Lloyd Garrison, newspaper editor and abolitionist, 1805-1879

The Bulletin of the Atomic Scientists has moved the minute hand of the "Doomsday Clock," the symbol of nuclear danger, forward to its original setting of seven minutes until midnight just as it began sixty years ago. This action may shock some people who think that the danger of nuclear war ended when the Cold War ended in 1991.

According to Jonathan Schell, United States presidents have encouraged public complacency about nuclear dangers. In 1991, President George Bush said, "I saw the chance to rid our children's dreams of the nuclear nightmare, and I did." In 1997, President Bill Clinton said, "Our children are growing up free from the shadows of the Cold War and the threat of nuclear holocaust." However, says Schell, these statements expressed only an official fantasy, which the media dutifully bought into by avoiding the nuclear issue. Schell says:

> A whole generation came of age lacking even rudimentary information regarding nuclear arms and nuclear perils....The presidents who said that they had ended nuclear danger had not acted that way....Meanwhile, newcomers to the nuclear game moved to acquire the weapon.

Once the Berlin Wall came down, few realized that about 31,000 nuclear weapons remained in the world, including 6,000 aimed at the United States. According to the Union of Concerned Scientists, today the United States has 10,000 nukes either deployed or in storage. The United States and Russia each have over 5,000 weapons on alert.

Schell says that in the 1990s the U.S. media did not report on those who called for the abolition of nuclear weapons, which included, besides traditional peace and anti-nuclear activists, the seven governments of the New Agenda coalition of Brazil, Egypt, Ireland, Mexico, New Zealand, Sweden, and South Africa. Also speaking out were many retired U.S. military officers and civilian leaders, including General George Lee Butler, former commander of the Strategic Air Command and General Charles Horner, commander of the allied air forces in the Gulf War.

One of the most surprising abolitionists was Paul Nitze, a Cold War hawk who in 1950 had drafted the National Security Council Memorandum-68 that some regard as the charter of U.S. Cold War policy. Nitze now said that because of the huge lead the United States had in developing high-precision weapons, the country no longer needed nuclear weapons, and it would not be wise to use them. He recommended that the nation unilaterally get rid of them. Yet Nitze's proposal also "fell into the media silence that had swallowed up all other proposals for abolition."

Schell points out that there are only eight nations (at that time not counting North Korea) with nuclear weapons and only three had not signed the Nonproliferation Treaty: India, Pakistan, and Israel. Thus, abolition of nuclear weapons would require "persuading just three nations [now four] to live as would the 185 signatories [of the treaty]."

Others who have spoken out for nuclear disarmament over a series of decades were scientists, including many atomic scientists. A statement circulated by John Polanyi and signed by 110 Nobel laureates in December 2002, contains the following statement:
"The only hope for the future lies in cooperative international action, legitimized by democracy. *To survive in the world we have transformed, we must learn to think in a new way* [my emphasis].

"***Troubling Trends:***" In 2002, the *Bulletin of the Atomic Scientists* set the clock forward because of "troubling trends and missed opportunities." First, even if the United States and Russia complete their agreed-on arms reductions over the next ten years, they will still be targeting thousands of nuclear weapons against each other. In addition, the U.S. will place warheads removed from the stockpile into storage rather than dismantling them. The Russians— and the *Bulletin*, among others—would prefer a verifiable, binding agreement to destroy weapons.

In one troubling trend noted by the *Bulletin* directors, United States weapons labs are designing new mini-nukes and tactical nukes, and the United States "refuses to recognize the overwhelming international support for the Comprehensive Test Ban Treaty or CTBT." The United States policy puts limits on other nations, not on itself.

On July 20, 2006, less than a week after the United Nations Security Council unanimously condemned North Korea for test launching several ballistic missiles, the United States launched an unarmed Minuteman III missile toward a test range in the Marshall Islands. The United States deploys 500 Minuteman missiles, each with a single nuclear warhead that can deliver either 170 kilotons or 335 kilotons, which is ten or twenty times more powerful than the atomic bomb that destroyed Hiroshima in 1945.

The *Bulletin* directors say that the decision by the Bush administration to withdraw from the Anti-Ballistic Missile (ABM) Treaty "will have serious repercussions for years to come." Most believe the ABM was scrapped in 2002 not just to put up a missile-defense system but in order for the United States to prepare to manage the planet from space.

Another troubling trend was the interest of terrorists, specifically al-Qaeda, in radioactive materials with which to make a 'dirty bomb.' The United States and Russia, which together possess ninety-five percent of the world's nuclear weapons, still possess hundreds of tons of weapon-grade plutonium and uranium, some of which seems to have gone missing. Since I keep an inventory even of items in my flea-market booth, it is inconceivable to me that governments would be so careless with doomsday weapons. Nobody knows if the rumor is true that several suitcase size bombs may be available on the black market. Fortunately, authorities have managed to thwart hundreds of attempted smuggling transactions, according to the *Bulletin*. The International Atomic Energy Agency (IAEA) recently recovered highly enriched uranium sufficient to make three bombs in non-nuclear Uzbekistan. Other countries such as Ghana, Belarus, and South Africa have nuclear materials they are not supposed to have.

Because the momentum for abolition was lost, a developing problem is proliferation to countries beyond the eight members of the "nuclear club," specifically to North Korea and perhaps Iran. It appears that North Korea performed its first nuclear weapons test on October 9, 2006, despite opposition from its neighbors South Korea, China, and Japan. The eight 'acceptably' nuclear-armed states are the U.S., Russia, China, France, Britain, Israel, India, and Pakistan. Japan could make nuclear weapons within a few months, if it desired, says Eric Margolis.) The *Bulletin* says further that George W. Bush's evident abandonment of diplomacy and international cooperation and preference for preemptive force and unilateral action are likely to complicate efforts to persuade other countries to turn back.

Nuclear Weapons Are "Uniquely Objectionable": An Indian commentator says that Indian strategic analysts, in their enthusiasm about nuclear deterrence, tactical weaponization, and command systems, are glossing over and forgetting "the peculiarly unpleasant scientific realities about nuclear weapons." It appears that Indian military experts are succumbing to the same sort of deluded thinking that characterized American military experts during the Cold War—and again lately. These Indian strategists argue that nuclear weapons are just another mode of waging war and should not be singled out for special condemnation.

The Indian writer says there are two major reasons to reject this notion of "just another weapon." The first reason is that the 'advantage' of a nuclear weapon over a conventional one is that it is more powerful. The larger a nuclear weapons is, the more attractive it is to strategists.

Thus these weapons would be most useful for destruction of very large targets, that is, cities full of civilians. These are their immediate effects:

> Small or large, all nuclear blasts create fireballs with temperatures exceeding 300,000 degrees Celsius, shock waves that blow down everything in their path for many kilometers around, hurricane winds and secondary firestorms over large areas. It is unconscionable to suggest that such weapons either have been developed as or can ever be 'selective' weapons.

The second and "overwhelming" reason to reject any notion that nuclear weapons are just another way to wage war is the release of radioactivity. Only a small part of the radioactive fuel in a bomb is converted into a nuclear explosion, while the rest scatters over the blast area as radioactive particles that impregnate the soil, water, and air. Some components of this dust are radioactive for thousands of years. What this radioactivity dust does not kill, it will damage genetically for many years to come. As the Indian commentator notes, "Nuclear weapons will leave effects transcending generations."

In late November, 2006, the U.S. Senate voted to approve a Bush administration agreement creating a nuclear partnership between the United States and India. However, critics said that U.S. help for India's civilian reactors meant that India could divert more resources to build nuclear weapons, going from seven warheads a year to about 50. India's nuclear weapons plants are not subject to international inspections. Critics fear an arms race in Asia if Pakistan and China try to keep up with India. In fact, Pakistan is building a powerful new plutonium reactor that will enable it to make 40 to 50 nuclear weapons a year.

The three countries of China, India, and Pakistan together contain over a third of the human race, and all are now nuclear powers. Do not fantasize that nuclear war in Asia would happen "over there" and not affect every life on the globe.

Nuclear Crises: The conflicts in 1999 and in 2001-2002 between India and Pakistan were the closest that any two nations have come to a nuclear war since the Cuban Missile Crisis in 1962.) Accidental war is also a possibility. In 1995, Russia misinterpreted the launch of a Norwegian scientific rocket thinking it was the beginning of a U.S. nuclear attack, and President Boris Yeltsin started the first stage of preparation for a retaliatory strike before the mistake was discovered.

Three possible flashpoints for a nuclear war are the Middle East, where Israel may have as many as 400 nuclear weapons and is rumored to have submarines adapted to carry nuclear warheads; a conflict that spins out of control between the United States and the People's Republic of China over Taiwan; and escalating conflict between India and Pakistan, especially over Kashmir.

A fourth possibility is an accidental war, which could be triggered by a current Pentagon project to modify a nuclear missile for use as a conventional weapon. The intended target might be North Korea or Iran, but according to physicist Ted Postol at M.I.T., "Any launch of a long-range non-nuclear armed sea or land ballistic missile will cause an automated alert of the Russian early warning system." Pavel Podvig, another physicist and weapons specialist at Stanford says that to launch a conventional missile from a submarine that usually carries nuclear ICBMs "expands the possibility for a misunderstanding so widely that it is hard to contemplate."

There are supposedly two types of nuclear war. First is a limited nuclear exchange using low-yield, tactical nuclear weapons aimed primarily at military targets. The second is a full-scale

nuclear war, with weapons aimed at an entire country. Many doubt whether any limited war is possible without escalating into an all-out war.

A major nuclear exchange would kill millions of civilians within minutes or hours while other millions would die more slowly and horribly from radiation sickness. That is only the beginning. The world's current nuclear arsenal has roughly thirteen times the explosive force of the largest volcanic eruption ever recorded in history, Tambora (Indonesia) in 1815. The Tambora eruption produced the "year without a summer" and famines worldwide because of crop failures. Helen Caldicott says, "Consider that 1,000 nuclear weapons exploding over 100 cities could induce nuclear winter and the possible end of most life on earth."

Cope first, then Act. During the Cuban Missile Crisis I was living in Florida, and for several tense weeks instead of "good-by" people said "I'll see you on Cloud Nine." That is the irony or gallows humor that people often adopt as a defense during stressful times. Another example of coping is an award-winning card game called "Nuclear War" that simulates an end-of-the-world scenario. It includes population cards symbolizing millions of people whom each player must protect, or lose the game. Players get other cards such as Secrets, Propaganda, Missiles, and Warheads. After acquiring the cards to fit a warhead to a missile, the player may attack. The object of the game is to be the only player still in play after retaliatory attacks. Quite often, retaliatory attacks remove all players so no one wins. You could call "Nuclear War" an educational game.

It may be that we must defend our psyches from shock and despair while we confront the fact that many of the world's governments are like children playing sandlot baseball with live hand grenades. After defending our psyches, we need to defend our individual selves, our kin, and our species. Even if political leaders and mass media will not inform us, we must inform ourselves and listen to the voices that have been trying to stop the nuclear madness. There are many, including military and retired military, businessmen, former civilian leaders, and the atomic scientists themselves. And then we can act.

Other WMD: Chemical Warfare. Not content with these doomsday weapons, we clever humans have also invented chemical and biological weapons for our mutual destruction. However, while chemical weapons are certainly nasty, they are not truly weapons of mass destruction in quite the sense that nuclear weapons are. Chemical weapons are often used by less prosperous nations that do not have the technological or economic ability to develop nuclear weapons. Several U.S. allies suspected of researching or holding stocks of chemical weapons are Israel, Egypt, Taiwan, India, Pakistan, and China, along with non-allies Libya and Sudan. The United States and Russia are supposed to be destroying their own stockpiles.

Chemical warfare is not a new idea. Chinese writings from about 1000 BC contain hundreds of recipes for making poisonous or irritating smokes. One use was pumping toxic fumes into tunnels being dug by a besieging army. In 1672 several types of explosive and incendiary devices were used during a siege of the German city of Groningen. Following that war, the French and Germans signed the Strasbourg Agreement with an article banning the use of "perfidious and odious" toxic devices. Other international declarations to prohibit use of poisonous weapons followed in 1874 and 1900.

Despite all these agreements, a number of chemical agents such as chlorine gas, phosgene, and mustard gas were employed in World War I, officially causing about 85,000 fatalities and something over a million injuries. Most people remained shocked and revolted by the poison gas

warfare long after the war, yet some European nations continued to use chemical agents along with bombing to subdue colonial populations or domestic revolts. Winston Churchill said in 1919: "I am strongly in favor of using poisoned gas against the uncivilized tribes." Historians disagree about whether the British followed Churchill's advice and actually used poison gas in Mesopotamia (Iraq) along with the indiscriminate bombing of civilians that was apparently more acceptable.

Some of the many instances of chemical warfare or democide since World War I include these: During the Rif War in Morocco in 1921-1927, French and Spanish troops dropped mustard gas bombs trying to put down the Berber rebellion against Spanish rule. In 1921, the USSR used chemical weapons to repress a large peasant uprising around Tambov. Fascist Italy used mustard gas during its invasion of Ethiopia in 1935, even though it had signed the Geneva Protocol banning such use seven years earlier.

Japan used chemical weapons during its invasion of China in 1936. During World War II, neither side made overt use of chemical weapons against each other for fear of retaliation. German intelligence believed incorrectly that the Allies had also discovered the nerve agents tabun and sarin which the Germans accidentally discovered in the 1930s. In its democide of Jews and others, the Nazis used a poison gas, Zyklon-B, to exterminate masses of civilians in concentration camps.

Another problem of chemical warfare is what to do with leftover weapons. From World War I until the 1970s, a regular practice was to dispose of obsolete munitions by dumping them in the sea. After World War II, the United States dropped about 32,000 tons of captured German chemical weapons into the sea, while Britain dumped approximately 175,000 tons, most of it into the Irish Sea and the North Sea. An estimated 100,000 tons of chemical weapons lie in the Baltic Sea, and 20,000 bombs lay on the bed of the Adriatic Sea off the eastern coast of Italy even before new additions from the recent conflict in the Balkans.

Other dumping areas exist around Japan and the United States. For instance, the AP reported that the Army Corp of Engineers recently removed World War I military munitions from two Jersey Shore beaches in time for Memorial Day crowds. In 1987 hundreds of dolphins washed ashore on New Jersey and Virginia shores with burns similar to mustard gas exposure. A blogger says that "all kinds of stuff was dumped there and everyone knew it. The place was called the acid waters 65 miles off Long Island's coast." Besides endangering the lives of fishermen, the leaking chemicals are poisoning sea life.

During the Cold War both the Soviet and Western governments invested a lot of resources into developing chemical and biological weapons. Between 1951 and 1969, the Dugway Proving Ground in Utah was the site of testing both kinds of agents. A chemical weapons accident in 1969 killed approximately 6,400 sheep on neighboring farms, and in the following uproar President Nixon declared a U.S. moratorium on production of chemical weapons and possession of biological weapons. Two years later, the United States stopped using the herbicide Agent Orange in Indochina.

During the war between Iraq and Iran from 1980 to 1988, Iraq began the use of mustard gas and sabun, which eventually accounted for five percent of Iranian casualties. The Iranians then also used poison gas. Saddam Hussein was blamed for a deliberate poison gas attack on Kurds in Halabja in 1988.

In 1987 the U.S. Senate was tied during three votes concerning whether to restart the chemical weapons program. Vice President George H.W. Bush broke all three ties in order to resume production.

International agreements to ban such weapons continued. In 1929 the Geneva Protocol prohibited both poison gas and bacteriological methods. The United States Senate finally ratified the Protocol in 1975, and by 2004, one hundred thirty two nations had signed it. President George H.W. Bush in 1991 then unilaterally committed the United States to the destruction of all chemical weapons, and in 1997 the Chemical Weapons Convention outlawed their production, stockpiling, and use. However, in implementing this treaty the Senate added a provision that "The President may deny a request to inspect any facility" on national security grounds.

In late 2005, the United States admitted that in its offensive on Fallujah a year previous, it had used white phosphorus as a weapon, not just for illumination as previously claimed. Spokesman Lt. Col Barry Venable denied that white phosphorus was a banned chemical weapon, insisting that it was an incendiary weapon, which is not banned. Venable said that it was used only against enemy combatants, not civilians.

The United States still holds a number of stores of chemical weapons that it is obligated to destroy, but it is very much behind on the time-table. According to the 1997 treaty, the U.S. was to destroy its stockpile of 31,280 tons of mustard gas, nerve agents, and other toxic substances by 2007, but in late 2003 the Pentagon said it could not meet the 2007 deadline. U.S. officials said that at least they were ahead of Russia, which had only destroyed one percent of its stockpile.

Other WMD: Biological Warfare: Biological weapons are highly feared. However, according to Eric Margolis, they are not, as yet, weapons of mass destruction because "they are difficult to produce, store, transport and deliver. Germ weapons have never been successfully used in warfare." This means of killing also has a long history, dating back at least to 1346, in the Crimea, where Tatars catapulted corpses infected with plague into Italian trading towns.

The international community passed a ban in 1972, the Biological Weapons Convention. However, in 1985 the United States resumed open-air testing of biological agents, and according to a later Senate report, U.S. firms supplied Iraq with biological agents from 1985 to 1989. The U.S. Congress passed a law in 1989—the Biological Weapons Act—that would outlaw the possession, trade, sale or manufacture of any biological substance for use as a weapon. After the Oklahoma City bombing, a new law allowed the arrest of anyone who even threatens to develop or use biological weapons. Yet, says science and medical writer Laurie Garrett, recipes to produce botulinum and anthrax are posted on the Web, and some militia groups train to use biological weapons.

Germ warfare may become more dangerous in the future for several reasons. One is civilian lack of preparation. Garrett says that if someone released smallpox virus today, the majority of the world's people would be defenseless because vaccination is no longer customary and vaccines are not widely available. If the disease had been bioengineered to be vaccine-resistant, immunization would be useless anyway. Given the smallpox kill rate of 30 percent, up to two billion people could die in a new epidemic. At one point it was believed that there were only two small stores of smallpox left in the world, in Atlanta and Moscow, and there was a controversy about whether to destroy both stocks. However, says Garrett, experts now believe that there may be other sources.

In the case of epidemics from rare microbes such as those causing anthrax, Q fever, Ebola, or plague, Garrett says that local facilities might be unable to diagnose them and would need the diagnostic labs at the Center for Disease Control (CDC)—but the Special Pathogens Laboratory at CDC has only a dozen specialized scientists to analyze such problems and Garrett suggests they would be overwhelmed.

Although biological weapons may not be weapons of mass destruction today, with constant advances in genetic engineering they may become WMD in the near future. Research continues with the usual assumption that "we have to do it before somebody else does." For instance, a scientist funded by the U.S. government genetically engineered a deadly form of mousepox, relative of the smallpox virus. The new virus kills all mice even if they have been vaccinated and given antiviral drugs. Then the scientist (Mark Buller at the University of St. Louis) constructed a similarly lethal form of cowpox virus, although cowpox can infect humans, which contained a mouse gene so it could be tested on mice. Buller justifies his work as necessary to stay ahead of bioterrorists, but some researchers think that cowpox research is risky and unnecessary because of other types of research in Australia and elsewhere.

Conventional Warfare

You can't say civilization don't advance, however, for in every war they kill you in a new way.

Will Rogers, 1879-1935

The public spotlight has been on weapons of mass destruction, especially 'nukes,' yet so-called conventional weapons also do a great deal of damage to the species and the environment that sustains us. Jonathan Schell reminds us that even with World War II weaponry, giant air raids on cities such as Lubeck, Cologne, and Hamburg were able to produce a firestorm and kill as many as 45,000 people in a single night of bombing. During the Persian Gulf War, so many conventional bombs were dropped on Iraq and Kuwait that their destructive power equaled five Hiroshimas.

Whatever the means of warfare, the results of war are similar in kind if not degree. Individuals die in various horrible ways, disease spreads, and whole societies disintegrate as they live in chaos. People who have survived a war are more likely to turn to authoritarian leaders and to nurse grudges which, a generation or two later, turn into another war. The infrastructure and economy are ruined, pollution increases, ecosystems die, and yet another part of the planet is degraded.

Some military experts say that high-precision conventional weaponry has rendered nuclear weapons unnecessary. In addition to these so-called 'smart weapons,' the United States and its allies in the gulf war used new kinds of munitions "designed to duplicate the destructive effects of tactical nuclear weapons." These are fuel-air explosives, penetration bombs, and wide-area cluster bombs.

Fuel-air explosives create a massive fireball. The "Daisy Cutter" is effective in obliterating everything within a 600-meter radius including the grass (thus its nick-name). Daisy Cutters are the size of a small car and contain 15,000 pounds of fuel-air explosives. The explosion, which creates a mushroom-shaped cloud, incinerates anyone close to the center and sucks the air from the lungs of those at the edges. The specially-adapted airplane that drops a Daisy Cutter has to fly above 6,000 feet to avoid being destroyed by the blast. Yet an even larger and more potent fuel-air bomb, the MOAB, is on the way.

Cluster bombs (CBUs) contain dozens or hundreds of canisters (bomblets) filled with anti-personnel or anti-armor steel fragments that can cover an area the size of two football fields. This volley of razor-sharp fragments cuts civilians or soldiers to pieces. Human Rights Watch has

called for a global moratorium on the use of cluster bombs because they cause "unacceptable" levels of civilian casualties during and after conflicts. About seven percent of the bomblets fail to explode on contact. These duds become equivalent to antipersonnel landmines, but they are not covered by the landmine treaty.

Southern Lebanon is now littered with unexploded bomblets from the 2006 war with Israel. As many as two in five failed to explode, leaving up to one million duds. People in southern Lebanon are afraid to enter fields and orchards to harvest their crops. The Israeli military fired 90 percent of the CBUs, mostly American-made, during the last three days of the conflict, although it was clear that a cease-fire was approaching.

Landmines: The International Campaign to Ban Landmines (ICBL), a network of over a thousand organizations in ninety countries, worked for years to get a global ban on the production, export, and use of landmines, culminating in the 1997 Mine Ban Treaty. At least 150 nations have signed this treaty. Jody Williams, a grassroots activist from the United States, won the Nobel Peace Prize that year for her work. Princess Diana was also an active supporter of this cause, along with a number of other celebrities. The treaty went into effect on March 1, 1999, entering into force with record speed, after forty nations ratified it.

At the time of the treaty, an estimated 26,000 civilians, one-third of them children, were killed or maimed from landmine explosions every year. Civilians are the vast majority of victims, as only thirteen percent of casualties occur in combat. In 1997, an estimated 100 million active landmines were already planted around the world in sixty-two countries as the legacy of wars and civil wars, and more were on the way. A Red Cross surgeon said, "Even if no more land mines are planted, the ones in the ground now would keep us busy for the next thirty years."

For every human killed or injured by landmines, ten to twenty times as many animals suffer casualties. Wild animals, including endangered species such as mountain gorillas, live in war-torn areas that have been mined. Domestic animals also suffer. The loss of a poor farmer's herds or pack animals threatens his livelihood. If land lies fallow because of landmines this further reduces a subsistence farmer's ability to feed his family.

The Mine Ban Treaty was not signed by the largest producers and exporters of anti-personnel land mines such as China, Iraq, Iran, Burma, and North Korea. China in particular was manufacturing millions of plastic mines that metal detectors cannot find and remove at the end of a conflict. In the Mideast, Israel and most Arab countries refused to sign. So did Russia, India, and the United States. While the U.S. in 1992 had imposed a unilateral moratorium on transferring land mines to other countries, the Pentagon does not want to give up the technology entirely, citing particularly the demilitarized zone between North and South Korea. Also, the U.S. now produces mines that self-destruct or deactivate after a specified time, and announced in 2004 that it would only use mines with these timing devices. However, such mines cost more than the Chinese plastic mines, so they are less likely to be produced for export by other countries.

It was a great disappointment to those who worked so hard to create the ban that the United States decided not to join the Mine Ban Treaty under either President Bill Clinton or George W. Bush. Activists such as Jody Miller and Stephen Goose of Human Rights Watch indicated that this decision undermined the treaty and provided cover for the mine-producing nations to continue. The United States, they said, has always been "part of the problem and not the solution."

Small Arms: Despite fears of WMD, the lowest-tech weapons are currently killing the most people. At least five hundred thousand people die every year in regional wars conducted with basic infantry weapons such as assault rifles, machine guns, grenades, and mortars. Small arms were the weapons of choice in 46 of the 49 conflicts fought during the 1990s, in which four million people died. Most of these wars were in poor countries and ninety percent of deaths were civilians. Many of the soldiers are children. Weapons have so permeated daily life that in Somalia some children are named AK.

As of 1987, an estimated two-thirds to three-quarters of the wars then being fought were waged by states against nations, that is, distinct cultures defending their autonomy and land. Or as an article in *Cultural Survival Quarterly* put it, they were fought by Third World states against Fourth World (politically disenfranchised) nations. We in the more developed countries could sponsor ways for these groups to negotiate their conflicts. Instead, the more developed countries have a thriving business supplying the means for the poorest to kill each other.

Military historian John Keegan writes that while nuclear weapons have produced no war casualties since August, 1945, an estimated 23 to 50 million people have died in wars since then. Keegan notes that most of them were killed by

> Cheap, mass-produced weapons and small-caliber ammunition, costing little more than the transistor radios and dry-cell batteries which have flooded the world in the same period. Because cheap weapons have disrupted life very little in the advanced world…the populations of the rich states have been slow to recognize the horror that this pollution has brought in its train.

Of the world's 639 million small arms and light weapons, the UN estimates that about half are illegal. In some African wars, paramilitaries have purchased black-market weapons with stolen diamonds. In other cases, drugs and weapons are smuggled along the same routes. The value of illegal trade in these weapons is about $1 billion a year. Much of the legal trade across borders also ends up in wars. Western governments, including the United States, give away excess or outmoded military equipment such as rifles, pistols, machine guns, and grenade launchers to friends and allies, rather than bear the expense of dismantling or storing them.

The secretary general of Amnesty International, Irene Khan, said that as a result of the "so-called war on terror" both the United States and Britain "have relaxed controls on sales of arms to allies known to have appalling human rights records" such as Pakistan, Uzbekistan, Saudi Arabia, Jamaica, and Indonesia.

A United Nations conference in July 2001 and again in 2006 tried to negotiate an Arms Trade Treaty to stop the illegal trafficking in light weapons. But a few key states such as Egypt, Iran, and especially the United States have resisted important provisions. The United States, which is the world's largest supplier of small arms and light weapons, maintains that if people would just stop fighting, the problem would go away. Let the UN work on reducing the demand side, US. Officials say, since the manufacturers of guns, ammunition, and semi-automatic weapons have the right to make a product. But Frida Berrigan, an arms trade analyst at World Policy Institute says

> So far, U.S. delegates have not dealt with the fact that gun manufacturers flood the market with too many weapons....The U.S.'s anti-Arms Trade Treaty stance is strengthened by the active participation of the gun industry and the National Rifle Association in the UN meetings...as if these special interest groups were just any other Non-Governmental Organization, or NGO. [They] set up camp at the UN to protect the right of Americans to "bear arms" [but] what their

overheated rhetoric ignores is that there is nothing in the UN proposals about taking legally procured weapons away from licensed owners.

One might add that provisions of the U.S. Constitution do not apply to other countries in the world. Also; the right to bear arms here does not guarantee the right to manufacture arms here and ship them elsewhere.

Wars in Space and Other Horrors: The only UN members that did not vote for a 1999 ban on "an arms race in space" were the United States and Israel. The U.S. Air Force Space Command Strategic Master Plan (SMP) in 2003 clearly states this nation's intentions to dominate space and the world. The SMP document warns that "some U.S. policies and international treaties may need to be reviewed and modified." The Outer Space Treaty of 1967 would be the major such treaty that SMP would, basically, abandon. Most ominously, the United States plans to "negate" the plans of foreign powers, even our European allies, to develop their own space capabilities. The SMP says its vision for the next twenty-five years is summed up as follows: "space war-fighting forces providing continuous deterrence and prompt global engagement for America…through the control and exploitation of space."

SMP strategies and objectives include the creation of an instantaneous global strike force, total monitoring of the Earth, a nuclear arsenal in space, and the introduction of exotic new weapons. One of the new weapons in development is the Ground Moving Target Indicator (GMTI) which is a space-based tracking device which could pinpoint and follow the smallest targets on Earth (one human being?). Another new weapon is the CAV or Common Aero Vehicle, a spaceplane stocked with so-called smart bombs. The military hopes to have one version ready by 2014.

Beginning in 2004, the National Reconnaissance Office (NRO), largest intelligence agency in the U.S. by budget and in charge of all U.S. spy satellites, was slated to be in control of the new Offensive Counter-Space program—the program to deny other nations use of near-Earth space.   Naturally, other countries are unhappy about this strategy. The European Union complained that the NRO and NSA (National Security Agency) were using global electronic snooping programs such as Echelon on its allies. The European Space Agency charged that the U.S. Defense Department tried to force it to change the design of Europe's Galileo navigational-satellite system. A Canadian senior advisor for nonproliferation, Robert Lawson, said: "Negation implies treating allies poorly. It implies treaty busting."

The Russians, who were the first country into space in the 1950s, have been most outspoken about the U.S. plan. Russia's Defense Minister Sergei Ivanov, in China for an official visit in 2005, said that while both Americans and Russians are using space for military purposes, they are so far deploying only communications, targeting, intelligence, and other defense-related spacecraft. "But the deployment of weapons in space will have unpredictable consequences."

The Cold War is over. Today Russia has a space industry that orbits commercial spacecraft from thirty or forty other countries, and has reaffirmed that it would not be the first to orbit weapons of any kind. The Russian ambassador to Canada, Georgiy Mamedov, formerly Moscow's chief arms-control negotiator, bluntly told Canadians not to cooperate with the United States any further on missile defense programs if they were under the illusion that this would not lead to weapons in space. He said the U.S. plan to dominate space could force Russia and China to enter a new arms race to maintain their own defenses.

In addition to militarizing space, there exist a number of new technologies and futuristic research projects as for instance by DARPA (Defense Advanced Research Projects Agency) to

bioengineer soldiers so that they can go without sleep for days on end or to implant chips into their brains. Another new Pentagon weapon is an invisible beam so painful that no one has been able to withstand it for more than three seconds. It is called the "Active Denial System," and prevents an opponent from advancing. Among possible uses for this weapon, an Air Force spokesman listed peacekeeping, humanitarian operations, and crowd control. Torture is another possibility that comes to mind.

Then of course we have robots, which saw their first significant military action in Afghanistan (a forty-two pound, remote-controlled PackBot) and nanotechnology, the friendly technology mentioned in chapter one. Aerospace experts in early 2011 announced a new and improved robotic plane (drone) that "heralds a new era in modern warfare" although the first test was of a surveillance plane. This "game-changing technology" makes warfare even more of a game—for the side deploying the drones, not the unseen, flesh-and-blood victims of its bombs.

What if this same ingenuity and technical knowledge were applied to desalinizing water, reforestation, improving renewable energy devices, discovering and distributing better contraceptives, rapidly deploying water, food, and shelter to victims of natural disasters, and finding ways to get rid of all the junk from past wars? Would we even have anything left to fight about?

The Weapons Business: After World War I, the disillusioned survivors of that futilitarian war (the "Lost Generation") tended to blame wars on those they called 'munitions-makers' who are the military contractors of today (and sometimes the same companies). After World War II, it was the departing president himself, a famous military man, who warned the American public about "the industrial-military complex." Yet today the arms business is bigger than ever, and its relationship with the military more incestuous, as high ranking officers retire and go to work for military contractors, a custom sometimes described as a "revolving door."

The top U.S. weapons maker today is Lockheed Martin, created from a merger of scores of military companies in 1995. Half of its annual $28 billion sales go to the Defense Department. The D.O.D. under Clinton encouraged and even subsidized military mergers in order to cut overhead by reducing underutilized factories. However, military contractors resisted closing production lines for older weapons to make way for newer ones. Research by Harvey Sapolsky of MIT shows that since the cold war, the Pentagon has not shut down a single major weapons production line.

One unintended consequence of the nineties mergers is that these megafirms now comprise a more politically powerful corporate military sector. Lockheed alone contributed $2.3 million to political campaigns 1995-1996. In addition to campaign contributions, the six largest defense contractors spent "an astonishing $51 million" on lobbying from 1996 to 1998. This paid off, as Congress added billions of dollars to the Pentagon budget for weapons that the Defense Department had never requested, as military pork for their own districts.

Besides their own government, arms manufacturers sell to the export market. During the Cold War, the United States and the USSR competed as the top exporters of weapons, but in the last decade or so, no other nation approaches the United States as an arms exporter. The U.S. holds at least forty percent market share. Britain, Russia, and France follow at a distance. The top buyer in 2002 was Saudi Arabia, followed by Egypt, Kuwait, China, and Taiwan.

Do you think countries armed to the teeth are more or less likely to engage in wars?

The most sinister aspect of the political influence of arms manufacturers is that they can shape United States foreign and military policies to meet their own needs such as expanding

foreign markets. For instance, they can (and did) manage to lift arms control agreements that banned the sale of advanced combat aircraft to Latin America. They pushed for expansion of NATO, a cold war alliance without clear purpose today, at great expense to the American taxpayer.

Justifications for exports are that "we have to keep selling weapons overseas in order to keep American assembly lines running, to preserve our industrial base and to lower the unit cost of new weapons systems." A giant cash cow such as the National Missile Defense program (NMD) will continue whether or not it works, regardless of how much it costs, and despite the consequences of establishing permanent bases for it in the Middle East, stimulating world nuclear proliferation or creating tensions with Russia and China.

Just conceivably, military contractors have enough power to encourage the United States to enter wars and to entertain visions of ruling the world by its superior military technology and sheer numbers of weapons. Endless war would certainly be good for business, at least in the short run.

War Psychology: Humans were designed without sharp claws or fangs, thus a spear or rifle becomes an "artificial organ" to protect oneself or exert one's will—as well as to hunt game. A number of modern people, perhaps especially American men, demonstrate an attachment to various weapons of war and their delivery systems, reading about them avidly, even nick-naming an atomic bomb "Little Boy" or calling an almost-WMD such as the MOAB, "The Mother of All Bombs." Still more do they show attachment to portable small arms, to the point that some Americans apparently view unrestricted gun ownership as part of their religion.

These attachments are encouraged by those who manufacture weapons and by the military. For decades, boys and young men have immersed themselves in video games, toys, and sci-fi scenarios of high-tech war. (Quality science fiction, on the other hand, tends to portray futuristic wars as more gruesome than glamorous.) In early 2002 the magazine *GameDeveloper* noted the collaboration of game developers and the military ever since the Pentagon became interested in Atari's tank simulation arcade game, "Battlezone," in 1980:

> Collaboration efforts have stepped up in recent years. [One example is] the Institute for Creative Technologies, founded in 1999 as a joint effort between the Army (who provided $45 million in funding), game developers, Hollywood talent, and the University of Southern California. [The latter] recently announced development of two projects that will have both military and commercial applications.

In many social species including primates, a role evolved for males to protect the group from predators. It is possible that in order to fulfill their ancient role, males may invent predators when they are no longer present. Without attempting to trace all the steps, we can see how it happens over and over: people justify incinerating other human beings or cutting them to pieces by calling them "barbarians," "heretics," "the uncivilized tribes," "inferior races," "Communists," "the Republican Guard," "insurgents," "terrorists," or simply "the enemy." Inevitably, many people who are not combatants are also incinerated or cut to pieces, all very regrettable of course, but not considered important to the business of the day, which is…exactly what? How do people who are supposedly rational and, many of them, supposedly followers of Jesus Christ the Prince of Peace, continue to find rational and moral reasons for this slaughter, after thousands of wars? Even a worm learns to avoid a shock after a hundred or so trials in the maze.

Peak Oil and Geopolitics

One fact is indisputable: when the Middle East peaks between 2006 and 2020 the world will have passed peak oil, and oil prices will commence to climb irreversibly until all recoverable oil reserves are exhausted within 50 years.
<div align="center">Andrew McNamara, Australian legislator, 2005</div>

The American public tends to get concerned when the price of gasoline goes up. Our nation developed the current model of suburban living in the 1950s, when oil was abundant and cheap. People who live at some distance from urban centers and from their jobs are quite dependent on their cars. This dependence is greater because the mass transit infrastructure has largely disappeared. When the price of gasoline rises, many of us tend to blame manipulations by OPEC or by oil companies in general. While such manipulations certainly occur, there are several deeper, longer range problems about energy supply that the media and the public are not addressing.

One concern is the fragility of energy systems on which the world economy depends. Physicist and futurist Amory Lovins noted that Saudi Arabia, with one-fourth of world oil reserves, is the only producer with significant capacity to increase output and therefore to control world prices. Yet he says two-thirds of Saudi oil flows through only one refinery and two terminals that are "in the cross-hairs of terrorists. [Destruction of these facilities] would presumably crash both the House of Saud and the Western economy."

A more inevitable danger arises from world Peak Oil. This term describes the situation when the world passes the halfway point of world oil (and gas) reserves, when half the oil—the most easily recovered half—has been extracted. After this peak, supplies decline irreversibly, no longer able to meet demand, and the price keeps rising. This peak is imminent at just the time when several large countries, notably China and India, are modernizing and industrializing, a process that requires oil and continues to depend on it.

When the peak occurs (it may already have occurred) industrialized countries will not be able to continue enjoying the lifestyle to which they have become addicted. The United States, for example, with about 5 percent of the world's population and 2 percent of the world's proven oil reserves, burns 25 percent of the world's transportation fuels. Americans also have large, energy-consuming houses. While industrial countries must power down, poorer countries will never get the opportunity to industrialize.

The industrialized societies have been slow in developing alternatives to oil and natural gas or making needed changes in life-ways. We *detrivores* are so dependent on oil and gas that some people will die in the belated transition to a different kind of economy. Countries with developing economies are, unfortunately, following the same path of energy dependence. Energy investment banker Matthew Simmons says, "The problem is that the world has no Plan B."

Industry and governments—but not yet the public at large—are quite aware of the possibility that oil supplies will soon be declining and increasingly higher in price from now on. Nations and groups of nations, operating without morality as nation-states have always done, are trying to grab as much of this dwindling resource for themselves as quickly as possible. Their geopolitical games are already leading to conflicts that can turn into military conflicts. Picture this: nations and regions that react to diminishing oil supplies much like Bloomingdale shoppers fighting for the last Cabbage Patch doll. Unlike shoppers, nations command weapons of mass destruction. Their competition threatens not only the world economy but the survival of humanity.

Understand, we are not running out of oil—we are about to run out of *cheap* oil. A lot of the oil still in the ground is locked in difficult underground formations, hard to extract. Today, worldwide, the average rate of recovery for oil drillers is about 35 to 40 percent. Without new technology, it is likely to get even lower than that.

How do we know this is happening? What is the evidence for Peak Oil? The general concept was developed by geophysicist M. King Hubbert, who predicted in 1956 that oil production in the United States (excluding Alaska) would peak in 1970. His prediction was fulfilled. Since then, a number of other oil-producing countries have peaked. For example, officials at Mexico's state-owned PEMEX announced that Mexico's largest oil field entered permanent decline in 2005. In 2005, Venezuela sold its San Cristobal oil field to India—an oil field already in decline. In fact, of the 48 countries that produce 98 percent of world oil, 31 have already peaked.

Applying Hubbert's methods, several prominent geologists forecast that world oil extraction will peak in this decade. Dr. Colin Campbell and Jean Laherrere predicted in 1998 that the decline would begin before 2010. According to Al Jazeera, Saudi Arabia may have already peaked in production due to over-producing its fields by water and gas injections that destroy a reservoir's geologic structure. Al Jazeera says "It is an undisputed certainty that if Saudi Arabia has peaked, the world has peaked."

In addition, oil *discoveries* peaked in 1964 and the rate of new discoveries has been declining since that time. The world is supplied by the major fields which were discovered decades ago. Natural gas wells are also depleting, both in the United States and in Canada, from which the U.S. imports much of its gas supply. "North America will soon be unable to supply its own gas needs," says John Attarian. The world's largest remaining natural gas fields are in Russia and Iran.

Geostrategy

The American military is increasingly being converted into a global oil-protection service.
Marshall Auerback

Few modern ideologies are as whimsically all-encompassing, as romantically obscure, as intellectually sloppy, and as likely to start a third world war as the theory of "geopolitics."
Charles Clover, *Dreams of the Eurasian Heartland*

While political spinners give the public various reasons for the nation's foreign policy, there are usually other reasons for what is done. Often the public never learns *what* is done, much less why. The policy may "square neither with the cherished myths of democracy nor with the self-image citizens have of themselves as moral beings," says historian Richard Barnet. Governments tend to find public opinion on foreign policy to be a nuisance. This is true of any administration, Republican or Democrat, Labor or Tory or Social Democrat. Dean Acheson, perhaps the main author of postwar (WWII) U.S. foreign policy, said it plainly: "the limitation imposed by democratic political processes makes it difficult to conduct our foreign affairs in the national interest."

But the stakes are rather high these days, namely survival, so it will not do to simply trust the experts who decide what our country's 'interests' are. What if these are the interests of certain corporations or of an elite class rather than of the mass of the citizenry? What if our country's interests are not in the interest of the species? We all need to know something about geopolitics and the geostrategy that appears to drive foreign policy.

Geopolitics is the supposedly neutral study of the impact of geography on politics, while geostrategy combines this with strategic considerations. Geostrategy can make no pretense of being neutral since it refers to a nation's foreign policy directed toward the control of foreign geographic resources. A notable U.S. geostrategist, Zbigniew Brzezinski, describes the process in historical terms in *The Grand Chessboard*:

:
   To put it in a terminology that hearkens back to the more brutal age of ancient empires, the three grand imperatives of imperial geostrategy are to prevent collusion and maintain security dependence among the vassals, to keep tributaries pliant and protected, and to keep the barbarians from coming together.

Setting up puppet governments, putting other countries in your debt, divide and conquer: such strategies were ancient even before Machiavelli and are obviously still in play. Two main areas of international competition and manipulation today are petroleum politics—especially involving the Mideast—and the geostrategic region of Central Asia.

Petroleum politics grows in importance as more countries vie for this increasingly scarce resource. For the United States, this involves strategic relationships with countries which are major oil producers, such as Saudi Arabia, Iran, Iraq, Nigeria, and Venezuela. Saudi Arabia is our 'friend.' Iran exports oil to China and Russia, and is not our 'friend.'

Nigeria despite its oil wealth is one of the poorest countries in the world. Even after recent debt cancellations, Nigeria is still in debt to several lending nations, and the International Monetary Fund (IMF) has the right to monitor its fiscal policies. The IMF is dominated by the United States.

Iraq, of course, has been in a chaotic condition. Although policies advantageous to Western oil producers were written into Iraq's constitution, sabotage and the general security situation made it very difficult to extract Iraq's oil. One of the 'benchmarks' that the United States wanted the Iraq government to meet has to do with opening Iraq's oil resources to Western producers on extraordinarily favorable terms to the producers.

Venezuela's oil industry has been nationalized for thirty years, but President Hugo Chavez has tried to reverse his predecessor's policies of privatizing state holdings, in other words, to re-nationalize the industry. Chavez blamed the CIA for a failed coup against him in 2002. In the past, Western governments have sometimes reacted to oil nationalization by coups and covert actions. For example, in 1953 the CIA and its British counterpart, M16, overthrew Iran's Premier Mohammed Mossadegh to prevent him from nationalizing the Anglo-Iranian oil company, later British Petroleum (BP).

A second area of strategic competition is *Central Asia*, between the 30th and 40th parallels, including parts or most of a number of countries such as Tibet, Kashmir, Pakistan, Iran, Afghanistan, Uzbekistan, Turkmenistan, Tajikistan, and the Caucasus. This area has often been a battleground for outside powers. For most of the nineteenth century, British India and Tsarist Russia fought for domination of this area that lay between them. In Britain this conflict was called "The Great Game," a game which ended in 1907 with a treaty that divided Afghanistan between Britain and Russia.

An early British geostrategist, Halford J. Mackinder, in 1904 called this same region the "Heartland." Mostly steppe land, interspersed with deserts and mountains, it had frequently allowed conquering warriors on horseback, such as the Huns and Mongols, to sweep from the

east to the west. Mackinder also described a large portion of this landlocked region, bounded by the Caucasus to the west and another mountain range on the east between Pakistan and Mongolia, as "The Geographical Pivot of History" where a military force could project land power while remaining inaccessible to the sea powers.

One of the reasons this area is currently of geostrategic interest is that the collapse of the Soviet Union in 1991 created a power vacuum in Central Asia—Brzezinski called it the "Black Hole." While most of the population is Islamic, there are many ethnic groups, tribal and clan loyalties and little sense of national identity in any of the new countries created from the former U.S.S.R. A number of outsiders including Russia, Turkey, Iran, China, Pakistan, India, and the United States are projecting power into this region.

Some of the countries in Central Asia have significant oil or natural gas deposits. They may also serve as routes for oil and gas pipelines from the Mideast into Europe, Russia, or China. These routes are a matter of intense negotiation and contention. Also, because of the U.S. War on Terror, the United States has created a foothold in the region with the war in Afghanistan, Pakistan as an ally, and military bases in Kyrgyzstan. Russia and China have expressed concern about having this permanent U.S. military presence in the Heartland. In fact, an additional geostrategic reason for many U.S. actions is to 'contain' Russia or China or both.

But isn't it too late and too dangerous for all these countries to keep on playing The Great Game into the 21st century? Or do you think that we should let the 'experts' decide how to advance our multiple 'national interests'?

See you on Cloud Nine.

A World out of Whack: The foregoing list of dooms and threats still does not cover all the great difficulties that humanity faces, such as world poverty and unnecessary suffering, with growing inequities between the richer and poorer nations. Global income inequality is greater than ever before in history. At one peak on the graph, the poorest forty-two percent of the world's population receives only nine percent of the world PPP income (purchasing power parity in U.S. dollars). At the other peak is a group of nations that includes the U.S., Japan, Germany, France, and the UK. With thirteen percent of the world's population, they receive forty-five percent of world PPP income.

Another aspect of our human predicament is mindless greed. Multinational corporations have entered an era of competition to control the basics of human subsistence such as water, to patent life, to create chimeras, and to change the biological basis of the human race, all without displaying any special concern for the future that includes the children and grandchildren of their own executives and stockholders.

One example of this greed is Monsanto, world's third largest agrochemical company and second largest seed company. Since the mid-1990s, Monsanto has shifted its emphasis to genetically engineered crops linked with the herbicides and pesticides it produces. Its two strategic focuses are world staple crops and control over commercial use of plant germ and 2008plasm. Says Robert Fraley of Monsanto, "What you are seeing is not just a consolidation of seed companies; it's really a consolidation of the entire food chain."

The competition of these mammoth industries to control everything and get bigger and bigger is like Greedzilla meets WorldCorp, a battle of the monsters in a Japanese film, with all the little human beings crushed underfoot by monomaniac corporations. Profit seems to be the ultimate value in the world we have made, without much concern for survival of individuals, groups, future generations, or the entire human race.

Of immediate concern in the United States is a dysfunctional political system. This system simultaneously skirts real issues; plays to the public's lowest emotions to win elections and stay in power; tolerates corruption, cronyism, and undue influence from corporations; builds up huge amounts of debt; repeatedly displays incompetence especially in the face of emergencies; tends to reelect incumbents; relies on secret technology owned by private companies to count the vote; and, by constantly increasing executive power while ignoring or dismantling constitutional safeguards, takes the country ever closer to outright fascism. Dangerous structural problems remain in the system. We simply cannot afford business as usual.

There are enough problems to go around, but the most crucial for humanity as a whole appear to be the five discussed earlier: populations outgrowing carrying capacity, technologies with destructive side effects, failing ecosystems, wars that are ever more disastrous, and dwindling resources that are leading to wars. These five seem to be the most basic, species-level challenges. Any one of them is daunting in itself.

It may be that faced with the possibility of all these enormous, human-made catastrophes, humanity has panicked. UK author Martin Amis believes there has been a "moral crash" across the world since 2001, a loss of species consciousness. Humans are alienated not only from nature but from their own kind. Somehow we need to reverse the panic and the alienation.

Now we need a revolution in consciousness and lifestyle, a change as great as the one made when we began to grow food and live in towns, or when we became hunters instead of scavengers, or even the earliest one when we came down from the trees and ventured onto the savanna. Back then, we were not consciously aware of what we were doing. It just seemed like the thing to do, or perhaps it was the only thing to do. Now it is a matter of making deliberate choices. The scary part is that we have to live with our own mistakes—or die out by them—all of us together. Without a major transformation, we are likely to go the way of the dinosaurs in about one-twentieth of the time. It is time to use those big brains given us by God or Evolution.

The choices we make must involve all of us, not just a relatively few, well-educated people in rich countries. This is about our survival as a species, and we need to develop awareness of our species and by our species. For those who make a habit of willful misunderstanding, let me clarify that by urging species consciousness I do *not* mean economic globalization, internationalism, nor one-world government. Those are very different issues.

Nor do I propose a form of specieism, the idea that the human race is the only one that matters. To the contrary, it would be hardly possible to save ourselves without the others. I start with our own kin as the first step. Working for the survival of our own species would also tend to rescue the others, or as many as can be saved at this late hour.

Species consciousness is somewhat like the idea of the Brotherhood of Man (and Sisterhood of Women) or the Human Family, but with a longer view. It contains the added sense that members of our species urgently need to work together, with a great deal more heart and smarts than we are currently demonstrating, in order to rescue the entire human family and set ourselves on a different path.

Species consciousness is beyond the artificial boundaries of nation states, thus beyond their agreements and disagreements. It cannot depend solely on the UN or on large intergovernmental or non-governmental organizations largely staffed by those educated in the West and limited to that viewpoint—no matter how well-meaning. Species consciousness necessarily rises above notions of who is superior to whom, or how Westerners can help others become more like Westerners. It must also be more deeply felt than simply being a project or program; it must be a 'grassroots' change of heart.

Part II: Not Quite Sapiens

Chapter 5:   Some Ways We Think (or Don't)

Don't we all know how relatively easy it has always been to lose at least the habit, if not the faculty, of thinking? Nothing more is needed than to live in constant distraction and never leave the company of others.
Hannah Arendt, German Jewish political theorist, 1906-1975

Most people, of course, are not thinking about themselves as part of a species. Nor are they thinking of themselves as part of an ongoing history or as one culture among many cultures. Those in highly civilized nations as well as indigenous tribes tend to get absorbed in themselves and their own daily doings. We consciously or unconsciously define ourselves as The People. All the others are simply irrelevant outsiders.

In the United States, we have grown accustomed to regarding ourselves as the model for the human race—making generalizations willy-nilly based on our own citizens—who actually comprise only five percent of the world's population. Unfortunately, this book is probably no exception, because it is hard to break this ethnocentric habit, and even harder to learn enough about the other 95% that one could generalize about them with any certainty. At least the reader is warned that saying "we" does not necessarily include everyone on Earth.

Nor by criticizing certain aspects of thinking in my own country do I mean to imply that people in other countries are free from stereotypes, rushing to judgment, or the many other poor mental habits that plague human beings. Undoubtedly, the average person in some countries is even more ignorant and logically incompetent than we are—but someone else will have to provide those details. There is evidence, however, that in many other developed nations, both students and adults surpass Americans in vital parts of their knowledge base.

Americans generally lack knowledge of other nations or of history, according to numerous comparative surveys of international students and adults over the years. Most recently, according to a Roper poll conducted for *National Geographic* in late 2005, six in ten Americans ages 18 to 24 could not find Iraq on a map, and 47 percent could not locate the Indian subcontinent on a map of Asia. Forty-eight percent could not find the state of Mississippi. Almost three-quarters incorrectly identified English as the most widely spoken native language (it is Chinese), and only 14 percent see any necessity for Americans to speak a second language.

One possible reason for U.S. ignorance of geography, history, and current events is that we are so busy making a living and coping with our technological and information-rich lifestyle (rich in information about consumer products and popular culture). Shopping appears to be the most popular leisure-time activity in the United States.

We work more hours than our European counterparts do, with fewer vacations, while even high school students have part-time jobs. We meet a constant bombardment of trivial messages, advertising, and canned entertainment, in public places, at home, or commuting, thanks to television, radio, cell phones, and various electronic gadgets. Television news, which is the major source of news for most people, is ever more sensationalistic ("If it bleeds, it leads") and focused on celebrity sex scandals or local crimes. The constantly changing news cycle presumes or encourages a short attention span. Veteran newsman Bob Lancaster suggests that Americans have "group attention deficit disorder."

Meanwhile mundane, one-sided conversations dominate the public thoroughfare. You think at first somebody is talking to you, but no, it is only somebody on her cell phone, describing her recent operation. A survey of high school students found that the top third of cell phone users were those who used the devices more than 90 times a day. These, the heaviest users, communicated on average every ten minutes while awake, mostly in text messages It is not only cell phones; statistics are not available, but it would not surprise me to find that playing games is the major use of the Internet on home computers, along with emailing jokes and 'cute' pictures, and, of course, viewing pornography.

A shallow and distracting consumer culture in addition to extended work hours does not encourage deep or long-range thinking. As a result, any concern with the looming consequences of our collective actions on us, our neighbors, or the other species seems somehow peripheral to our 'real life.' What do plants and animals, underground water and oceans, doomsday weapons, or the energy we burn have to do with our jobs, our love life, our family, our investments and entertainments? We assume that any such consequences must be the province of specialized people such as environmentalists or 'peaceniks,' sages or prophets. The rest of us are too busy.

People have no time—or take no time—for reflection, during which a person views the larger picture, recalls the history of situations, looks at events in context, and asks silent questions such as "Why?" Instead, one adopts the current explanations and stories fed us by media and opinion leaders.

There are other reasons for our seeming indifference to our own fate. Because the media sensationalize so much, many citizens assume that *anything* they hear is exaggerated. Television even dramatizes weather predictions. A friend cancelled our lunch date because the weather channel had convinced her that an approaching storm would wash out her driveway, if not take off the roof. What actually happened was a little thunder and lightning and some rain similar to what happens in our neighborhood about twenty times a year.

Here is another example of how the media exaggerate and tend to frame events in terms of 'us versus them' or 'us versus nature.' The article's headline is "Monster Weed Has Officials on Alert." Reading further one learns that the cotton industry (agribusiness) is concerned about a form of pigweed that grows from six to ten feet tall and is resistant to the most common herbicide used in cotton. A weed scientist warns, "It's an extremely competitive weed, extremely prolific [and] potentially the worse threat since the boll weevil." When a six-foot weed becomes a monster, and headlines describe the threat to the bottom line of some business in the same terms as a plague or tsunami, the lack of proportion does confuse many of the public.

In a third example, the film "Jaws" and sensational media coverage of shark attacks obscures the fact that worldwide, sharks kill an average of four people a year, while humans kill between 26 million and 73 million sharks annually. The vast majority of the sharks killed are not from species that attack humans. They are killed for food, and some of the species are in danger of extinction.

Propagandists have spread the idea that environmentalists, along with others who warn of impending problems such as the peak and decline of oil supplies, are "alarmists." The dictionary meaning of 'alarmist' is '*unwarranted* exciting of fears or warning of danger. Beyond name calling, propagandists need to show which warnings have been unwarranted, whether the warning itself was wrong or rather set in the wrong time frame (say, 10 years too early), and who exaggerated the danger. Was it a single scientist, a consensus of scientists, or an activist group— or was the exaggeration in the way the media reported on it?

A member of the public who feels he exposed to an excessive number of scares needs to develop his own sense of proportion. Not everything under a headline is of equal importance, and the same applies to three-minute segments of a newscast. No matter what the statistical probabilities may be, the danger of an individual getting cancer from eating charred burgers is not equivalent in *significance* to the danger of large human populations becoming sterile from chemical pollution, and both are less *significant* than the danger of the entire human race wiping itself out in nuclear and nanotech wars. Even if the last-named danger were only half of one percent, it would be significant. Of course, we cannot gauge probabilities at this point for scenarios two or three.

I would like to see a lot more people a lot more alarmed about the most significant as well as the most probable threats—but not so alarmed that they become immobilized by fear. Let's not sell ourselves short. We are as capable of confronting dangers as were our ancestors who had to deal with cave bears or the plague or the Hundred Years War. But the current assortment of existential threats does require more mental processing.

Real threats such as erosion, rising sea levels, or the death of coral reefs move more slowly and are harder to dramatize than many events that are much less important in the long run but more immediately dramatic. A person has to understand how humans interlink with nature and how living things interlink in an ecosystem to know why these things matter. How would you dramatize the loss of biological diversity in a future world that lacks the hippo, the giraffe, the polar bear, and many more of the animals that we grew up knowing and loving from our picture books and stuffed toys? Besides the immediate loss, there is the underlying fact that a biosphere that cannot sustain those species and their ecosystems will undoubtedly be hostile to our own species as well.

Some of us are less concerned about what happens on Earth because we do not regard it as our real home. My local newspaper advertised a series of talks by a visiting speaker titled "Your True Environment—The Kingdom of Heaven!" Followers of some religious groups actually welcome the Earth's decline, believing that the worse things are here on the planet, the sooner the Rapture will lift them to Heaven. Those who have no attachment to the Earth are sometimes in positions of power to further its destruction. James G. Watt, former Secretary of the Interior under Ronald Reagan from 1981-1983, was highly controversial because of his hostility to environmentalism and his interpretation of Christianity to mean that public lands should be logged and mined as rapidly as possible. Similar actions have been widespread in the current Bush administration, although the motivation may be different.

Many Americans falsely assume that we are probably the best educated, best informed people on the planet. They have no idea how much they don't know and aren't told. Others are too cool and hip to care, demonstrating the wired, know-it-all attitude. This all adds up to inertia that we can't afford. In addition, people undoubtedly exist who are so selfish and shortsighted that they don't care what happens to their grandchildren, real or potential, or even to themselves in the foreseeable future, but only about what happens to their own precious selves in the immediate present. So be it.

Modern Americans are not alone in failing to develop wisdom and foresight. Human beings world-wide and throughout history have had a strong tendency to fall into customary or habitual ways of thinking. We moderns often use such ingrained habits of thinking whenever we finally get around to thinking about one of the Big or lesser questions. Scientists have identified some of these basic mental habits as *cognitive biases* that are common to everybody, for example the

hindsight bias or the "I-knew-it-all-along" effect that tends to see past events as having been predictable.

Another kind of cognitive bias is *confirmation bias,* which is the tendency to look for information or interpret it in a way that confirms your preconceived ideas. A more conscious form of this is "data mining," or looking through information just to find the bits that support what you already believe, while ignoring anything that does not agree with you. This is intellectually dishonest, of course, but we all do it until we learn better

Many people are aware of at least some of the problems described in the first four chapters but they feel powerless to do anything about these challenges to our survival. They believe that the situation is hopeless, or that one person can't do anything about it. In contrast, I once attended a lecture by Dr. Helen Caldicott, a pediatrician and passionate anti-nuclear war advocate, in which she said that if everybody in the room (about fifty of us) were to devote ourselves to changing the world, we would change it. She was right, although it might require five hundred or five thousand or even five million acting together to effect all the changes needed.

This chapter will consider some common mental predispositions, or habits: imitation, follow the crowd, story making, anecdotes and personalizing, not seeing the forest, and jumping to conclusions. First, let us get better acquainted with *memes* and other forms of imitation.

Imitation

> *When people are free to do as they please, they usually imitate each other.*
> Eric Hoffer, 1902-1983

Recently biologists, psychologists, and others have become much more aware of the importance of cultural imitation, especially—but not only—among human beings. The concept of memes is helpful. Memes are replicators or copying 'machines,' just as genes are. Instead of replicating physical forms, they replicate culture bits such as ideas, ways of doing things, language, and popular tunes. Memes have their own separate form of evolution—as in the saying, "Ideas have a life of their own." While the notion of 'memes' has proved to be a very productive one and popular among non-scientists, there are two other formulations of imitation to look at first.

Isopraxism means "performance of the same kind of behavior." Neuroanatomist Paul D. MacLean introduced the word 'isopraxis' in 1975, referring to unconscious imitation. Examples among animals are simultaneous head-nodding by lizards, movements of schooling fish, group gobbling by turkeys, and birds preening in synchronous motion. To use a personal example, I once had two young dogs of different breeds that would often stand next to each other in the very same pose, noses pointed the same direction. In animal courtship, doing the same thing at the same time promotes bonding. Many courtship rituals, especially of birds, are described as a 'dance.'

One of the most intriguing forms of unconscious imitation in humans is the 'chameleon effect' or mimicking the postures, gestures, facial expressions, and even the bioelectric activity of those with whom one interacts. Researchers, by slowing and speeding up films, found that not only is human conversation accompanied by such mirror actions but also interactions between babies and mothers. While this is largely unconscious, a few people in fields such as

salesmanship or police work say they consciously match their speech and posture to that of the prospect or the suspect being interviewed to establish a bond and communicate better.

Human isopraxism is shown by hand-clapping in theaters, cheering in sports arenas, behavior during riots and stampedes, and "the sudden widespread adoption of fashions and fads," according to Soukkhanov, cited in *The Nonverbal Dictionary*. (Some claim that fashions and fads spread by memes, a slightly different concept.)

Isopraxism may be based in neural structures. Certain neurons in the cerebral cortex of macaque monkeys activate whether the monkey is picking up a piece of fruit or is simply watching other monkeys use the same hand movements. They have been termed "mirror neurons" and have now been found in a particular part of the human brain. Human newborns aged between 42 minutes and 72 hours old can imitate adult facial expressions such as sticking out the tongue, opening the mouth, and blinking the eyes, as well as head and hand movements. Researchers link this activity with mirror neurons.

Copying behavior in animals: Another understanding of imitation comes from the work of evolutionary biologists who study how nonhuman culture is transmitted by animals copying other animals. This behavior turns out to be quite widespread, as described by biologist Alan Dugatkin in *The Imitation Factor*. Although most of us ordinarily do not associate animals with culture, Dugatkin gives many examples of copying behaviors and even of teaching behaviors in non-human species. Despite common conceptions, animal behavior is not totally based on instinct and genes—instead, cultural and genetic factors interact. This is true for humans as well.

Many copying behaviors in animals revolve around courtship. In most species, females are the ones to select a mate, and they do so based on an instinctive (genetic) notion of what constitutes male attractiveness. For instance, Dugatkin has intensively studied one species of guppy in which the female's genetic program is to mate with males that are the brightest shade of orange. Yet even in this tiny-brained species, there is imitative culture. Younger females observe and tend to copy the mating habits of older, more experienced females.

Using ingeniously designed tank barriers, Dugatkin was able to demonstrate that younger females would copy older female guppies that appeared to mate with the drabber of two males. Yet upon reaching a certain high, measurable threshold when one of the males was very much drabber than the other one, the younger female would revert to her genetic plan and go for the orange. (In fact, seemingly trivial differences of color, length of tail-feathers, and other such traits often correlate with male vitality and a lesser parasite load and thus with overall fitness for fatherhood.) These guppy experiments demonstrated that cultural transmission could be a powerful factor even with a small-brained species in which genetics plays a key role.

Another surprising effect of this tendency for females to observe and copy each other occurs with those mammals and birds (such as grouse) that gather in large arenas or *leks* for display and courtship activities. Studies found that on one of these leks, a single male could get up to eighty percent of all matings. The fortunate male has usually managed to possess himself of a central territory and then somehow to attract the favorable notice of one or more of the experienced, trend-setting females that the others copy.

Actual teaching behavior among animals is much less common than simple copying. However, the action of female domestic cats in bringing a mouse or other live prey for her kittens to play with has been observed in lions, tigers, cheetahs, meerkats, mongooses, and other animals that hunt prey. Teaching gives even clearer evidence of the cultural transmission of memes than simple copying does.

The original notion of memes by biologist Richard Dawkins, as expanded by Daniel Dennett, Susan Blackmore and others, was applied solely to humans. However, with a meme defined as a unit of cultural inheritance, Dugatkin says that memes may be older, and more fundamental, than their theorists have assumed.

These recent studies of culture transmission in animals are significant for animals and humans both. The actions of only a few individuals, perhaps even only one, can drastically change the evolutionary direction of a group, if these few individuals introduce a successful meme. Change can happen quite rapidly, a fact explained by 'information cascade theory,' which describes how a small change in behavior can produce large effects in a society.

One example of such a change might be the rapid expansion of coyotes into urban areas. For instance, something happened ten years ago around Chicago, "something we don't completely understand" according to wildlife biologist Stan Gehrt, so that the coyote population grew by 3,000 percent and infiltrated the entire city of Chicago, even downtown areas. Gehrt has a theory that the shrewdest coyotes, the ones more used to humans, are teaching urban survival skills to younger generations.

Memes: A writer to "Dear Abby" expressed irritation that her neighbor and former friend copies her choice of furniture, paints rooms the same colors as hers, currently wears the same hairstyle, acquired the same breed of dog, and has now bought a car the same make and model as the writer's. Most adults do not copy memes quite so obviously, although we do imitate each other more than we are aware. Jerry Mander points out that such emulation is automatic, especially with those we see daily. "After living with someone over decades, one picks up her or his mannerisms, facial expressions, even lines on the face and body attitudes….Slowly we turn into what we see."

Childhood and adolescence are the seasons of greatest imitation, first of parents, then of peers. Mander notes that imitation is an automatic process with children. "They imitate whatever is around: parents, cats, dogs, insects, plants, cars, each other, and whatever images are delivered through the media." Pre-technological peoples and creative people of many cultures imitate other living beings, animals and even plants, in their myth, dance, and arts. Mander says that in this way nature is not only a metaphor for human behavior but literally a teacher. But most modern, urban people focus on other people to imitate.

In current American culture, celebrities or fictional characters from film and television often become role models, that is, the people to copy. A few decades ago, a study by the National Institute of Mental Health reported that a majority of adults used television to learn how to deal with specific problems such as rebellious children or difficult co-workers, and how to understand those who deviate from the social norm. They regarded situation comedies and dramas as "true to life" models.

Susan Blackmore says that the people copied the most are powerful people or those wearing the trappings of power (the 'glitterati'), those seen as experts, and authority figures. In an example of copying the powerful, Roger Mudd reported on PBS news in 2003 that men in George Bush's administration had noticed Bush's preference for blue neckties, and now most of them and even their Secret Service escorts were wearing blue ties. Since people tend to imitate others whom they perceive as successful, imitation truly is a form of flattery. We also tend to copy people we like. One example is the legendary flyer, Chuck Yaeger, who was so admired at Edwards Air Force Base that many others copied his accent and mannerisms, according to writer Tom Wolfe.

However, many memes are copied simply because they are dramatic, as in copycat crimes. A day after the shooting rampage at Virginia Tech in early 2007, threats of similar shootings forced authorities to evacuate campuses of universities and grade schools in seven states. Another type of meme that is often copied is the *outrage meme*, based on some incident that may or may not have happened. The incident might be anything from an atrocity alleged to have been perpetrated by the enemy in wartime, to a *reductio ad absurdum* ruling by some bureaucrat or school official. Outrage memes spread quickly by the Internet, talk radio, and social networks, and are a staple of propagandists. In any case, they argue from anecdotes, that is, they greatly over-generalize from a tiny sample, sometimes just one incident.

 In early 2005 a conservative Danish newspaper published twelve satirical cartoons depicting the Prophet Muhammad in association with terrorism. In its effort to demonstrate freedom of the press, *Jyllands-Posten* (the *Jutland Post*) deliberately provoked the Muslim community to display outrage memes. Protests and demonstrations across the Muslim world eventually caused the deaths of over 100 people.

The most successful memes (whether negative or positive) have three traits: high fidelity, high fecundity, and longevity. Winning memes retain their identity through successive transmissions (unlike the old party game of 'telephone'). They propagate a lot, and they tend to last, unlike ephemeral fads and slang. Blackmore adds that memes which are easy to imitate are more successful than those hard to imitate, no matter what their content. Memes that link with basic genetic programs such as reproduction are also more successful. In addition, some memes are successful just because they are memorable or 'catchy.' That explains the advertising jingle that lodges in your head for hours despite all efforts to get it out. The meme's 'hook' may be hard to define, but people in a powerhouse ad agency have an instinct for such things.

Co-memes are those that develop in tandem, and *memeplexes* or meme complexes are large collections of associated memes such as a language or a religion.

Meme transmission: There are two main avenues for transmitting memes: vertically, from one generation to the next or horizontally, between peers. Traditional societies rely largely on vertical transmission, and so they change slowly. The horizontal method is obviously much faster, and when it is magnified by teaching and mass media technology, it can produce extremely rapid changes. For instance, a survey in April, 2006 found that four times as many people considered immigration the top domestic issue than had so considered it in January, 2006. There was no particular event to make this issue more prominent except that Congress was considering legislation and the media were reporting daily about it. Many concerns in this country are media-driven, and when the media do not report on some situation, it 'drops off the radar screen.'

Marketers and advertisers are now deliberately making use of horizontal meme transmission in the form of *viral marketing* and *viral advertising*. They exploit pre-existing social networks to spread memes that raise brand awareness or create a 'buzz' about a new product.

Memes act like genes or viruses. The power of the meme concept is in its similarity to the gene. Biologists such as Richard Dawkins regard the gene as the prime mover of natural selection in evolution because of its drive to replicate itself. Likewise, the meme—the unit of cultural evolution—is also driven to replicate itself. Some meme theorists even compare memes to viruses, which can copy themselves in living cells to the detriment of their hosts. This notion

of a meme as a virus infection would seem to put us at the total mercy of our memes, unless you also believe in a Self independent of your meme pool.

Meanwhile, scientists' view of real viruses is changing. The latest thinking is that there are trillions of different kinds of viruses, and the vast majority of them do not harm their hosts. The virus is at least as old as other forms of life, and may have been a key player in forming cellular life. Viruses are everywhere. According to Charles Siebert, "The human genome, considered as a mass, contains more retrovirus sequences than actual genes." Rather than being "a jumbled collection of biochemical shards," viruses may comprise a fourth branch of life

The viruses that have given their family a bad name are runaway replicators such as Ebola or avian flu. Other runaway replicators are cancer cells or irrupting species (for instance, plagues of locusts). We do not understand exactly why any of these start to breed so rapidly. As for memes, some infect large groups of humans but they range from fairly-benign catch phrases to self-destructive ideologies such as that of the Heaven's Gate group that led to their mass suicide, and even to holocausts and wars. However, nobody has yet classified memes or memeplexes as meme epidemics or pandemics.

Building immunity to memes: Humans certainly possess defenses and strategies to cope with takeover memes, just as we do for dealing with physical viruses. We can often prevent a physical infection by building up immunity through healthy diet, exercise, getting sufficient sleep, and so on. It may be that one could build up one's immunity to runaway memes simply by active practice of critical thinking and avoidance of junk media.

As an example of an immunity meme, Ebon Fisher cites the rap group Public Enemy and their message: "DON'T BELIEVE THE HYPE." He says this meme is "intended to increase a host's immunity to mainstream hogwash." Fisher also defines 'tolerance' as "One of a variety of meta-memes such as 'democracy' or 'liberalism' which allows an individual to avoid infection by a variety of memes despite repeated exposure."

Also consider the analogy of computer viruses. Computer scientists devised a technology to thwart viruses by seeding computer networks with a few 'honey pot' computers designed to attract active viruses and then send their codes to other computers in the system so that they can block each virus. We might compare honey pot computers with media critics and other thinkers who analyze the conventional wisdom, or with groups such as *Adbusters* who look for ads, then deconstruct them for their audience, helping people to build immunity to advertising.

Immunity to advertising and propaganda memes does have to be developed, starting with the little ones. It appears that children are watching television at younger ages and for more hours than ever before. Young children up to about eight years have a hard time distinguishing between fantasy and reality. Setting toddlers or preschoolers in front of TV sets for hours is likely to create a generation with little immunity to, or discrimination about memes. Advertisers and powerful political forces could find them even easier to manipulate by meme engineering than is the present generation.

Description is not Prescription. The tendency to imitate is so strong that it confuses many in how they read or process information. The problem may be partly a leftover from reading too much mediocre literature as a child, stories with flat characters who simply illustrate a moral. In adult fiction, however, when a novelist describes the behavior of a character, even a generally sympathetic character with whom you identify, he or she doesn't intend that you should imitate this character's behavior. In fact, at this point in the narrative the character may have chosen the

wrong path. Similarly, some who read about individuals in Bible stories think that modern-day people should imitate them in all respects. They assume that every story has a moral, in other words, it is a prescription. If biblical men wore beards, so should modern men.

Those who describe events realistically are often accused of favoring them. For instance, the word 'Machiavellian.' that describes sly and selfish intrigue was named after the sixteenth century political writer Machiavelli who described the way that political leaders acted in his day (and in most times).

Follow the Crowd

General notions are generally wrong.
                    Lady Mary Worley Montague, 1689-1762

From copying, we come to *conformity.* Humans are social animals with a deep need to belong to one or more groups. We conform to group norms in order to be accepted by the other members. This conformity involves copying the memes of the 'in-group,' modeling their behaviors and beliefs. There also exist a much smaller number of non-conformist personalities, who themselves often group together as a minority but who occasionally stand up as loners or mavericks.

Sociologist Herbert Kelman describes three types or degrees of conformity: *compliance*, or public conformity while keeping one's real views private; *identification*, or conforming completely while belonging to the group—but not after leaving it; and *internalization*, conforming publicly and privately both during and after group membership. Internalization is thus the greatest degree of conformity.

Another way to describe the tendency to identify with a larger group is "following the herd." In consumer choices, tastes in entertainment, investment decisions, political beliefs, religious beliefs, and many other areas, we tend to follow the opinions and behavior of the people with whom we identify. This is similar, you may note, to how we choose models for memes.

Even non-conformists do conform in most ways. For example, very few want to make up their own rules of the road while driving on the highway. There is nothing wrong with a certain amount of conformity unless our internalization is so subconscious and total that we do not really think for ourselves at all. Somebody coined the term 'sheeple,' which is used in a derogatory way to describe people who are so conformist that they lose their individuality and ability to reason independently. Although the label apparently originated among right-wing conspiracy theorists in the early 1980s, it is now used more broadly. People of various political beliefs apply the term to thoughtless consumers and followers of popular culture, to conservative Christians, or to those who unthinkingly accept whatever the government and mass media tell them.

Sometimes those in our group coerce us, subtly or not, to make us conform. The concept of *peer pressure* developed from experiments by Solomon Asch. The pressure to conform often applies to the outward decoration of our bodies, clothing, and the way our houses look. The American obsession with manicured green lawns (an estimated 7.7 million acres of them) often leads to peer-pressure that may even become legal pressure. Those homeowners who want to

maintain a natural meadow with wildflowers, or who prefer the cottage garden effect with little or no lawn, may get into trouble with local code compliance.

Just as accusations of being gay or a wimp are common in high school, a common use of peer pressure as political propaganda has to do with men accusing other men of being 'soft on crime,' or wanting to 'molly-coddle terrorists.' In other words, they assume that harsh treatment of captives and disregard for legal safeguards are masculine traits, which they urge other men to accept lest they appear womanish. In fact, such attitudes do not break down by gender but by psychological maturity. Adult men with a healthy masculinity do not abuse those within their power.

A sad example of masculine peer pressure of this type recently appeared in the court trial of a twenty-one-year-old Navy medic who pleaded guilty to his part in the death of a middle-aged Iraqi civilian. The young prisoner said:

> "I knew what we were doing was wrong…." He had urged the Marines to let Awad go and was offended when one told him he was being weak and should stop protesting…. "Why didn't I just walk away? The answer to that question was I wanted to be part of the team. I wanted to be a respected corpsman, but that is no excuse for immorality…"

Conformity is so well internalized that it may not even require direct peer pressure. In a series of well-known experiments, Muzafer Sherif measured to what degree a participant would adapt his answers to that of other participants while they were trying to solve a difficult problem. It seems that people will change even their perceptions to match those of others. ("I thought I saw a hexagon, but if everybody else saw an octagon, I must have been wrong.") A person with the right answer will often change his mind and follow those who know less than he does. This kind of conformity is called *informational social influence*.

In *Groupthink*, individuals conform to what they believe is consensus of a group such as a committee or task force, although individually they may doubt the decision. Irving Janis defined groupthink as follows: "A mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action." An often-cited example was the decision to engage in the Bay of Pigs invasion. This plan was made almost unanimously by President John F. Kennedy and his advisors, all of them with similar backgrounds and without military command experience.

Janis says a group is most likely to indulge in groupthink when the leader is directive, members are similar in social background and ideology, they have an unquestioned faith in their basic morality, they do not seek out outside opinions and analysis, they share the same stereotypes of their opponents, and they tend to withhold criticism of each other's ideas. Traits of a groupthink decision include a poor information search, especially for alternatives; failure to consider the risks of the preferred choice; and a failure to work out contingency plans. According to the traits listed by Janis, the U.S. decision to invade Iraq in 2003 shows evidence of being a groupthink decision.

In order to avoid groupthink, a group can appoint one person as 'Devil's Advocate' to point out the flaws in each idea presented.

A common fallacy related to conformity is *Argumentum ad populum*—"If many believe it, it must be right." A variation on this is the Bandwagon Effect—"If everybody's doing it, you'll want to jump on the bandwagon, too!"

Story Making

Stories are very ancient, and of course, we have no idea how far back they go, since our ancestors did not write them down until the invention of writing. Accounts in newspapers or on television we call 'news stories,' jokes are tiny stories, gossip and excuses and lies are stories, history is a story or a series of them. The category includes everything from "My dog ate my homework" and "She thought she was so clever but…" to Washington at Valley Forge and the Christmas story about the birth of Jesus.

I like stories too and have written a few of them. The problem is this: we often assume that we are thinking rationally, when we are actually repeating stories. It would be better to know the difference. Stories do not require evidence; rational thinking does.

When a friend of mine talks about the past, her details seldom match my memory of the event. She admits that she may exaggerate or fudge a little to improve the story. Others change the facts to make themselves look good. When this happens in politics, we call it spin. My friend's stories are benign, but people may fabricate stories about others that hurt them and ruin their reputations, cost them their jobs, even drive them to suicide. Slander and defamation of character are hard to prove and most people are not in the position to take it to court.

Often however, there is no malice intended. Person X is hard to understand, so we make up a story to explain her actions. She must be a secret drunk, or she hates men, or has a trust fund that nobody knows about. Story making is the way we explain things off-the-cuff—not with a search for evidence, the scientific method, or Roman numeral I, sub-heading A.

As an explanatory method, story making does not work well for people living in a large, diverse, complex, technological society. People need to be cautious about believing other people's stories, even news stories. Enjoying stories is one thing, but when you start believing them, make sure you know who is telling the story and why, and above all, demand evidence.

Anecdotes and Personalizing: Almost daily, one of my three local newspapers carries a letter to the editor that mentions some local or national scandal—the overzealous application of a school rule, or a person known to the writer who receives federal disability payments although he is not really sick, or the occurrence of a horrible crime—and the outraged writer is off on his favorite hobby horse, whether it is the need for stronger law enforcement or for posting the Ten Commandments.

These writers do not seem to be aware that one event, one instance, one story does not make a case for anything. Anecdotes can illustrate your argument but by themselves, anecdotes are not arguments. This is especially true since writers seldom mention a source or any kind of evidence that the story really happened. Many of the tales they cite appear to be urban legends, quite unverifiable. It seems that 'outrage' memes spread pretty quickly, and constitute one of the more successful types of memes.

President Ronald Reagan was noted for using anecdotes to support his policies. His most famous story was about the Chicago 'welfare queen' who became wealthy by collecting welfare under several different identities. The woman was never actually located, but it made a good story and it *should* have been true—because people wanted to believe it and to be outraged about people on welfare.

British psychologist Robert Dunbar and others believe that gossip evolved among humans as a form of community bonding that took the place of grooming among nonhuman primates. Instead of stroking each other's fur and picking off any twigs or insects, we tell each other

scandalous stories, so we can go "tsk-tsk" together. With larger groups, physically grooming each other would get too time-consuming, whereas talk is cheap and efficient for group togetherness. While this sort of theory can hardly be tested in the laboratory, the gossip-as-bonding concept could explain a lot about human exchanges over the back fence, in the locker room, or next to the office water cooler. It is not just women who gossip. Men may prefer to gossip about political candidates, sports figures, or workplace politics.

What is relatively harmless on the neighborhood scale can become political manipulation on a larger scale. For example, the Terry Schiavo story was a family tragedy with many ambiguous aspects, yet millions of citizens without adequate information felt compelled to form an instant opinion about it. The case even reached the halls of Congress and the White House, although without any intention of making legislation for the benefit of an estimated 15,000 to 40,000 U.S. adults and children also diagnosed as being in persistent vegetative states. Some of those other patients were in danger of losing their support system simply because of their family's lack of money to pay for it. Hospitals pull plugs, too.

Atrocity stories that spread during wars—stories based on the assumption that only the enemy perpetrates atrocities—are formed by this tendency to pass along stories that elicit outrage. They are stories about people with whom one can identify, with purported victims often children or babies who bring out our protective instincts.

On the other hand, humor—especially malicious humor—can also spread memes. Media one-liners often take a celebrity's remarks out of context or exaggerate some minor incident. This by constant repetition makes a laughing-stock out of the person and can destroy a public figure's career.

Personalizing is related to thinking by anecdotes. It includes the habit of translating events on the national or international scale to the neighborhood, even when this greatly oversimplifies and distorts the events. By personalizing, the leaders of countries become more than symbols, they become the embodiment of their nations. This "cult of personality" is much like the old style of history that focused on kings and queens, their intrigues and wars, while ignoring what the other 99.999 percent of the population was doing. To focus on political leaders as larger-than-life, mythological personalities—whether viewing them like Hollywood stars, superheroes, or demons—seems particularly inappropriate in democracies.

Every time President Bush makes a trip to Iraq, largely as a photo opportunity, he receives a bounce in the polls. Some people unconsciously interpret his mere appearance there as taking charge or leading. Media may report that a certain country is "friendly" with the United States. This is not what you and I regard as friendship because nations are 'friends' only so long as they have converging self-interests. That is more like two people using each other. Sometimes the "friendly" government is actually a puppet for a stronger nation. Sometimes it is an authoritarian regime that the U.S. should be ashamed to count a 'friend.'

Nor is the fact that the leaders of two nations seem to "hit it off" (or not) likely to override national interests regarding resources such as oil and gas reserves or scarce minerals necessary for making steel, or routes for pipelines. U.S. media often turn meetings of our leaders with other leaders into Hollywood gossip, a drama of personalities that even describes what the participants are wearing (if they are women) and how effusively they greet each other. However, private talks are what matter, and the media are not privy to these. Aides of the leaders will paper over any disagreements in the version meant for public consumption.

Very often nations cast the enemy in a war or buildup to war as the other nation's leader. He is probably an authoritarian to begin with, and propaganda demonizes him further. Then every time your country bombs the other country, you may regard it as throwing a punch at that leader, ignoring the fact that the hated leader is safe in his bunker while a thousand civilians die.

Many are disposed to blame individuals for their own troubles. They don't recognize that while sometimes people are unemployed because of personal laziness or ineptitude, at other times they are unemployed as part of a larger phenomenon, a downturn in the economy. Cognitive scientists call it a "fundamental attribution error" when we over-emphasize explanations for other people's behavior that are based on personality and under-emphasize the role of situational influences.

Another form of personalization is ascribing motivation to others, especially those you do not know in person, as if you were a mind reader. This may not be their motivation at all but only something that you yourself might want, or part of a stereotype about the group they belong to.

Personalizing accounts for one commonly observed phenomenon: people are much more easily outraged by the lies, cheating, and crimes of people of people who are in a situation similar to their own or who are even a bit lower down the socioeconomic ladder, than they are by corporation executives or government officials who lie, cheat, and steal on a much larger scale. It is as though you can identify with the person more like yourself, so that his ethical lapses threaten your own view of yourself. The bigwig, on the other hand, is rich and powerful, and his crimes are abstract and removed from your own experiences, so that you do not have a context for your outrage. Unfortunately, this tendency to get eye-for-an-eye judgmental about the man who steals groceries, meanwhile ignoring government or corporate corruption that costs citizens billions of dollars (and sometimes lives) simply provides a green light for those corrupt individuals and institutions.

'One bad example' is often used to discredit an entire institution or ideology. In political blogs and letters to newspapers, Republicans brought up misdeeds by two Democrats, committed up to thirty years in the past (Sen. Ted Kennedy at Chappaquiddick and former president Bill Clinton's sexual indiscretions), as somehow representative of the entire Democratic party and its platform, or liberals generally. They ignored scandals involving political conservatives during the same time period. The technique is similar to former president Reagan's use of an anonymous 'welfare queen' to discredit AFDC. Letters to the editor often rush to judgment from one incident, exaggerated or distorted, which spreads on the Internet. The purported bad example may not even have happened.

'One bad example' uses *conflation*, or, the fusing or confusing of several things as one thing. The habit of using one bad example as your entire argument is related to the logical fallacy of making a sweeping generalization based on an inadequate sample, using just a few instances. We will discuss logical fallacies later on. However, the one or a few bad examples argument is not only used by ignorant persons. For instance, it occurs in an article by Associate Professor of Religious Studies Edward T. Oakes, a Jesuit, defending the theological idea of original sin.

Prof. Oakes begins his paper with a persuasive summary of the arguments opposing his own position, an admirable method which he has modeled on that of St. Thomas Aquinas. But when he gets to his own four arguments defending the idea of original sin, one of them is "the immense harm that has been unleashed on humanity by a denial of this doctrine." The examples he cites are two: the millions of deaths caused by Joseph Stalin with the ideological aim of collectivizing agriculture; and Jean-Jacques Rousseau, the eighteenth-century philosopher who insisted that

humans are born innocent and corrupted by social forces. Rousseau himself was a bad example for his beliefs—he had a number of illegitimate children whom he abandoned to orphanages.

However, a number of Christian sects do not believe in original sin. They include the Church of Christ and related Congregational Churches and Mormons. Seventh-Day Adventists are divided on the issue, and members of the Eastern Orthodox Church have a somewhat different interpretation. Reform and Conservative Judaism, Islam, Buddhism, Hinduism, and other world religions do not believe in original sin.

Non-believers in original sin can hardly be held accountable for all the world's misdeeds. The largely secular country of Sweden does not demonstrate any of the horrors perpetrated by Stalin. Selective bad examples omit other facts. For instance, Adolf Hitler claimed to be Christian, Rios Montt the Guatemalan dictator who massacred thousands of Guatemalan Indians claimed to be a born-again Christian, and many millions have been killed in religious wars, imperialist wars, and geopolitical wars initiated by Christians who presumably believed in original sin.

Idealizing: Memory is a tricky thing, so that past decades may seem better today than they did at the time. Even better yet, is the past that one never experienced at all. For instance, a recent letter to the editor compared yesterday's immigrants who came to Ellis Island, described as grateful and hard-working people who immediately set out to learn English, with today's immigrants from south of the border who purportedly want special privileges and who will not learn English.

Idealization of one's love-object is a well-known component of romance, and it also applies to other family members, especially after they die. In retrospect, the deceased may seem like the people we always wanted them to be, while character flaws and a history of domestic arguments wash away as if they never were. Some leaders and celebrities such as Ronald Reagan or Princess Di become ever more ideal as the years go on—they are "idolized." The Roman Catholic Church has a process that takes some years before the Pope announces that certain people are now recognized as saints.

Patriotism of the American variety often requires idealization of one's country, especially its past, with assumptions that national policy under whatever administration always proceeds from the noblest and most altruistic motives.

Not Seeing the Forest

Only connect.

E.M. Forster, *Howard's End*

A lot of distorted thinking results from considering only the details of a situation, or seeing everything in bits and pieces instead of a whole. This fragmentation is especially true of the sorts of problems we have brought forward here: global warming, wars, overpopulation, extinctions, peak oil, dying oceans. All these situations are interrelated and crucially important. They are also ongoing. However, people's viewpoints tend to be limited in various ways, framed by their occupations and circumstances.

You remember the old fable from India about six blind men trying to describe an elephant (one found its tail and thought an elephant was like a rope, while another found its ear and thought it was like a fan). But in our world story, countless self-absorbed, blind people define the world in terms of the grocery business, their family problems, the Dow Jones average, or a

particular ideology. There is no time or motivation to describe the whole elephant—they may even doubt that it exists. Everybody needs to connect the dots and look at the big picture, but here are some of the reasons we don't.

News cycle: Media tend to cover one big story for a week or a month, and then they go on to the next one. Unless you dig for information elsewhere, you will not know what led up to the situation or hear about its aftermath.

Specialization: We divide knowledge into a number of specialized fields. Laszlo says that particularly in the case of environmental questions, we need interdisciplinary teams.

Politics: Many political leaders are not thinking in wholes because they are more concerned about getting reelected than in solving the world's problems. If our leaders will not make the connections, most followers do not either.

City living: Urbanites may be unfamiliar with nature or even the survival networks of their own cities such as water, sewage, or the trucking routes that bring in food. They falsely assume they are living without nature—so they think nature is unnecessary.

Lack of words: Many people lack the basic vocabulary and framework to understand the bigger picture. For example, to say anything meaningful about population growth one should know the meaning of terms such as ecosystem, carrying capacity, ecological footprint, and sustainability.

Ideology: Many fundamentalist Christians live in a parallel reality with a limited range of concerns—and problems about the fate of the human species are not among them.

Poverty: For people on the lower end of the economic scale, 'survival' usually means economic survival, and they do not want to think about any worse problems.

With a great many questions, we desperately need *context* based on a broader view of the world. Political issues are narrow formulations that often do not relate to the most important matters facing us. Nothing just happens out of the blue, as in the "news." Events have causes. Everything is interconnected.

Jumping to Conclusions

> *The first principle is that you must not fool yourself—and you are the easiest person to fool.*
> Richard Feynman, Nobel laureate physicist

A psychology professor, Barry Singer, says that our tendency to jump to conclusions is worsened by the human's "enormous capacity for rationalizing or defending whatever we conclude." He describes a common type of psychological experiment set up to determine how people solve problems. Experimental subjects are asked to select the right answer by being told whether particular guesses are right or wrong. According to Singer, they will likely do one or more of the following:

Form a fast hypothesis, after which they look only for examples to confirm it and ignore any evidence against their hypothesis.

If the experimenter secretly changes the answer in the middle of the guessing process, they will be very slow to change their original hypothesis.

If one hypothesis fits the data reasonably well, they will stick with it and not look for others that might fit the data even better.

If the information provided is too complex, they will cope by adopting overly simple hypotheses or strategies and again, will ignore any evidence against their hypothesis.

If there is no solution, if the problem is a trick and they are randomly told their guesses are "right" or "wrong," they will still form a number of hypotheses about relationships of cause and effect that they are sure are in the data, "and will convince themselves of their correctness."

Such experiments suggest that we humans tend to be intellectually lazy as well as attached to our opinions. It is precisely such human tendencies that the scientific method attempts to counteract, first by collecting as much evidence as possible and then by testing each hypothesis many times, by different researchers.

Jumping to conclusions or making assumptions can have lethal consequences. A recent example is that of two 911 operators in Detroit who wrongly assumed that a five-year-old boy was playing when he called 911 to report his mother had collapsed. After the child called a second time, several hours later, one of the operators sent a police car to discipline the child and inform the parent he was dialing 911, but when the police arrived the mother was dead.

Steve Allen points out other lethal possibilities of attachment to one's first thoughts: "Innocent men have been sent to the electric chair, and a far greater number have been imprisoned over the centuries, because police officials have developed an ego-investment in their first hypothesis, particularly in situations where either a heinous crime has been committed or the police have taken a long time to produce a suspect."

Say What? Many people don't really listen to others. They catch a word here or there and fit it into a category of statements, or a preconceived idea of what a person like you might say. Such people demonstrate a limited capacity to absorb new information or ideas. Whether it's the clerk in the store or the policeman at the door, the person asks questions that indicate he never heard what you said in the first place; or he restates his distorted version of what he thinks you just said. You might as well not say anything and just let them ask the questions they want to ask.

This is a communications problem and not lack of intelligence. Some people are a little quicker to catch on than their peers in school, and they go through life under the false assumption that they can second-guess everybody. Interrupting and finishing other people's sentences becomes a bad habit. One can even encounter jumping-to-conclusions-after-not-listening with college professors. It is a common experience in the shallow communication of cocktail parties, receptions, and similar events.

Part of the problem may be that because of jobs or social obligations people deal with more individuals in the course of a day than they are comfortable with. Our species was designed to live in a small tribe of people who know each other face to face, not to deal constantly with strangers and semi-strangers. Many of us have not fully adapted to the way we live now. People may feel social pressure to show interest, but they don't really listen because deep-down they don't care about you—you are just one too many to care about.

A special case of not hearing anyone else is the authoritarian person who interprets any message different from his own, or sometimes any message whatsoever, as a disagreement with him. That is why it is often a good idea to say nothing at all to a traffic cop, much less something that could possibly be turned into a conflict. I was stopped once for speeding and made the mistake of expressing surprise that my little Renault, which had once been broadsided by a larger car, could even go over 50 miles per hour without shimmying itself to death. "Are you arguing with me?" said he. "No, sir," said I, the only possible answer. In other cases—letters to the editor or discussions online—the authoritarian person does not answer other people's arguments but can only heap scorn on them and repeat his own opinion.

Rush to Judgment: The tendency to jump to conclusions is compounded by habits of the mass media, especially cable TV news, which ceaselessly consumes events, non-events, and factoids 24/7. Every public event, significant or not, requires an immediate comment. This leads citizens to think that they, too, are obligated to have an instant opinion on everything that happens (or rather, everything that has made it through the filter of the mass media). Pressure from other, impatient people may force a rush to judgment because of social assumptions that in a democracy, everybody should have an opinion about all the news of the day.

But it is quite all right to say that you don't yet have enough information to form an opinion about something, even if 'everybody' is talking about it. You are not obliged to have an opinion on everything the roving reporter asks you. It would be much better if all of us reserved opinion on anything we don't know much about and haven't had time to reflect on.

Faceism

"Image is everything."

Andre Agassiz, tennis star

Sometimes what appears to be jumping to conclusions is deeply rooted in our psyche, perhaps even hard-wired. For instance, many voters apparently select leaders on the basis of their faces. A study at Princeton University asked volunteers to pick pictures of which candidates looked more competent. In fact, those the volunteers picked were 70 percent more likely to win their races. What is it about a face that signals competence, to either volunteers or voters? It seems that those with more mature, craggier features win out over those with baby-like features such as round face, large eyes, small nose and chin, and high forehead. This preference for mature (and more masculine) features is a built-in predisposition that we must take into account.

Other kinds of faceism affect voting, as for instance the presidential election of 1948, when some believed that Thomas Dewey's moustache was a large factor in his defeat. (Moustaches go in and out of fashion.) In the 1984 presidential race, I thought Walter Mondale did not show up well on television because of dark circles under his eyes that voters might interpret as ill health, although it may have been a genetic trait, or he may simply have been tired from the grueling campaign through which Americans put their candidates. Many people say that Abraham Lincoln would not win a presidential race today, with campaigns so dependent on television, because he was too homely—or because current voters are more concerned with image.

This obsession with outward appearance appears to be growing, especially among young people, and focused on women. In a recent incident, a DePauw University college sorority kicked out twenty-three members for the reason, it was widely believed, that their looks did not fit the image the sorority wanted to project. (The sorority's nickname on campus was the "dog house" and chapter membership was declining.) According to Jessica Weiner, who writes about young people and self-esteem, "We're incredibly more focused on image than we were even 10 years ago," and image is the "currency" on which youth culture runs.

A sign of this fixation on image or a contributing cause to it is the way young people market themselves on Facebook, MySpace, and YouTube. Meanwhile, the TV show "American Idol" has humiliating auditions in which the judges make fun of the would-be contestants. Entertainment magazines and TV shows continue this unpleasant practice by picking apart the appearance and attire of celebrities, while tabloids carry pictures of stars looking their worst as photographed by paparazzi as they go to the grocery store or try to relax in their own back yards.

An ad executive observes the same obsession with self-image in Japan and India, where women are newly entering career fields. The concern with image seems related to a globalizing consumer culture. It is also closely linked with advertising.

Manipulation by Advertising: Businessmen and policy makers consciously developed advertising and consumerism in the early part of the 20th century mainly because of the crisis of industrial overproduction. With mass production and assembly lines, factories could produce more items than there were people with the money—and inclination—to buy them. As the advertising journal *Printer's Ink* said, "Modern machinery [made it] imperative that the masses should live lives of comfort and leisure; that the future of business lay in its ability to *manufacture customers* as well as products."

Another social necessity, according to historian Stuart Ewen in *Captains of Consciousness*, was to overcome people's resistance to the wage process itself. Until 200 years ago, people essentially worked for themselves, at their own rhythms; but the factory required people to work at the machine's time. Workers rebelled against the monotony of line production as well as long hours standing in one place in factories that were often damp, dark, and dirty. Many were young women or children as young as seven. (U.S. child labor did not end entirely until 1938.) Ewen says under the factory system people suffered from "loss of skills, the deification of the time-clock, the eradication of the work patterns of pre-industrial life, and the abomination of hazardous conditions around the machine."

This new kind of work created conflict from the very beginning of the Industrial Revolution, as Luddites in England tried to destroy the mechanical looms that were replacing their cottage crafts. Ewen says that constant labor struggles throughout the 19th and early 20th centuries were not so much to gain higher wages as to improve the quality and conditions of work.

But by the 20th century, business theorists believed that consumption would replace the need for meaningful work in a pleasant environment. Consumerism was thus invented to overcome people's aversion to industrial work, as well as to provide customers for the burgeoning products of industry. Theorists expected that the additional leisure afforded by shorter working hours would be used for consumption. They also intended consumerism to replace "class thinking" with its consequent labor struggles and Marxist overtones.

After a century of consumerism and advertising—the two can hardly be separated—the values of America, and increasingly values abroad, have changed in many ways of which most of us are unconscious. For instance, it was necessary to overcome ingrained attitudes of thrift and self-reliance. Ewen says "Excessiveness replaced thrift as a social value. It became imperative to invest the laborer with a financial power and a psychic desire to consume." The creation of "fancied need" was crucial. "Advertising was trying to produce in readers [and viewers] personal needs which would dependently fluctuate with the expanding marketplace."

The advertising industry used psychological methods that tried to turn the customer's critical attitudes away from the product or the way it was produced, and toward himself. He would become aware of his lacks and deficiencies, which could then be supplied by consumer products. This required self-objectification of portions of the body and bodily functions, making people uneasy and uncomfortable with their selves. Now one feared halitosis, dandruff, B.O., stringy hair, dingy teeth, and any appearance of being out-of-date, poor, or inadequate in any way. Ewen says advertising provides us with a "commodity self" to make up for dissatisfaction with our real life. Currently, much TV advertising seems to be for pharmaceuticals and over-the-counter drugs

that often medicalize natural occurrences such as baldness, menopause, or minor health conditions that people once dealt with using traditional home remedies.

Another aspect of advertising was its tendency to produce a uniform culture, which advertisers claimed was a "civilizing" and "democratizing" influence. Buying commercial products became a way of fitting into American culture. And this made people ashamed of their roots at a time of high immigration. The overall effect has been to make our culture more materialistic, more conforming, more self-centered, and more prone to many of the poor thinking habits described throughout this book, such as unconscious imitation or following the crowd, looking for a quick fix, and dealing in stereotypes. These tendencies are both exploited by the psychologically sophisticated methods of advertisers and also reinforced by advertising.

Students at every level—and adults—need to learn about how advertising affects us and changes us. One source is Vance Packard's classic *The Hidden Persuaders,* as helpful today as when it was published over 50 years ago. The group and magazine *Adbusters* investigates and analyzes current advertising techniques and their effects on our culture. *Don't be manipulated.*

Chapter 6: Recipes

A great many think they are thinking when they are really rearranging their prejudices.
Edward R. Murrow, American broadcast journalist, 1908-1965

Habits simplify our lives, and many thinking patterns are formulas to save time and energy. Unfortunately, these particular energy savings may come at the cost of reality. Circumstances differ from situation to situation, and using the same formula over and over is like wearing your overcoat summer and winter. Some of the recipes in our cookbook are the Quick Fix, Knee-jerk Reflex, Political Correctness, Blaming, Those Pesky Others, Bureaucracies, Over-generalization, Stereotypes, Over-Simplification, and Just One Thing.

The Quick Fix: Speaking of recipes, it is said that "real men do not eat quiche"—however, some of them do love the quick fix. In certain circumstances, an ingenious jerry-rigging is a work of art or an aid to survival. Scotty, the engineer on *Star Trek*, was a master of fixing a starship with chewing gum. So are many shade tree mechanics and householders, as well as those in Third World countries who are unable to run to a local hardware store for every widget they need.

Troubles arise when people apply the quick fix mindset to large and difficult challenges that absolutely require thinking ten steps ahead and into the future. Instead of using foresight, they make a habit of the 'fast and dirty,' overly pragmatic, or lazy approach. People have accused the Army Corps of Engineers, in particular, of promoting solutions that ignore the environment and contribute to future problems. Some call this quick fix mindset the 'engineering mentality,' although that is rather unfair since many engineers do not operate that way, and many non-engineers do. Quick fixes very often lead to ***unintended consequences***.

A quick fix after the floods in New Orleans would be to patch up a few levees and ignore the wetlands. A century of dredging, channeling, and other development has destroyed the ability of the barrier islands to deflect hurricane winds and to absorb excess water. When New Orleans was founded it had a natural buffer to protect it from hurricanes, but this environmental service was ignored and degraded, often in pursuit of fast bucks, which is another form of the quick fix.

All too often political leaders look at war as a quick fix, even though history gives plenty of evidence that armed conflicts seldom work out as planned, are always costly, and have become increasingly dangerous with ever more destructive technologies.

This morning's paper provided two examples of quick fixes. The first has to do with a 700-mile fence mandated by Congress to separate the United States from Mexico. The plan is opposed by businesspeople, environmentalists, law enforcement officials, and U.S. Border Patrol agents for a number of reasons, including that it is unworkable, costs too much, adversely affects rare species, and takes the place of other technologies that are cheaper. The manager of the Cabeza Prieta National Wildlife Refuge pointed out one likely unintended consequence. In some regions of the prospective fence, there are no roads, so some must be built in order to raise the fence. But making roads could facilitate rather than hinder movement into the States.

The second quick fix is proposed by a number of politicians, such as Texas Lt. Gov. David Dewhurst, who call for laws that allow the execution of repeat child molesters. However, critics point to two possible unintended consequences of such laws. If the molester is a family member, which is often the case—father, brother, uncle, grandfather—many people would not turn molesters in if it means they might be put to death. The second problem is that such laws might

give an assailant an incentive to kill the victim. David Bruck, a law professor, says that if the law is meant to protect children, it may actually have the opposite effect. Bruck says such attention-grabbing proposals attract publicity but do very little good.

Knee-jerk Reflex: Hot-button issues and certain personalities tend to elicit knee-jerk reflexes. This recipe refers to an automatic intellectual response similar to the automatic movement of your leg when the doctor hits your knee with a little hammer. The phrase was created to describe liberals, although automatic reflexes occur across the political spectrum. A little game goes on like this: Right-wingers, especially aggressive idols such as Ann Coulter, Rush Limbaugh, and Sean Hannity are more likely to go on the attack first and use more provocative language in order to get a rise out of their adversaries. When one of these carefully crafted insults or outrageous claims elicits a response from their target, the right-wing attacker can accuse the liberal of being "predictable" and showing a knee-jerk reflex.

However, people of all political persuasions should cool it and deal in reasoned arguments instead of constant playground fights, insults ala Don Rickles, and pointless one-upmanship, all of which destroy public discourse. Our shared situation in the twenty-first millennium is too dangerous to turn it over to show business.

PC or political correctness is related to the knee-jerk reflex but in this case a list of rules is applied reflexively. Again, the term was invented by conservatives to apply to liberals, but PC occurs across the board. A good example of conservative PC was yellow ribbon enforcement during the first Gulf War, when employees, schoolchildren, and others were harassed for not supporting the troops by wearing a yellow ribbon. The same mental trick is used today, when those who ask everyone to support the soldiers are really asking them to support the war. However, most of the public has learned the difference: while the vast majority of people support the troops, many of them do not support the Iraq War.

Liberals, feminists, and others also use such recipes. A few decades ago, I had my own run-in with PC when I walked up to a group of acquaintances and lightly asked, "What's going on, guys?" A young woman in the group chewed me out thoroughly for my "sexist" remark. Where I grew up in the Midwest, the word 'guys' was just a generic term like 'you-all' but to her, at least, it referred only to males. I think of this sort of response as sophomoric, in the sense that college sophomores have the reputation for having learned something after a year in college, but not as much as they think they have.

Some conservatives profess great alarm about a supposed liberal or left bias among university professors and their purported imposition of PC on their students. They seldom cite any personal experience of this. However, in one capacity or another over the years I have been acquainted with a dozen college campuses, most of them state institutions. In my experience, any kind of unprofessional political bias was rare, but especially liberal or left bias. To the contrary, liberals on some of those campuses were running scared, and with good reasons. Pundits tend to ignore the fact that there are hundreds of colleges across the country, yet very few are like the University of California at Berkeley.

Professional ethics dictate that instructors do not impose their own opinions on their students or grade them down because of disagreement about matters of opinion. If a few college teachers violate this ethic, it is not always for political reasons. Something else to consider is that probably the majority of courses in a college catalogue, especially in land-grant colleges, have technical subject matter. These are courses such as various sciences, mathematics, engineering,

business, foreign languages, home economics, agriculture, and physical education. It would be rather hard to indoctrinate students politically during a class in horticulture or hotel management, or for that matter, in art, music, or poetry classes.

'*Poor me'* is an aggrieved attitude commonly expressed by people who often appear to be in a better position than those they blame for their victimization. Among those who cry "poor me" are whites who feel that minorities receive all sorts of advantages that they do not. Then there are conservative Christians who belong to the dominant religion in the United States and who enjoy the favor of the current political administration but who nevertheless feel that everybody is picking on them.

Some Americans have the idea their country is constantly helping other nations but those others are quite ungrateful and unappreciative. Also they believe that any criticism of or opposition to any American policies by anybody else in the world shows that the others are jealous of American freedoms and prosperity. "They hate us for our freedoms."

Still others feel aggrieved because they are middle class and believe that they are the hardest working and most meritorious class of people, while others who are lazy or malingering are getting something for nothing and sponging off them. Similar attitudes are often expressed since the financial meltdown of 2008, with people who still have jobs complaining about those who don't. This attitude often involves denial of the difficulties in getting a job when there is high unemployment.

Yet another 'poor me' is indignant because she hears people speaking in another language that she can't understand, or she feels unable to go to a store because it has been set up by immigrants and has a largely immigrant clientele, who speak another language. She feels that she should not have to encounter a foreign culture in her own country, and that everybody should assimilate to her culture as quickly as possible.

Of course, there may be cases in which one of these people's grievances is justified, but for the most part these attitudes are automatic responses. Ironically, since most of these whining 'poor me's' are conservatives, one of the favorite words of conservative columnists to describe liberals is that they "whine." Also such columnists make much of the "entitlement" and "victimhood" attitudes purportedly displayed by minority and low-income groups.

Something about 'poor me' is reminiscent of sibling rivalry and tattling, especially when one sibling complains that the other one is getting away with something. 'Poor me' demonstrates a *reversal.* Other kinds of reversal are doublespeak and the defense mechanism of projection (see later chapters).

Blaming is a very common shortcut to thinking. With this recipe one acts as though whatever goes wrong must be pinned as quickly as possible onto some person or group, who may be lawyers, black leaders, illegal immigrants, feminists, neoconservatives, liberals, secular humanists, teachers unions, Catholics, peaceniks, Fundamentalists, Arabs, Jews, the UN, the current president, the previous president, or somebody else.

Besides blaming certain people for everything that goes wrong, some focus their attention on cultural elements such as rock music, tattoos, short skirts, masculine long hair, and similar apparel or lifestyle choices of (usually) younger people. Many letters to the editor hold such fleeting trends to be responsible for rape or juvenile delinquency as well as a general decline in morality. During WWII, my big-city high school banned zoot-suits as potentially demoralizing.

In a previous generation, lifestyle choices that some blamed for moral decline were jazz music, dancing, card-playing, bobbed hair (on women), and going to the picture show on Sunday.

Blame often takes the place of looking for the true causes. Finding some person or a single trend to blame may be psychologically satisfying, but most problems have more than just one cause. There may, in fact, be quite a few *contributing causes*. For instance, the tragic school shooting at Columbine was surely not due to just one factor among those often mentioned: violent videogames or other media, the availability of guns, schoolmates who bullied the assailants, school authorities who did not stop the bullying, the assailants' parents, pharmaceuticals prescribed to the assailants or those who prescribed them, the Goth subculture, or police who did not follow up previous incidents related to the assailants. Any combination of these and other factors may be 'to blame.' In any case, unless the question is, "Who ate the last cookie?" the answer is likely to be more than a single cause consisting simply of one individual or one generalized group of people or one trend in society.

The reverse side of the desire to blame someone is that if you attempt to look for a cause or a motivation, or to explore the context of an event, the blame-prone will accuse you of excusing or justifying somebody's bad behavior. Good blamers do not want anything to dilute their pure flame of blame. They simply do not see the difference between an explanation and an excuse.

Currently, the same custom of blaming, with a lot of personalization and name-calling, often passes for political discourse. Such partisan discussions remind me of a couple who once lived next to me on the other side of a very thin wall so that it was hard to ignore their disputes. No matter what the issue of contention, disagreements quickly moved to the blame phase. Anything that had happened in the last five years was brought up again, and so were the mistakes and flaws of family members: "Well, your cousin Joe did such-and-so" and "You're just like your father" and "Your mother never liked me" and so on ad infinitum or at least until somebody started throwing dishes. Many discussions about Democrats and Republicans do not rise much higher than that.

One example of blaming an individual for a much broader phenomenon of which he is part is the unfortunate fact that some people laid blame on Vietnam veterans in order to express opposition to the war or more often to express their great disappointment that the war did not end in victory. (A Vietnam vet I know says that some chapters of an established veteran's organization forced Vietnam vets out of their hall as "losers.")

It was ridiculously unjust to blame young men who had already suffered from their war experiences, who were no more responsible for U.S. policies than anyone else—probably less so, in view of their age, an average seven years younger than those who fought in World War II or Korea. Either they had risked their lives in a sincere desire to serve their country or, if ambivalent about soldiering in that war, they did not think they had any choice. It is well-known that those who fought in Vietnam were disproportionately from low-income and minority families, who did not get college exemptions or other dispensations sometimes available to others.

In a second such example, a man who felt strongly about overpopulation made audibly critical remarks about people walking down the street with several small children ("breeders!") and was quite rude to a woman who said that she was the eldest of eleven children. Obviously, she was not responsible for being born to a large family.

In a third example of personalized blame, some United States residents of Middle Eastern origin were harassed and even assaulted physically during the 1980-81 hostage taking by Iran. Some of the people harassed were themselves in exile from the Khomeini regime. After

September 11, this behavior intensified, making outright scapegoats of Middle Easterners and those mistakenly perceived to be Middle Easterners, such as non-Muslim Sikhs from India.

Those prone to blaming others probably owe this habit to their bringing-up. They in turn use blame on the personal level with spouse and children. In the business place, fear of blame makes people afraid to try new ideas and innovations and causes them to devote too much energy to 'covering their ass.' In politics blame may take the place of issues.

The Katrina blame-game: During Hurricane Katrina and its aftermath, the blame game reached new levels. First, some blamed the inhabitants of New Orleans for living in such a dangerous place and said they should live there at their own risk. These blamers were unaware that over half of Americans live in counties next to coasts, many of them vulnerable to hurricanes and tidal waves, while others live in Tornado Alley or in areas prone to landslides, earthquakes, volcanic activity, forest fires, or floods. The Columbia University Center for Hazards and Risk Research estimates one third of U.S. population lives in hazard-prone areas. In addition, heat waves can affect a majority of the states, and additional risks may be present from the transport of hazardous materials including nuclear waste near or through large cities.

In the focus on New Orleans, some missed the fact that Katrina also hit the Mississippi coast, and many similar problems arose there from government ineptitude at whatever level. An editorial in the *Sun Herald* of Biloxi-Gulfport pleaded for help for South Mississippi, where the death toll was at least 144 and residents complained that survival basics were slow to arrive.

Many false rumors spread about New Orleans residents firing on the helicopters trying to rescue them, about rapes, and refrigerators full of corpses. However, a Federal Aviation Administration spokesperson told ABC News, "We're controlling every single aircraft in that airspace and none of them reported being fired on." The New Orleans Police superintendent said on September 5, "We don't have any substantiated rapes." Lt. Col. John Edwards, staff judge advocate for the 39th Infantry Brigade of the Arkansas National Guard said, "We have never found anybody who has any first-hand knowledge of dozens of bodies in the refrigerator."

Media focus on "looting" of necessities such as water, food, medicine, or diapers projected the same frame of lawlessness. The fact that a majority of New Orleans victims were poor and black made them natural scapegoats for the disaster that had overtaken them. Molly Ivins noted that minority groups often take the blame after natural disasters, "since the days when the Hungarians were supposed to have cut the fingers off bodies to get the gold rings in the wake of the Johnstown Flood."

Later, governmental buck-passing was the name of the blame-game. Federal (Republican) officials and local (Democratic) officials blamed each other; many pinned the blame on Michael Brown, director of FEMA, who in turn blamed his boss, Michael Chertoff, the head of Homeland Security. Others singled out President Bush for lack of leadership.

Some bloggers and letter-writers even used Katrina as one more occasion to blame the other nations of the world for supposedly always receiving relief aid from the United States but never sending any help back. However, at least seventy countries did send disaster relief for Katrina, including $1.85 million worth of tents, bedding, and generators from China and 30 tons of supplies from Russia. Henry Rodriguez, Jr., the parish president of St. Bernard Parish, south of New Orleans, wanted to know "how it took the feds five days to get here [but also] how we got a company of [Canadian] Mounties here in two days"

The habit of blaming whole nationalities, religions, or nations is particularly destructive. As soon as one devil disappears (e.g., the Soviet Union), people look around for another. In practice,

the blaming of abstract, invisible, powerful enemies often translates into the action of persecuting people close at hand who are perceived as representatives of the enemy or more likely, are simply minorities in a weak position, noticeably different from oneself and friends. Fear the powerful and pick on the weak—that seems to be the universal rule.

Those pesky 'others'

> *We do not first see, then define. We define first, then see.*
> Walter Lippman, *Public Opinion*, 1922

When it comes to relating to people other than close friends and family—and sometimes even with them—we humans often suffer from a failure of imagination. For example, advice has a bad name because those who give advice often do not pay any attention to the recipient's needs. The advice is based less on "If I were you" than "If you were me (you would do such and so)." Putting oneself in another's shoes seems to be as hard as ever it was, despite our world sophistication via media. People assume that everybody thinks the same way they do.

A small group of young people from a local church recently came to my door and asked if they could ask me a few questions for a neighborhood survey, which I agreed to, thinking the survey was more general than it turned out to be. The first question was, "Do you believe in Original Sin?" to which I answered in the negative. They looked aghast, and one said, "Well, what *do* you believe in, then?" I declined to give them my entire philosophy of life, as other duties called.

Many people identify so closely with their own in-group that they seem incapable of imagining the lives and concerns of other kinds of people. This imaginative inability often coexists with a lack of empathy or even of sympathy for others who suffer from adverse circumstances. Closely related to imagination, empathy is the ability or tendency to feel what the other person feels. (Or what the other entity feels, since household pets often pick up on your moods.) A recent poignant letter to "Dear Abby" was from a person who makes a living by wearing costumes of animals and other icons to advertise store openings and such events. This professional mascot complained that some older children and even adults attacked him or her when in character, as if they could not identify with the human within.

Distancing ourselves from the 'other' is accomplished with the help of sweeping generalizations, for instance, that homeless people are all mentally ill or substance abusers or that poor people are poor because they are lazy (ignoring that many people work full-time yet are still poor). Middle-class people who consider themselves liberals are not immune from this inability to imagine the lives of others who are not middle-class—although liberals are more likely to be thoughtless or condescending rather than hostile. M, an acquaintance with a background in teaching and social work was driving me through the historically black section of town with its older frame houses. A few homes looked substandard but most were kept up and neatly landscaped. M then expressed the thought that people who lived in this part of town would be so much happier if the city would just condemn the houses and build new housing for their inhabitants. It was my turn to be aghast, as I had seen what sort of grey concrete structures the city built for its elderly and low-income residents. I greatly doubted that a survey would find even one of these homeowners in favor of M's plan.

Besides other ethnic groups and social classes, many find it hard to imagine themselves in different stages or conditions of life. The healthy have scorn for the sick; those in mid-life see

young people as much worse than they used to be; and as for the elderly who cost so much in Medicare and Medicaid—why don't they just get on ice floes and drift away?

If we can't dredge up any fellow-feeling for people in our own country, good luck to those across oceans who are suffering from famines, earthquakes, and floods. Somehow, it must be their own fault. Why do they live in such places, where earthquakes occur? Why don't they overthrow their dictators or plant more food? Or maybe their hard luck is bad karma from something they did in a past lifetime. If they had good karma, they would have been born American.

Bureaucracies are systems of managing large groups of people, whether governments, institutions, or businesses. Societies have used such systems in some form for several thousand years. Irritating as bureaucracies are, once an organization grows to a certain size some kind of bureaucratic management is necessary. The bureaucratic idea is to make categories, fit people and things into these categories, and apply the proper rule for each category. Unfortunately, people do not fit so neatly into categories, and there are exceptional situations that do not fit the rules. Furthermore, particular bureaucratic systems may be rigid, illogical, inefficient, and redundant, producing more red tape than solutions to problems.

Ervin Laszlo points out problems of overspecialization and fragmentation in large bureaucracies such as the world's governments and intergovernmental agencies. They set up separate, specialized policy divisions as if finance can be separated from trade or social justice from pollution and degraded land. Laszlo says this overspecialized approach is especially ineffective with ecologic issues, where a better plan is to create integrated task forces. Another problem is that the various departments and ministries may be in competition with each other. Laszlo says, "Separation of mandates encourages bureaucratic narrow mindedness and infighting."

Standardized tests and central databases are bureaucratizing. For example, a government agency or an employer may require all employees to pass a drug test or else be fired. Such tests show a certain number of "false positives" but the fired employee may have little recourse. Excessive dependence on academic testing in "No Child Left Behind" legislation does not take into account the way children learn or their diversity. They may have a different learning style or they are dyslexic, autistic, do not speak English at home, are highly precocious, have been abused, show special talent for music or art, come from impoverished homes with little mental stimulation, and so on.

Proposed legislation that would prohibit state agencies from contracting with businesses employing illegal immigrants was questioned by the state's ACLU director because the law would require contractors and subcontractors to verify worker status by checking names against a federal database. The database—"Basic Pilot Program"—is known to be full of errors, she said. One famous database that was riddled with errors was the Florida voter's list of supposed felons (felons cannot vote in Florida) during the 2000 presidential election. Many claim that the voters wrongly kept from voting because of this list would have changed the results of the very close election.

The automated menu you reach when calling any agency or business is a kind of technological bureaucracy. Sometimes a person gets desperate just to hear a real-time human voice, as well as to talk to a person who could probably clear up the one question that the menu does not seem to cover. The websites are little better, since they are not very interactive, but at

least you are spared listening to canned music and worse, repetitive commercials through the phone receiver you can't put down lest you miss the actual human voice when it finally speaks.

Most people have their favorite horror story about red tape and bureaucracies. Steve Allen relates an acquaintance's experience in the Post Office. The man was fortunate to arrive at a time when he was the only customer, but the clerk nonetheless required him to go and take a number, which she then called out. Such is the mindset that people get into when they work in such inflexible systems.

I have my own story, about a mortgage company. We struggled together for a year by phone and mail, while they ruined my credit rating because they insisted I had missed my very first house payment. In fact I had sent it to another mortgage company and they bought it soon after. Most readers have experienced extreme frustration with bureaucracies such as businesses, hospitals, schools, and others. Governments are not the only offenders.

Intelligent and helpful bureaucrats do exist. I found one in the California Department of Motor Vehicles when I needed a temporary license to be able to drive my aunt in her ancient car to appointments with her doctor until her broken leg healed, at which time I would return to my home in another state. This helpful bureaucrat listened, understood the situation, and looked for some way to slip me into the rules. However, what happens all too often is that the person before you (or on the phone) is only in charge of a small part of the total system; and if you do not fit smoothly into the rules already set up, this person does not have the authority, the imagination, or the sympathy to deal with you. Some bureaucracies even seem to attract a certain type of person who is happy to lord it over you because you do not fit into the system.

In sum, the bureaucratic state of mind is "One size fits all." As in the quartermaster's supply room, they have the shoes and pants, so you had better fit them. It's just too bad if you are five foot one, or six foot five, or have extra-big feet.

Be Your Own Bureaucrat. It is a common pattern in all sorts of workplaces whether schools and universities, government agencies, or commercial businesses that people add all kinds of unnecessary procedures and otherwise bureaucratize each other's jobs. They have constant evaluations, reviews, inspections, staff meetings, workshops and seminars, memos in triplicate, and consultants who often know less than the people already working there. Some of this may be useful, but much of it is pointless busy-work. Real problems and issues get lost in the shuffle. People never feel secure because they are always being evaluated.

Also, some people do not work as bureaucrats but have a similar mindset; they enjoy making categories and applying fixed rules. Natural bureaucrats relate to other people generically, as members of classes rather than as individuals. This 'pigeon-holing' is similar to stereotyping, with large generalizations about men ('never listen,' 'never admit they're wrong') and women ('talk a lot,' 'sentimental').They define themselves as good people because they follow all the unwritten rules of life such as wearing the right clothes, saying the right things, and going to the right church on Sunday. Another trait of unofficial bureaucrats is that they are accustomed to 'telling' rather than listening. Using the language of Transactional Analysis, one might say that they habitually take the role of Parent to Child, rather than relating as one Adult to another Adult.

Pigeon-holing is the lazy man's form of argumentation. You read or listen to the other person's ideas just long enough to decide where he 'fits' into your scheme of things and then you accept or reject him. Never mind what he is trying to say—he's just a Democrat, a fundamentalist, a gun-nut, a secular humanist, an environmentalist, or whatever, so he couldn't

have an individual thought. Everybody has to fit into one category or another, for acceptance or rejection. Note that this has about as much to do with rational thinking as your dog's decision about whether he likes or detests some other dog that he meets on his walk.

Over-generalizing

> *All generalizations are dangerous, even this one.*
> Alexandre Dumas fils, French dramatist, 1824-1895

Generalization is a basic tool of thinking if not the most basic tool—which Aristotle thought it was. By generalization and repetition of similar experiences, we first learn to use language and categorize our world. There are problems, however, with two sorts of generalizations: the **hasty generalization** and the **sweeping generalization**.

The hasty generalization is based on too few samples:

> "Every time I drop by, you're washing your car. You must be one of those people who are obsessed with their vehicle!" "But you've only dropped by twice in the last couple months."
> "Jane bought some used furniture in Minneapolis and got a really good deal. Minneapolis must be a good place to buy used furniture."
> "The store clerk who was so rude to me was from Patagonia. I'll never have anything to do with Patagonians again if I can help it."

It is *hasty* because you don't wait for enough instances on which to base your generalization.

The sweeping generalization, on the other hand, has sufficient evidence to draw some sort of a conclusion, but the conclusion drawn is far beyond what the evidence supports:

> "The candidate won in two primaries, and that means he will win the nomination."
> "Since they have been seeing each other for two months, they'll probably get married."
> "Tennis is good exercise—you should take it up for your heart condition."

Yes, it is true that Norwegians tend to be more reserved than Italians, but there are undoubtedly *some* stolid Italians and *some* uninhibited Norwegians, so please do not overstate the case. Men in general have more physical strength than women, but some women are stronger than some men.

Then there is plain old exaggeration: "Everybody's so rude today that you never hear 'please' and 'thank you' anymore." Exaggeration is often for rhetorical effect but that does not make it good evidence or even good rhetoric. Professor Ward Churchill got himself in a peck of trouble by characterizing stockbrokers and other financial workers killed in the 9/11 attacks as "little Eichmanns" because of their involvement in worldwide financial dealings that exploit others.

You usually know an overstatement is coming when you hear words such as "always," "never," "everybody," "all," or blunt, blanket statements such as "Men are better drivers than women." It is no excuse to say that exceptions prove the rule, especially if there are quite a few exceptions. You can rephrase the rule to say "most of the time" or "generally speaking" or "with a few exceptions" or whatever qualification fits the case. It is best to avoid words such as "all" and "nobody" unless you are quite sure that they apply—which they seldom do. Make it a conscious habit to substitute a qualifying phrase for an absolute statement. Or simply offer your generalization as a 'rule of thumb' rather than something written in stone.

You might compare over-generalization to one of those lazy recipes that call for three ingredients one of which is a can of mushroom soup. Overgeneralization is lazy because the perpetrator does not make the effort to see exceptions and qualifiers.

Words of advice: Tone it down. Lower your voice. Never say "never." Well, hardly ever.

Slanted Comparisons are distant cousins of over-generalization. You compare the best examples or ideals of one group or ideology with the worst manifestations of another, as if either one represented the whole group. You compare A on his best day with Z on his worst. These unfair comparisons are often used in ideological and religious controversies and even in the "Battle of the Sexes." Women are Earth-mothers, men are rapists; Protestant preachers are men of God, Catholic priests are pedophiles. And so on.

Even some defenders of science against 'pseudo-science' fall into this trap, by comparing great scientists and their discoveries with obvious charlatans or newspaper horoscopes. The obverse would be to compare TV commercials saying "two out of three doctors recommend" with the most noted and knowledgeable practitioners of homeopathy or hermetic arts.

In another sort of false comparison, Dixie Lee Ray, former chair of the U.S. Atomic Energy Commission, said: "A nuclear power plant is infinitely safer than eating because three hundred people choke to death every year." What Ray left out of this comparison was the time frame. The Chernobyl nuclear accident in 1986 killed an estimated 4,000 to 93,000 people by extra deaths from cancer and other diseases. (The low figure is from the U.N.'s Chernobyl Forum, the high figure from Greenpeace based on information from the Belarus National Academy of Science).

One serious nuclear accident would equal many years of choking events.

Stereotypes are over-generalized formulas that become habitual, especially about groups and categories of people. The result of sweeping generalizations, stereotypes are recipes to save time otherwise spent in actual observation of people. If all [*fill in the group*] are lazy, emotional, or underhanded, then this individual who belongs to that group will undoubtedly be the same way. It is a kind of syllogism based on a faulty premise, for instance:

All Scorpios are jealous. (faulty premise).
This person is a Scorpio.
Therefore, this person is jealous.

Stereotypes are memes that may be introduced and perpetuated through folk wisdom, school and church, media, propaganda, fiction, television, and films. Thus we have Uncle Tom, Mrs. Robinson, Scrooge, Pollyanna, black sheep, dumb blondes, red-haired vixens, and many more. There are stock characters such as the mad scientist, the prostitute with a heart of gold, white-hat heroes and black-hat villains, rubes and city slickers. A national group representing albinos announced: "We celebrate 2004 as the first year in more than two decades that a major motion picture did not include an albino villain." They noted that since 1960, fifty-five films featured an evil albino. It seems time to retire that particular stock character.

Some stereotypes describe people in certain occupations. Like most stereotypes, they tend to the negative. Lawyers are shysters, executives are 'high-powered' and have ulcers, scientists are cold and emotionless (or totally mad, with electric hair), farmers are hicks, accountants lack personality, preachers are hypocrites, librarians are mousy and go around shushing people, teachers are disciplinarians, while detectives and newspaper reporters are tough and cynical.

Women in certain occupations are stereotyped (by men) as being easy to maneuver into sexual relations. Writers drink heavily. Artists are libertines.

When casual acquaintances hear I'm writing a book, they often say, "I've always wanted to be a writer!" They never say, "I've always wanted to write this book I have in me." Apparently they think that it's a glamorous job, and if they only had more spare time they too might turn into Stephen King or Robert Grisham, with the big sales to Hollywood. A nurse had her own complaints about stereotypes as follows:

> A big problem is the way nurses have always been portrayed by the media—as passive do-gooders who are there emptying bedpans, as airheads. Emptying bedpans—that's what people tell me they think nurses do.

Another area of stereotypes has to do with age groups, especially the young and old. Stereotypes get particularly dangerous when applied to ethnic, religious, or national groups. There are obvious differences between cultures but one must be careful in defining them and always remember that not every individual shares the national characteristics. While I know a lot of Americans, it is hard to find any one word that would describe even most of them. The same is true about Russians or Saudi Arabians.

Years ago, there was a stereotype about Mexicans being lazy (a favorite word to stereotype minority ethnic groups). Mexicans were typically represented by a picture of a man in a sombrero, asleep beneath a cactus. Of course, in a hot climate it makes sense to take a midday break and I was happy to do so when I lived in Mexico. However, on a first visit to the country, I observed men working in extreme desert heat, old women with back-breaking loads of firewood, and children carrying even younger children. I had never seen people work so hard, except for people picking cotton in Mississippi.

Current stereotypes about Mexican immigrants say nothing about their being lazy, because rather obviously that particular stereotype does not apply to people who sometimes risk their lives in the desert in order to take jobs in farm labor, meat and poultry processing, or road construction. Now the negative stereotype is that immigrants won't learn English. Critics do not think about the fact that it takes a year or two for an adult to become competent in a foreign language, and that while people talk Spanish among themselves, they may in fact be gradually learning English in other situations.

Over-Simplification

> *Everything should be made as simple as possible but no simpler.*
> Albert Einstein, 1879-1955

The term over-simplification is usually applied to cause-and-effect situations. Thus a person reduces the causes for an event to one. Something that might be one of multiple causes, or a very minor factor, is put forward as the sole or primary cause. For instance, you might hear the argument that the incidence of rape depends on certain fashions such as short skirts. While passing styles could be a very minor contributing cause, it is absurd to link a violent crime solely to what its victim is wearing. After all, thousands of other men see women in the same styles and do not commit rape.

The single cause often fits with the person's other preconceptions. For instance, many letters to the editor in local newspapers find the cause of most social ills to be the lack of Bible reading

and public prayer in schools—this deficit supposed to have occurred throughout the nation since the 1970s. In vain have I responded from personal experience that public schools in the '30s and '40s in Midwestern cities such as Minneapolis and Cleveland had no Bible reading or public prayer, and none of my classmates grew up to be serial killers.

Politics is a field especially prone to oversimplifications. In a personalizing over-simplification, people blame the president for whatever the economy is doing in the short-run. While presidential policies do have an impact on the economy, no single politician is wholly to blame (or credit) with the state of an economy that involves 300,000,000 people and multi-trillions of dollars. Similarly, it is an oversimplification to blame the moral behavior of a president, Bill Clinton or Warren Harding, for the moral behavior of the entire nation of three hundred million people.

Just One Thing (MONOISM)

To a worm in horseradish, the whole world is horseradish.
Old Yiddish saying

Life is complicated and messy, but the human trend is to boil it down to—just one thing. Jay Walljasper coined the term 'monoism' to describe "the reckless and wrong-headed reduction of the intricate and often wondrous workings of the universe to a single factor, cause, or outcome...In other words, there's just one answer to any question...one solution to every problem...one genius behind every new idea or invention." One could also describe monoism as the triumph of a lazy recipe.

Walljasper says that we have absorbed many monoistic oversimplifications because of their repetition in school and the media. One may add that the current emphasis on educational testing further promotes the idea that there is only one answer, and does nothing to encourage creative or divergent thinking. In teaching, the use of extrinsic rewards—such as gold stars—only reinforces the idea that one learns in order to please the teacher, and this too suggests there is one and only one 'right answer.' So we get in the habit of looking for it. The 'right answer' in terms of cures and reforms then turns out to be just one thing such as ending welfare, stopping illegal immigration, getting rid of excessive business regulation, throwing the rascals out of office, or if nothing else comes to mind, exhorting people to be nicer to each other.

Another aspect of monoistic thinking is the tendency to identify with a few *single issues* in political life. It is not simply that one focuses energy into a certain cause—but the idea that this one cause should be first and foremost for everybody. Single issues that appeal to cultural conservatives are abortion, gay marriage, and Bible teaching in the public schools. Other such conservative issues are gun control, immigration, and taxation. Those to the left of the divide tend to find so many significant issues that it is hard for them to emphasize just one or two. Then single-issue people can accuse them of lacking a message.

Voting based on single issues indicates that the voter has a very narrow viewpoint. He can only get worked up about one or two issues because 1) he does not know about any others and 2) he has been propagandized and manipulated to think that his pet issue is a matter of good and evil and the future of the Republic. Quite often, the single issue involves scapegoats such as gays or illegal immigrants or welfare recipients.

Monoculture: We have based many of our social and economic strategies on the mono form. In modern, mechanized forms of agriculture, the idea is to plant huge areas of one crop so that it

is easier and cheaper to spray plants and harvest them all together. The buzzword is 'economies of scale.' However, huge areas of one crop attract equally huge populations of the plant's predators and diseases. That necessitates a lot of spraying, which is not only harmful to human health and the local ecology, but also expensive, based as it is on petrochemicals. There is also a loss, which may be measurable, when the farmer becomes a hired worker or works on a project so much larger than the human scale. Back in the days when Stalin collectivized Soviet farms, small farmers' garden plots consistently outperformed the large, mechanized, government farms.

The Food and Agriculture Organization (FAO) of the United Nations strongly recommends biodiversity, but in the United States, 82 percent of the harvest in 2005 consisted of only four crops: corn, soybeans, hay, and wheat.

Commodity Culture: Another meaning of monoculture refers to the way certain cultures—notably that of the United States—tend to overwhelm other cultures so that across the world more and more people are speaking English, watching American TV, eating at McDonalds, and shopping at Wal-Mart. Some may think this is good because Americans ('our side') are selling lots of products and helping the trade balance; or perhaps they think that everything contemporary American is superior to any other culture. But aside from serious doubts that Twinkies actually taste better than Viennese pastries, there are political consequences. Many people in other countries fear and resent this 'cultural imperialism' in which foreign products and images drive out their traditional crafts and customs. American memes are successful largely because of the West's superior economic power to advertise and to flood the market, not because they are inherently superior.

Some of the resentment tapped by militant Muslim groups has to do with the sexual and hedonistic values they find in Western films and television programs that undermine their traditional religious values. Conservative Christians have similar outrage about the same media culture, although in this case it is their own country. In both cases, individuals may be attracted to the looser mores—yet not *want* to be tempted. For similar reasons, recovering alcoholics avoid cocktail parties, and I avoid pot-luck dinners where I know I'll be tempted by a lot of delicious food that is not on my medically-restricted diet. (My doctor actually said: "If it tastes good, you can't eat it.")

There is a deeper concern when one culture dominates others. Just as the extinction of a species means that the planet has forever lost a unique organism, one that might have ultimately benefited humans—so does the extinction of a language or the withering of a culture mean that the human race has lost a unique way of patterning the world and universe. We do not know what we have lost, or how we might need it in the future.

Other aspects of commodity culture include ***Housing Developments,*** described in the Bob Dylan song as "little boxes made of ticky-tacky." These sprang up after World War II, with Levittown one of the first large suburban developments. In many cases houses looked almost alike, giving rise to endless risqué jokes that started out with men coming home from work and ending up in the wrong house. In my area today, large upscale apartment buildings are currently being built at a rapid pace, replacing farmland and transforming small towns. Another kind of monoculture is demonstrated in large housing projects for low-income people, again built without any distinguishing features that might enable people to make a basic identification with their home. These projects also create ghettoes of poverty that lead to drug use and crime.

Mass marketing is another form of monoculture that shows up as Big Box stores and enormous shopping malls that cater to mass tastes. Shoppers gain a very different experience

from walking a city block filled with interesting little shops carrying unexpected items, with quirky owners and clientele. Greater variety helps account for interest in antique stores and flea markets, for instance. Those who can afford it may shop in a foreign country where producing and consuming are not so centralized and homogenized, where chain stores are few and far between, and where many of the items are one of a kind.

Recently Wal-Mart gave up after trying to crack the German market for ten years. Retail analyst Kevin Coupe, said, "It ends up to our surprise that the whole world doesn't necessarily want the American version of discount shopping."

Yet another manifestation of monoism is the '***Superstar Phenomenon***': fierce competition, bidding wars, and the granting of enormous rewards to just a few top individuals in some field. In *The Winner-Take-All Society*, economists Robert Frank and Phillip Cook point out that this pattern of huge prizes for the few has spread from sports and the performing arts to business, corporate law, medical specialties, book publishing, media, and other areas of daily life. Putting such emphasis on a few top winners—a modern version of the Calvinist elect—reduces opportunities for new talents to emerge, wastes the energy and dreams of young people with unrealistic expectations who are lured by the enormous prizes, and leads to narcissistic and even self-destructive behavior on the part of the few who have 'made it.' People may undergo plastic surgery, put large sums of money into equipment or training, or take dangerous risks such as ingesting performance-enhancing drugs, all to make small improvements in relative performance. Sometimes they will even sabotage another competitor, or their child's competitor.

According to at least one economist, the superstar phenomenon is contributing to the rapidly growing inequality of incomes in the United States. This inequality adversely affects opportunity for the younger generation, causes wide frustration, and contributes to a confused and turbulent political scene.

Monoists tend to think that Western Civilization is the only civilization, English is the only language, and the Bible is the only holy book. '***English only***' advocates, primarily concerned that English be the official language of the United States, have on occasion also suggested that it would be a good idea if the entire world would speak English. That is not too likely, since English as a first language is only fourth in line, tied with Spanish, behind Chinese, Hindi, and Arabic. (As a second language, English is in second place.)

About two-thirds of the world's people are bilingual. Americans are surely as capable of learning a second language as the rest. Instead of trying to get the world to speak one language, we could try to save existing languages that are going extinct. We need more ways of looking at things, not fewer.

Walljasper says that monoistic thinking is actually destructive, because "it imposes an artificial one-dimensional structure of reality upon us, promoting the misconception that linear cause and effect can explain everything we need to know." In general, it is a good habit to assume there are multiple causes for any event or condition. Critical thinkers look for ***contributory causes*** (that act together to cause the event), ***necessary causes*** (without which the event could not happen, although something else may be needed to trigger it), and ***sufficient causes*** (any of which might cause the event by itself).

Monoism (simplistic thinking) should not be confused with a philosophical or theological position called *monism*, that everything can be reduced to a single substance or principle. There are three basic philosophical positions. Besides monism, there is dualism, which divides the world into two competing principles, and pluralism, which assumes that the truth lies in several

different systems and explanations. We are not concerned here with philosophy on the technical level.

Chapter 7: More Ways We Think (sort of)

Man is a creature who lives not upon bread alone, but principally by catchwords.
Robert Louis Stevenson, 1850-1894

What follows are sketches of yet more of those tendencies and ingrained habits through which we conduct our mental life. First, is the fact that it is very hard for some of us to change our minds when new information comes along (*Never Change Your Mind*). This often goes along with a strong attachment to and strong expression of one's beliefs (dogmatism). *Cognitive Dissonance* refers to the uncomfortable situation when a person faces two contradictory beliefs. He or she has several choices of what to do about this.

Third, take note of the power in the simple fact of naming something or somebody, and observe that many words carry an unconscious burden of emotional significance (*Names and Frames*). The words, associations, and implied story with which one introduces a subject continue to color the way one's audience thinks about it (*framing*). Also, note more pleasant words that substitute for other words that mean the same thing but have negative connotations (*Euphemism*).

Ingrained habits of thought are involved with *Dualism,* the tendency to see everything in terms of opposites or two sides. Thankfully, there are ways to transcend this disposition.

Never Change Your Mind

Of that there is no manner of doubt
No probable, possible shadow of doubt
No possible doubt whatever.
Sir W. S. Gilbert, "The Gondoliers"

"No possible doubt whatever" was evident in July 2006 when a Harris Poll revealed that fifty percent of the American public still believed that Saddam Hussein's government held weapons of mass destruction in 2003 before the U.S. invasion. The reality is that a U.S. team called the Iraq Survey Group, led by Charles Duelfer, spent almost a billion dollars over sixteen months investigating these claims and then announced in October 2004 that Iraq had dismantled its banned arsenals in 1991. The previous U.S. top weapons inspector, David Kay, had resigned in January of 2004 saying that there was no evidence that Iraq had stockpiled any unusual weapons before the U.S. invasion. Both of these reports got media play, but half the public wasn't listening.

Pollsters suggested that one reason for the public's enduring faith in the WMD story was to justify the war in Iraq in their own minds. The tendency to keep the same opinion forever is linked with the tendency to be very positive about the opinions you do have, or *dogmatism,* described in the dictionary as "positiveness in assertion of opinion especially when unwarranted or arrogant." It is evident that the dogmatic person identifies his opinions with his ego, and also desires to impose them on others.

In my personal experience, the majority of those who express their ideas with complete assurance know very little about the subject. Those who do know something are more likely to qualify their opinions. Unfortunately, many listeners seem to be more persuaded by someone who strongly asserts his opinions than by the evidence he presents, or the fact that he doesn't

present any evidence. It is as if the psychological dominance factor overrides the ability to reason, for both the dogmatist and his audience.

Dogmatists do not question their assumptions; they also prefer not to rely on evidence. "Don't bother me with the facts." Those who live by a certain ideology that they never question, or by a pattern of information they learned long ago, are uninterested in new information that might cause cognitive dissonance.

Cognitive Dissonance: What do you do when you hear new information that completely contradicts everything you believed or thought you knew about a certain subject? This situation is common enough in a diverse society with constant communications. Common or not, though, for most people it is extremely uncomfortable to hold two thoughts at the same time—something like hearing a romantic ballad and a polka played at the same time. Psychologist Leon Festinger named this unpleasant feeling 'cognitive dissonance,' which he described as follows: "Two opinions, or beliefs, or items of knowledge are dissonant with each other if they do not fit together; that is, if they are inconsistent, or if, considering only the particular two items, one does not follow from the other."

According to Festinger, a person may deal with this cognitive dissonance in three ways (or may combine more than one way). First, one may try to change one's original beliefs. Second, one may try to acquire new information or beliefs that will increase the existing consonance and reduce the total dissonance. (This may be an explanation that harmonizes the seemingly contradictory viewpoints.) Third, one may try to forget or minimize the importance of those beliefs that are in a dissonant relationship [repression or rationalization]. In the latter case, "Some people may go to bizarre lengths to avoid inconsistency between their cherished beliefs and the facts."

Names and Frames

The beginning of wisdom is to call things by their right names.
Chinese proverb

Naming is powerful magic. Putting a name or label on somebody or something influences all those who hear it. Think about the possibly negative, life-long effects on a child whose parents name him Percy, whose classmates call him "Four-Eyes" or "Fatty," or who meets frequently with a racial or ethnic epithet. Or suppose somebody you live with constantly calls you a "loser" or, conversely, boasts that you are a 'genius.' Similar power, positive or negative, exists in the naming of groups or ideas. Naming is part of the competition of each meme and meme-complex to spread itself.

Names, like other words, have emotional overtones. Every word has two sorts of meanings, the denotative or dictionary meaning, and the connotative or emotional meanings. For instance, the dictionary simply defines head lice as a form of insect, but many people have intense emotional responses to the word from personal experiences. These emotional responses are the word's *connotations.* Here are examples of some actual naming struggles. They usually hinge on emotionally-charged words, positive or negative:

Liberals vs. Conservatives: Many of those designated as liberals in the Liberal/Conservative polarity say that these terms have lost whatever meaning they once had. They would replace them with 'Progressive/Reactionary.' However, those who prefer to call themselves

conservatives resist the appellation reactionary, which has more negative connotations than conservative does.

Those to the right of the divide often call everyone farther left of them leftists, although that term used to refer to people who were more politically radical and farther left than liberals. Conservatives often conflate the terms liberal, left-wing, leftist, socialist, and Democrat to mean the same thing. They have moved the entire scale to the right. It is like a weighing machine which already has a twenty pound weight on it before you start to measure. On this distorted scale, even moderate Republicans and many Libertarians appear to be somewhat liberal. Although conservatives claim "the silent majority, there is no category word for the center. We have a left wing and a right wing, but no chicken in the middle.

According to John Dean, U.S. exit polls for eight national elections from 1976 to 2004 fairly consistently show conservatives at 33 percent, moderates 47 percent and liberals 20 percent. This suggests that the "silent majority" is actually something different. Those describing themselves as conservatives divided fairly evenly between social conservatives and fiscal conservatives.

Some people also throw the word 'fascist' around pretty loosely, for instance, to describe a city government that banned smoking in restaurants, or any bossy person.

Here are actual dictionary definitions of some of these slippery political words:

- **Conservatism:** a political philosophy based on tradition and social stability, stressing established institutions, and preferring gradual development to abrupt change
- **Liberalism**: a political philosophy based on belief in progress, the essential goodness of the human race, and the autonomy of the individual, and standing for the protection of political and civil liberties
- **Reactionary**: ultraconservative in politics, [desiring to return to a previous political and economic structure]
- **Progressive**: believing in moderate social change and especially social improvement by governmental action
- **Fascism**: a political philosophy, movement, or regime that exalts nation and often race above the individual and that stands for a centralized autocratic government headed by a dictatorial leader, severe economic and social regimentation, and forcible suppression of opposition.
- **Radical**: associated with views, practices, and policies of extreme change [left or right]
- **Libertarian**: a person who upholds the principles of absolute and unrestricted liberty especially of thought and action [and property rights]
- **Anarchism**: a political theory holding all forms of governmental authority to be unnecessary and undesirable, and advocating society based on voluntary cooperation and free association of individuals and groups
- **Populist**: member of a political party claiming to represent the common people [from left or right orientation]
- **Theocracy**: government of a state by officials who are regarded as divinely guided

Most of these political words when actually defined do not lend themselves to easy name-calling. Many disagreements would disappear or would at least advance with a lot more light and less heat if people could agree on the definition of the terms they were using. A few decades back it was commonplace in arguments for people to demand of their adversary: "Define your terms!" It would be a useful custom to revive.

Here are some other concerns about names:

Mother Earth: Elizabeth Dodson Gray sees a problem with feminizing the planet we live on. "The sense of nature as inexhaustible mother encourages us to feel there are no limits to a finite

planet, while the sense of nature as benign and ever-loving mother permits us to continue disregarding a crescendo of warnings."

Men's rights + Sexual equality: Steven Dixon started a web site to advance "a powerful mode of thought that had no name." He created (and trademarked) the name 'masculinism' for an ideology that advocates men's rights and their freedom from stereotypes, but without being anti-feminist or anti-gay. Dixon regards the masculinism ideology of sexual equality as an appropriate yin/yang balance for feminism. He distinguishes his term from the earlier term 'masculism' used by the men's rights movement which Dixon says often expresses anti-female attitudes. Dixon assertively promotes his meme, and it is spreading with some success.

850 million Americans: What should we call ourselves? Two continents in the Western Hemisphere are the Americas, yet citizens of the United States refer to themselves and only themselves as 'Americans.' Some of the other 550 million Americans resent this, especially since there are more of them than us, but no accepted substitute has appeared shorter than 'United States citizens.' Some Native Americans would insist that they are the only Americans, and that those whose ancestors invaded the American continents are still Europeans.

Weapons of Mass Disruption: The real weapons of mass destruction are nukes, but the WMD category also includes chemical and biological weapons**.** However, **a** National Security document has now redefined all this with a new name: WMD/E. Besides nuclear, biological, and chemical weapons, this new category includes "enhanced high explosive weapons as well as other, more asymmetrical 'weapons' [including] "cyber attacks on U.S. commercial information systems or attacks against transportation networks [which] may have a greater economic or psychological effect than a relatively small release of a lethal agent."

Tomdispatch comments that now in addition to going to war with "terrorism" and "rogue nations" we will be able to go to war with cyber hackers, "a generational battle which will undoubtedly be known as the Global War on Computer Hackers (GWOCH)."

Euphemism: Euphemisms are commonly used in polite conversation to soften brutal facts ("he passed away," not "he died"). For example, "non-performing assets" are bad loans or debts. "Internal reallocation" means budget cuts. People are no longer janitors but "custodians." Garbage collectors are "sanitation workers." Euphemism is a roundabout way to say something, in cases where you do not want to be too explicit. Edmund Wilson noted that the word 'drunk' has a record number of synonyms, with many also for prostitutes, the sexual act, and defecation. According to John Mulholland and George N. Gordon, "In general, the more synonyms (or euphemisms) a word has, the more we are trying to hide the reality behind the word from the view of society—that is, the less we are willing to deal with the true nature of the thing for which it stands."

The United States government increasingly employs euphemisms to disguise the actual content and purpose of governmental actions. This policy began in 1947 when the Department of War became the Department of Defense. Missile systems may receive names that have "reassuring associations with the heavens, classic mythology, American history, and even popular slang: Polaris, Nike-Zeus, Poseidon, Tomahawk, Minuteman, Pershing, Davy Crockett, Hound Dog" The following Air Force code names that begin with the word 'Peace' refer to classified projects involving military sales to allies. 'Peace Amazon' is military support for Brazil, 'Peace Andes' for Chile, 'Peace Drum' for Kenya, 'Peace Inca' for Peru, 'Peace Cognac' for France, and so on.

Nick Turse notes that a modern euphemism for torture is 'abuse,' adding in a satirical vein that it is "an interim term, soon to be replaced by 'tough love.'" More recently the Bush

administration introduced the term "enhanced interrogation techniques" to disguise torture. The phrase was preceded 70 years ago by a Nazi term, *verscharfte Vernehmung*, which means (wait for it) "enhanced interrogation techniques." According to Scott Horton in *Harper's*, "the Bush Administration rules are generally *more severe*, and include a number of practices that the Gestapo expressly forbade."

At the Norwegian war crimes court after World War II, judges convicted Gestapo officers of war crimes because they had used hypothermia, stress positions, sleep disruption, sensory deprivation, water-boarding, and other techniques similar to those later employed at Coalition prisons in Iraq, Afghanistan, and elsewhere. Unlike tortures at Abu Ghraib, the use of *verscharfte Venehmung* was regulated, and Nazi officials disciplined members of the Gestapo and criminal police who committed excesses. Nevertheless, the Gestapo interrogators were sentenced to death by the war crimes court. In general the Gestapo found other methods of interrogation more effective than torture, says Horton.

During the testimony of Colonel Oliver North before a Congressional Committee, a reporter collected the following euphemisms for the word 'lie':

- Chronology radically different from the facts
- Input different from the truth
- A telling of a version of the facts that wasn't true
- A different version of the facts
- Inconsistencies with the truth
- A fixed omission
- Information not tracking with reality

On November 16, 2006 the United States Department of Agriculture announced that the 11 million poorest Americans who sometimes can't put food on the table are not suffering from hunger but from "very low food security."

Orville Schell suggests an ironic new term "Strategic Competitor (China branch)" to signify: "Containing China militarily while using it as an industrial park for outsourcing low-paying and often polluting industries."

George Will, the columnist, coined a euphemism for an unjustified or aggressive war as follows: "Republicans sink beneath the weight of Iraq, the lesson of which is patent. *Wars of choice* should be won swiftly rather than lost protractedly."

But Americans are not the only ones. When India conducted its first nuclear test in 1974, they named it "Smiling Buddha." The Uruguayan writer Eduardo Galeano provides a list of euphemisms employed throughout the Americas, which include the following:

- Capitalism wears the stage name "market economy."
- Imperialism is called "globalization."
- Official rhetoric acknowledges women's rights among those of "minorities," as if the masculine half of humanity were the majority.
- When thieves belong to a good family they're called "kleptomaniacs."
- "Dignity" was what the Chilean dictatorship called one of its concentration camps, while "Liberty" was the largest jail of the Uruguayan dictatorship. Peace and Justice" is the name of the paramilitary group that in 1997 shot forty-five peasants, nearly all of them women and children, in the back as they prayed in the town church in Acteal, Chiapas, Mexico.

The last horrifying examples by Galeano leave the realm of euphemism and approach *doublespeak*. The term is based on George Orwell's novel *1984* about an ultimate dictatorship that brainwashes its citizens. Another example of doublespeak is the American invasion of Panama in 1989, called "Just Cause." It was hardly a just cause to invade a sovereign country solely in order to punish or capture its leader, a former ally. In addition, the disregard of civilian lives (15,000 homeless and an estimated 2,000 dead) violated the Geneva conventions. In another example, the MX intercontinental ballistic missile is called "The Peace Keeper."

Doublespeak asks the listener or reader to hold two contradictory beliefs in mind simultaneously and completely believe in both of them. This leaves a person confused and vulnerable to further misinformation. We are not describing the reconciliation of opposites through some higher synthesis, but a form of brainwashing as a way to destroy an individual's ability to reason. The slogan of the dictatorship in the novel *1984* was: "War is peace. Freedom is slavery. Ignorance is strength."

Military, paramilitary, and spy agencies are especially prone to doublespeak. The George W. Bush administration has used this concept to name several pieces of legislation, such as the "Clear Skies Initiative" that actually loosened regulations on polluting practices, or the proposed "Healthy Forest Bill" which allowed cutting of old growth forests. Chip Ward defines "Healthy Forests" as follows: "Forests made safe from the ravages of nature, i.e. bugs and fires, by removal to pulp mills and lumber yards."

Another practice related to euphemism is the use of *code words* in political discourse. Politicians in the 1980s complained about welfare and crime in the streets, but they actually meant Black Americans, as most people realized. By using code words, politicians avoided the accusation that they were racist, as well as the necessity to show any actual evidence of how race was linked with welfare or crime.

Frames

"When I use a word," Humpty Dumpty said in a rather scornful tone, "it means just what I choose it to mean—neither more nor less. The question is, which is to be master—that's all."
Lewis Carroll, *Through the Looking-Glass*

Names are also frames. George Lakoff of the Rockridge Institute has written extensively about frames, which he describes as "a conceptual structure used in thinking…Every word evokes a frame [sometimes more than one]." Thus if you hear the word crow, you get an image of a large black bird with a raucous cry. Your frame may include other images and knowledge from personal experience, cartoons or fiction. Maybe your farmer uncle hated crows. Maybe you visualize a crow with pants and suspenders, ala animated films. More than simply a group of associations, a frame provides your personal context for the word.

My personal frame for the word 'frame' includes a cartoon I once saw of a man sitting in the woods, looking at the scenery through an empty television set. Physical frames have a way of focusing our attention. Another part of my personal context for this word is 'frame-up,' when legal authorities select somebody to be accused and convicted of a crime they know he did not commit. This also relates to the power of word framing to manipulate public opinion.

One particular concern with frames is political. Lakoff states that over the last forty years conservatives, with the help of numerous conservative think tanks, have mastered the art of framing issues to fit their worldview; that they use deceptive language that evokes frames

attractive to the public. He urges Progressives to reframe issues from the perspective of progressive values and morality.

Lakoff gives the following general rules: "Every word evokes a frame. Words defined within a frame evoke the frame" (so the words 'scarecrow,' 'planting corn,' and 'raucous' might call forth your crow frame). "Negating a frame evokes the frame. Evoking a frame reinforces that frame." By negating the other person's frame or simply by bringing it up at all, you reinforce it. When you realize that your dualistic opposition only solidifies the other person's conceptual structure, you see that you must use a different strategy. Reframing is required instead.

Tax relief: Lakoff says that the word 'relief' evokes the following frame:

> There is a blameless Afflicted Person whom we identify with, and who has some Affliction, some pain or harm that is imposed by some external Cause-of-pain. Relief is the taking away of the pain or harm, and it is brought about by some Reliever-of-pain. The Relief frame is an instance of a more general Rescue scenario, in which there is a Hero (the reliever-of-pain), a Victim (the Afflicted), a Crime (the Affliction), a Villain (the Cause-of-Affliction), and a Rescue (the Pain Relief).

Lakoff goes on to explain how every time someone uses the phrase 'tax relief,' it reinforces the view of taxation as an affliction and conservatives as heroes.

Maps as frames: An example of reframing is the Peters World Map, an equal-area map of the earth introduced by Arno Peters, a historian, in 1967. (The Peters map is similar to a projection by a Scottish clergyman a century before.) The new map was introduced to replace the Mercator projection, the most common world map and the one with which readers are probably most familiar.

It is said that all maps are political. The problem with the Mercator map is that the farther a region is from the Equator, the bigger it looks on the map. Such inflation means that Greenland looks larger than Africa, although Africa is actually thirteen times larger than Greenland. Since most of the economically less developed countries are tropical, their political, economic, and cultural significance is diminished in the Mercator 'frame.' The implication of the Mercator map is that the United States and Europe are more significant, because they look bigger. Cartographers were slow to accept the Peters map, because like all flat maps based on a spherical Earth, it suffers from distortions. They were not fond of the Mercator projection either. Some North American geographic organizations adopted a resolution that asked everybody to stop using rectangular world maps entirely, because all of them had problems. However, books still contain flat maps, and the Peters map has grown in popularity.

Death tax: Republicans desiring to repeal the estate tax (which affects the wealthiest one percent of the U.S. population) named it the "death tax" to suggest that it affects a large number of people who are trying to provide some inheritance for their children or grandchildren. A letter to the editor reframed it as "the Paris Hilton tax."

Mistakes: James Rothenberg notes that critics from both left and right describe the Iraq War in terms of a "mistake, folly, misadventure, or blunder." But they are talking about the way the war has been conducted, not its initial motivation. Rothenberg says a larger, more truthful reframe would spell out that what is at stake is Middle East oil, "the control of which transcends this particular administration and has been fundamental U.S. policy since after the second World War….That's why we went, that's why we're staying, and that's what cannot be stated in the polite circles of influential opinion."

Moral Issues: When we discuss politics in terms of "moral issues," who decides which are the moral issues? Some people frame morality as abortion and gay marriage. Others think that poverty, war, racial discrimination, and public corruption are more important moral issues, even though they may not be defined or framed as such by the media.

Landscape is a certain kind of visual experience, an aesthetic response to the world based on humanizing nature and making it more pleasing to human beings. The concepts of habitat or place, on the other hand, refer to real physical spaces in which humans and others live.

Winning war: A common frame used in discussing wars such as Vietnam and the War in Iraq is 'winning.' Many people are extremely frustrated when the country is bogged down in an inconclusive war but they are also disturbed by the idea of withdrawing from it. People commonly say that the United States should not enter wars unless they are "winnable" or unless civilian and military leaders have the mindset to win them. Others say that once having entered such a war, the United States should always continue until the war is "won."

A different frame is whether war is justifiable, rather than whether it is winnable. Another reframe distinguishes between wars and occupations, asking for a definition of victory in the case of an occupation force beset by insurgents using guerrilla tactics. One could use historical examples of similar occupations and their outcomes, for example the French in Algeria.

Movie clichés are frames with stereotypes that influence us more than we may admit. First, note what sorts of people and stories are included as subjects and which are excluded from movies (and television dramas). Until the 1970s most minority groups were either absent or stereotyped. In older films, Blacks were usually comic characters, simple and easily frightened, Native Americans and Mexicans in Westerns were only foils for the white heroes, while Orientals were often devious villains like Fu Manchu.

In the movies, poor rural people are usually country bumpkins, figures of fun, just as they were 400 years ago in Shakespeare's plays. Most films continue to feature middle-class or rich people rather than working-class individuals. Hollywood tends to portray the South as "a gothic swamp brimming with sexual repression, raging racists, and ignorant mountain folk," according to reporter Scott Bowles. Southerners are sensitive about such media stereotypes, and their resentment actually contributes to political divisions.

Very few movies have been made about labor struggles. Until recently, gays were in the closet onscreen as well as off. It is an occasion when a film such as "Golden Pond" comes out about older people. You would think from the movies that the settlement of this country was almost totally about male gunfights in Western towns where women either work in a bordello or arrive on the train as a schoolmarm (despite the fact that there are never any children in sight for her to teach). Hollywood can afford to make endless movies about explosions and car chases but not very many about a past filled with vivid, unique characters and dramatic events. We hardly ever see a reasonably authentic film about any period of world history that doesn't involve fancy costumes, swordplay, Queen Elizabeth I, knights in armor, the Ten Commandments, gladiators, or the Crucifixion. Even American history is shorted or sentimentalized. Where are the films about vivid American characters such as Victoria Woodhull, Nicola Tesla, or Mother Jones?

What's Outside the Frame? Imagine yourself in the local art museum, focusing on paintings. Each physical frame points up what is inside of its rim; it also draws the eye away from what is *outside* of the frame (perhaps a crack in the wall). You may not even notice the museum guard, one of a profession that does not call attention to itself. It is the same way for mental frames: if

you get too used to looking at everything within narrow frames constructed by the media or your own thought habits, you may miss seeing the elephant in the room.

Or you may miss seeing the person in a gorilla costume, as demonstrated in a study published June 2006 in the *Journal of Applied Cognitive Psychology*. The research intended to test the influence of alcohol on "intentional blindness—the inability to see what is in front of you when you are focused on another task. To half the people tested, experimenters gave drinks that brought their blood-alcohol levels up to half the legal limit, while the other volunteers had placebo drinks without any alcohol. Then each subject watched a short film clip of people playing ball, with the task of counting the number of times they passed the ball back and forth.

Concentrating on this counting task, many did not notice the "gorilla" which walked among the players and beat its chest in the middle of the tape before leaving. It is not surprising that only 18 percent of the drinking subjects noticed the ape, since alcohol drastically reduces one's ability to multitask. But fewer than half (46 percent) of the sober volunteers saw the gorilla go by.

What else are we missing?

Dualism

There are two kinds of people in this world: those who divide everything into two groups, and those who don't.
                                        Robert R. Benchley, American humorist

The point here is that dualists are obsessed with dividing everything into two, *and only two*, opposing types or categories. You're an extrovert or introvert, a hero or a coward, a fundamentalist or an atheist, a genius or an idiot. You must vote Republican or else Democratic, and you are either right or you're wrong. The dualist ignores a lot of middle ground. When the notion that everything comes in opposing pairs is applied to human groups, the idea often ends up as 'we are good and they are bad.'

Dualism is defined by the dictionary as a doctrine that the universe is ruled by two opposing principles: Good and Evil. Such beliefs have inspired whole religions, notably Zoroastrianism and Manicheism. The latter was a great rival to Christianity in the third to fifth centuries and Christian leaders declared Manicheism a heresy. Zoroastrianism has evolved and still has followers, while Manicheism persists in current religions and ideologies. Fundamentalists tend to be more dualistic, or Manichean, than mainstream Christians or Muslims, ready to frame events as Good versus Evil warfare as in the *Lord of the Rings*. In fact, people of most ethnic and religious groups are all too prone to demonize their adversaries as part of their dualistic orientation.

Eckhart Tolle, once a Cambridge scholar and now a spiritual teacher, says that we each develop a story line of self which cannot sustain itself for long without conflict or strife.

> [This fictional self] needs other people and situations with which it can be in opposition, because to be in opposition to something strengthens our sense of self. If I have enemies, my identity is strengthened. And this applies, of course, to both a personalized sense of "me" and a collective sense of "us": our tribe, our religion, our nation. In both cases, it is through enemies and conflict that the self defines itself, that it can declare itself "right."

The Cold War was a forty-year extension of the Manichean ideology of Good versus Evil, especially from the American side. Thus the United States public became accustomed to viewing foreign relations in Manichean terms. The Bush administration framed the Iraq War using World War II, the real war that most closely corresponded to a Good versus Evil story. Various conspiracy theories are set up in Manichean terms, especially those spun from the Book of Revelation.

A more philosophical form of dualism was Plato's distinction between matter and form. Another such belief took hold about 300 years ago, called *Cartesian dualism* after the great mathematician René Descartes, who proposed an essential divide between body and mind.

In daily life, rather than being a religious or philosophical doctrine, dualism is often a default system. The popular human habit of reducing all questions to us or them, right or wrong, black or white, good or evil, may be simply a fall-back to our Lizard Brain. The lizard (or reptile, or dinosaur) brain is what some call the oldest part of our three-part organ, in which the mammalian brain appears layered over the reptilian brain, while the frontal cortex—greatly expanded in the human, and capable of rational thinking—is in turn layered over the mammalian brain.

A number of basic animal behaviors such as aggression, territoriality, asserting dominance, fight or flight, and the habit of dividing everybody into Me or Not-Me are characteristic of lizards, yet still operative in higher animals, including ourselves. Stephen Jay Gould says: "Perhaps we have never been able to transcend the mechanics of a machinery built to generate simple twofold divisions and have had to construct our greater complexities upon such a biased and inadequate substrate."

Humans are quite capable of positive emotions and rational thought, but all too often we simply react from ancient impulses. Add this tendency to our powers of invention (modern technology) and you have a dangerous combination. According to psychologist Albert Bernstein and co-author Sydney Rozen, "Dinosaur Brain thinking pervades the human consciousness. All the great crimes of humanity are based on this tendency to classify into two categories. [It is] the neurological basis for prejudice, racism, genocide, and wars."

Are we neurologically stuck on two? Hens are reportedly able to count to three (eggs) so it seems we humans should be able to count at least as high as a chicken. Saying that there are two sides to every question is certainly an advance over the monoistic "My way or the highway," but it still puts us back into the ancient Me/Not Me mode. Most issues have far more than two 'sides.'

Either/or Dilemma: Holding that two alternative points of view—usually the two extremes on some spectrum—are the only options is a fallacy with several names (probably because this fallacy is so common!). Names include the following: fallacy of the excluded middle, false dilemma, false dichotomy, black and white thinking, and either/or dilemma.

Dualism is implicit in the statement that "You're either for me or you're against me."   If you stop to think about it, there could be numerous alternatives. You may be neutral concerning me; you may support some of my actions but not others; you may dislike me personally but not actively oppose me in public life; you may like me personally but disagree with my public stands; or like Voltaire, you may disagree with what I say but defend my right to say it. I find at least five alternatives.

False dilemmas are especially common and especially destructive in politics. The tradition of a two-party political system in the United States contributes to emphasis on 'only two sides.' Lately, contrived dualism and false dilemmas promoted by political propagandists have polarized

U.S. politics to a degree probably greater than any era since the Civil War. Even during the Vietnam War, members of the House of Representatives and Senate managed to be mostly civil to each other.

Competition: Another dualistic assumption is that life is totally competitive, and that every situation must have a 'winner' and a 'loser.' This belief is a formula for something like the pecking order of chickens—except that a group of chickens establish their hierarchy as chicks, not at every new encounter. This idea that life is like a seesaw in which one person must be down for the other to be up, may be compared to a "zero-sum game" such as poker or baseball: a game in which one player's winnings equal the other player's losses. But many real-life games do not operate like this. For example, arms races are not zero-sum games because both participants can lose.

It is possible to transcend those limiting beliefs that assume total competition and that view most life situations as zero-sum games. Some people quite consciously promote "Win/win" situations in their families and workplaces. Cooperative games counteract the automatic assumption that one party must lose. A few years ago at a large picnic in the countryside I took part in a softball game that included people of a wide range of abilities, each trying to do our best rather than to win. Mistakes and setbacks did not upset us; in fact, some of them were amusing. A number of people said afterwards how much fun it was to play without the pressure of competition. Nevertheless, the win/lose assumption is deeply ingrained in our American worldview, in economics and politics as well as sports.

Polarizing Issues as False Dilemmas: An example is one of the most polarizing issues, abortion. A moderate position is rarely heard although it probably appeals to the greatest number of people. In this moderate view, abortion is at best a tragic necessity and society should keep the procedure at the lowest numbers possible—by preventing unwanted pregnancies—while keeping it legal and safe. We find examples of other countries such as the Netherlands, which has reduced its abortion rate to about one-third of ours by comprehensive sex education including contraception, combined with basic medical and subsistence support for mothers and babies since many women across the world choose abortion for economic reasons.

Economics seldom enters the polarized discussion of this issue, but economics is an important part of the picture. In the United States, working mothers receive less income than non-mothers do, and single moms make the lowest pay of all, between "56 to 66 cents to a man's dollar." Joan Blades and Kristin Rowe-Finkbeiner in *The Motherhood Manifesto* claim that if it were not for this wage gap that affects all mothers, U.S. poverty rates for single moms would be only half of what they are now.

Comparative statistics with other countries show that this "mommy wage gap" correlates with the lack of national policies such as paid family leave and subsidized childcare. For instance, the United States is one of very few nations that do not offer paid maternal leave. One hundred sixty-three nations offer women such leave for some period after they give birth, according to *The Motherhood Manifesto*. This is usually enacted as part of a nationalized health care plan.

A complete Pro-Life/Well Baby movement would include concern about environmental toxins such as mercury and dioxin that cause miscarriages and birth defects, and about family violence that often peaks during pregnancy and early months when the infant requires constant care and cries a great deal. Compassion for infants and families would provide assistance for

those new mothers who are vulnerable to post-partum depression or psychosis. Moreover, true concern about infants would include those millions born across the world in conditions of terrible poverty. The greatest threat to their existence is not abortion but malnutrition and disease.

'***Left and right brain' modes:*** It is true that some things *do* divide two ways, including two basic modes of thought, two complementary brain functions roughly identified with the left and right halves of the cerebral cortex. One mode of thought looks for differences, and thinks sequentially and verbally (the 'left brain'). The other looks for similarities, patterns, and wholes (the 'right brain'). Of course the situation is a good deal more complex, as both frontal lobes work together and also with older parts of the brain, to process information from the senses and the rest of the body. The corpus callosum is a pathway between the two hemispheres.

The brain is so busy doing all this integration and processing that it uses one-fifth of the body's energy, night and day, enough to power a ten-watt bulb. (On the other hand, I have not been able to discover how much energy the brain puts forth, or if it could actually power a small light bulb as in the comic strips when a character gets an idea.)

There is a connection between these dual functions of the brain and our attachment to dualistic ideas. For the past three hundred years of science and industrialization, Westerners have tended to favor and identify with 'left brain' functions such as the ability to make distinctions between one thing and another. This ability is of course a very basic function of the mind, something that infants begin to learn in infancy (although it is not any older or more basic than the generalizing capacity to see that two or more items are alike).

Some givens in Nature, such as day/night, bilateral symmetry, paired eyes, ears, arms, and legs, provide us with a two-sided model. However, we have only one mouth, one nose, one head, one navel, one heart, and one main sex organ. We can also observe many life forms based on other plans of organization such as radial symmetry (starfish, sunflowers).

The fact that there are two genders also leads some to consider them as opposites ("the opposite sex") and to exaggerate what differences exist. Humans have long used gender as an organizing principle. For instance, nouns in many European languages have an embedded gender that requires different forms of articles and adjectives. The more abstract words tend to have the feminine gender. Also, electricians and perhaps other trades use gender to distinguish between different forms of plugs, outlets, etc. But being complementary is not the same as being opposite.

Transcending Dualism

The color of truth is gray.
Andre Gide, French author, 1869-1951

Several concepts can help to transcend dualistic thinking. One is the *continuum*, a range of traits rather than a polarity. If you look at colors on a paint chart—say palest blue to deepest midnight—you perceive a great many in-between stages. The word *spectrum* also helps visualize a range of variations in any given trait.

Another concept is the *bell-shaped curve*. Countless scientific studies have found that a species' traits, such as size, coloration, or intelligence (as measured by standard tests), tend to show up on a statistical model as a curve in the shape of a bell. There will be a few individuals at each of the far extremes, gradually increasing in numbers as the trait approaches its median. This model of the bell-shaped curve applies to many human phenomena as well. Either/or statements

that assume everybody is at one extreme or the other do not bear up statistically—because most traits will cluster at the middle, not at the ends.

You might want to think in terms of alternative options. A friend proposed, only partly in jest, an addition to the Bill of Rights that guarantees Freedom of Multiple Choice. This would address the need to keep from being boxed in by constant false dichotomies in our public life.

Taoism, which became one of the three great religions of China, embodies the harmony of opposites. The well-known Yin Yang symbol can express any two polarized forces or basic dualities in nature. Allan Watts describes the yin and yang as negative and positive energy poles. You could also view yin as potential energy and yang as kinetic energy. The Yin Yang symbol includes a small dot of white in the black and a small dot of black in the white, showing the seed of inevitable change to its opposite. Taoists believe that change is the only constant factor in the universe.

Kenneth Boulding gave another statement of this Taoist concept, in this case noting that excess of good may turn bad: "We must always be on the lookout for perverse dynamic processes which carry even good things to excess. It is precisely these excesses which become the most evil things in the world. The devil, after all, is a fallen angel."

Whatever method works to widen horizons beyond black and white thinking should help personal interactions as well as public life. Let us all try to avoid the constant adversarial stances and extreme positions that have afflicted the United States in recent years.

Chapter 8: Faith Means Many Things

When I do good, I feel good; when I do bad, I feel bad. That's my religion.
Abraham Lincoln, 16th President of the United States

During the G.W. Bush administration, the term 'faith' was widely used to refer to religious institutions. There was a lot of controversy about 'faith-based' programs. However, another common meaning of faith is the attitude of ***Optimism*** or hopefulness*.* It is not an idea but a matter of temperament and outlook. While helpful in many situations, this kind of faith often gets pulled into the argument as if it had something to do with the evidence.

In the last two centuries, many people in the industrialized world have subscribed to an optimistic view of the future, and the idea that everything is getting better and better—***Progress.*** But we seldom ask this question: if there is progress, what are we progressing toward?

The subject of faith evokes many questions. Is faith the same as religion? Is it the same as organized religion? Can you have faith in an ideology as well as a religion? Some people believe faith and reason are unalterably opposed, while others think they can coexist. As citizens we must consider Faith-based Initiatives or programs in which sectarian religion gets mixed up with political purposes. Then we consider the relationship between faith and ***Morality,*** often taken for granted.

People also tend to put faith in their chosen sources of information, but they have differences about whom to accept as authoritative—***What Sources Do You Believe?.***

Optimism: The word 'faith' has become widespread in our political life, referring to organized religious groups. However, let us first consider faith more generally as an approach to life rather than as a belief-system. Underlying the usual definitions of faith is the bedrock meaning of trust in the universe, in the sum of our experiences, and in our selves. This kind of faith predates religion and even Homo sapiens, since most creatures appear to have an inborn self-confidence and will to survive that allows them to carry on through injuries and adversities. It has been called 'the life force' or the 'élan vital.' Most of us have experienced the awe-inspiring persistence and vitality of other life forms, even a small invertebrate such as a night-flying moth or crayfish. This desire for life cannot be called a belief and certainly not a religion, yet it has an effect similar to some religious beliefs.

The will to live has survival value, for us as well as for less complex creatures. Most human beings who have had a reasonably good childhood, and now have a reasonably supportive social environment, retain their natural optimism and resilience. They trust in other people, their own abilities, and their future. Most of us expect the sun to come up tomorrow morning, and other drivers to stop when the light turns red. Faith can mean hope or courage. People are often urged to "have faith" when they have suffered a loss or trauma, or are seriously ill. This sometimes means simply to trust in a beneficent Universe, or in one's own powers of healing.

Optimism has a close relationship to faith used in this broad, non-religious sense. Optimism and pessimism are part of a continuum of habitual attitudes toward life. As with other such dualistic pairs, most people fall somewhere in the middle ground, which we might call the Realist position: "Hope for the best and prepare for the worst." Few of us are like Pollyanna, constantly spinning silver linings, nor are we like Eeyore, the lugubrious donkey in *Winnie the Pooh*, constantly moaning his complaints. While a deeply pessimistic view of life often

expresses a person suffering from depression, a relentlessly optimistic view suggests either reaction formation (the person is cheerful to avoid being depressed), or a habit of denial.

Denial often links with pessimism, as Paul Krugman points out:

> One thing I've been noticing on multiple debates in public policies—climate change is another one—is there seems to be an almost seamless transition from denial to fatalism. That for 15 or 20 years the people would say, "No, what you're saying is not happening." And then almost immediately they'll turn around and say, "Well, yeah, sure it's happening but there's nothing that can be done about it."

One famous expression of optimism is the Positive Thinking movement propelled by a number of best-sellers by Dale Carnegie, Norman Vincent Peale, Harry Emerson Fosdick, Napoleon Hill, and others from the 1930s until New Age versions today. Note that this movement began during the economic depression of the 1930s, when many people had lost their jobs and savings. Positive Thinking has critics such as Richard Lazarus, Christopher Lasch, and others who point out that faith, optimism, and positive thinking can be overdone and then they turn into blind faith, denial, and disregard for consequences. Attempts to be constantly positive about traumatic conditions in your own life may be counterproductive, interfering with other coping mechanisms. If you mouth positive platitudes about other people's traumas, it looks like a lack of sympathy.

People, especially young ones, often take risks under the optimistic illusion that "Nothing bad can happen to me." Whole communities build on the floodplain or next to the volcano, and they do it over and over. Some people ignore the posted signs and insist on feeding the bears. But this kind of unthinking 'faith' destroys whatever evolutionary advantage that optimism has.

Recently, political spin has taken on optimism and pessimism, with 'conservatives' accusing 'liberals' of undue pessimism and doomsday thinking. However, in the 19th century meaning of these political terms, liberals would be identified as optimists and conservatives as pessimists. Liberals believe in progress and the perfectibility of humans, while conservatives prefer to keep things the way they are, finding human nature flawed and unlikely to change for the better. At any rate, one's temperament does not necessarily lead to partisan political positions. When 'liberals' are pessimistic, it might be because 'conservatives' are in power, enacting policies that liberals feel are destructive. At any rate, are we supposed to run our lives and our nation by the preponderance of our moods—or by principles, ideas, and facts?

Some individuals currently apply the optimism/pessimism argument to specific issues such as the Iraq War or Global Warming in such a way as to deny the possibility of any objective truth. Those who want to see progress in Iraq or who want to deny the reality of climate change are ready to blame scientists or the media and to kill the messenger for reporting any news to the contrary. For them, optimism is good, pessimism is bad, and the facts must follow.

Faith in the collective future—although an ancient idea—is an ideology that is peculiarly American: the idea of *Progress*. Our nation developed when new settlers overran a huge continent and exploited its great supply of natural resources. These ancestors started a new form of representational government that turned into a stable republic, a symbol of democracy for other countries and a destination for poor and oppressed people in other parts of the world. The United States led the advance in new technologies for over a century. When the frontier ended in the 1890s, the USA began to add colonies and spheres of influence, ending up as the world's

most powerful nation state. It is natural that this country more than any other should be enamored of Progress. It is an article of *faith*.

The 1920s were perhaps the apex of belief in Progress in this country, before the Great Depression of the 1930s disillusioned positive thinkers who had assumed that recurring cycles of economic boom and bust were over (something like those positive thinkers who keep building on the floodplain and next to the volcano). At the same time, land-use customs that caused erosion, combined with drought, led to Dust Bowl conditions that drove many small farmers off the land. Economic depression affected many countries, several of which developed totalitarian regimes. Japan attacked China, Italy attacked Ethiopia, and reactionary forces in Spain, supported by the fascist governments of Germany and Italy, attacked the elected government of Spain in a dress rehearsal for World War II. You did not hear much about Progress in the 1930s and 1940s.

However, another high point of belief in Progress came in the 1950s as cheap oil fueled a wave of prosperity that created a large middle class. Returned soldiers now able to start their families helped create a Baby Boom. Television was the newest toy, but there were many other technological and medical advances, as there often are after wars (because certain kinds of research are well-funded during wars). Many people, especially conservatives, look back to the 1950s as a sort of Golden Age, not only because of economic prosperity but because the status quo of the early twentieth century had been reestablished with traditional gender roles and suburban conformity.

For many, the idea of Progress is at low ebb today for numerous reasons, some of which we described in Part I. The peaking of global oil supplies and depletion of many other resources; increasing scientific consensus that climate change is upon us; pollution and social problems that inevitably seem to accompany new technologies; persistence of harsh poverty in one-third of the world; wars and rumors of wars; and in the U.S., economic contradictions with predictions of collapse: these put together do not inspire high spirits.

Nevertheless, some opinion-makers, like Voltaire's fictional Dr. Pangloss, still maintain that we are living in the best of all possible worlds. Notably, the 'Cornucopians' are economists who follow the late Herman Kahn and Julian Simon in teaching that there are few or no limits to economic and population growth. More recently, transhumanists strongly believe in scientific progress, promoting specific biotechnologies that they believe can extend human longevity and expand human experience.

Susan Blackmore in *The Meme Machine* makes a useful distinction between two different meanings of the term 'progress.' In one sense, it is movement towards some goal or objective. In the other sense, it "implies only increasing design, increasing complexity, or any kind of continuous development *without a particular goal or end point built in*." As technology and daily life become ever more complex, we might ask ourselves: what is the ultimate goal of this 'Progress?'

Faith and Religion

It behooves us to be careful what we worship, for what we are worshipping, we are becoming.
Ralph Waldo Emerson, American essayist and philosopher, 1803-1882

Let us return to Faith in its more usual, dictionary definition as "something strongly believed, especially a system of religious beliefs" or "unquestioning belief in anything." Such definitions can include strong or unquestioning belief in an ideology as well as in religion. Some people

have faith in the free market, others in scientific progress, and may express such faiths with as much fervor as others display about their Presbyterianism. William Anthony Hay lists some substitute faiths:

> The theologian Paul Tillich noted the way in which people invested worldly things, especially politics, with transcendent meaning. In a 1937 speech, Winston Churchill described communism and Nazism as "non-God religions." By the 1960s [Michael] Burleigh argues, consumerism in Western Europe and the U.S. had become a substitute faith.

For some, patriotism or even sports may appear to be a substitute religion. However, recent common usage associates faith with organized religions of a more traditional kind.

Religious faith is central to many people's lives, and countless millions have found grounding and solace in it. People of faith have dedicated themselves at great personal cost to ending war, slavery, poverty, and injustice. They are inspired by religion to reach their highest selves. Such belief can integrate one's total experience It often transforms individual lives and rescues people from self-destructive behavior. Lady Mary Worley Montagu, back in the 18th century, put it this way:

> Nobody can deny but religion is a comfort to the distressed, a cordial to the sick, and sometimes a restraint on the wicked; therefore whoever would argue or laugh it out of the world without giving some equivalent for it ought to be treated as a common enemy.

My daughter Lucy Imrie points out that we all have many experiences that we need to understand and fit together with our other mental constructs. Most of our emotional, practical, and social life is lived on the basis of intuition, imitation, and rule of thumb. There is little scientific knowledge that applies, and rigorous experimentation is not often possible in daily life. Since science doesn't really help us with these personal matters, we come to hold certain beliefs that while not testable, seem to be true for the individual. Most people are quite comfortable with this ad hoc arrangement of their reality.

Trouble arises, Imrie says, when people treat such personal beliefs as if they were true in the sense of being tested and supported by evidence, that is, true for everyone. Some religious believers want to impose their personal faith on the larger society, which leads to intolerance and sometimes violence. This is a perennial difficulty. As Rabbi Abraham Joshua Heschel said, "The problem to be faced is: how to combine loyalty to one's own tradition with reverence for different traditions."

While these deeper issues are not our subject here, several aspects of faith and religion do concern us in terms of straight-thinking.

Is It Faith vs. Reason? A critical thinking website notes that since a person believes in one religion rather than another, this implies that good reasons exist for making this choice. "In some sense, then, everyone has confidence in the capacity of his or her own mind to judge rightly on the basis of good reasons, and does not believe simply on the basis of blind faith."

However, people often contrast faith with reason, both of them being sources of authority for one's beliefs. According to The Internet Encyclopedia of Philosophy, faith "involves a stance toward some claim that is not, at least presently, demonstrable by reason. Thus faith is a kind of attitude of trust or assent." Then the key philosophical issue with reason and faith is how they

interact in the process that justifies or establishes a religious belief. There are several possible models including these two:

One may view reason and faith as rivals, with similar aims, objects, or methods. This is the model used by religious fundamentalists, who resolve the conflict in favor of faith, and of scientific naturalists, who resolve it in favor of reason. For instance, Richard Dawkins has said, "I think religion is bad science."

A second model of reason and faith interaction sees them as distinct compartments of life, without any rivalry between them, and with dialogue possible between them. Christian denominations that are more liberal or non-fundamentalist usually adopt this basic model. Some scientists see no necessary conflict between reason and religious beliefs. Even Dawkins says "the question of the moral or consolation value of religion must be kept separate in our minds from the truth value of religion."

Those groups that have adopted the conflict model of the relationship between faith and reason will obviously keep butting heads. Fundamentalists have developed a good deal of political power for this battle. A disturbing overtone is that many religious fundamentalists seem ready to throw out not only evolution but all of science, the scientific method, and the faculty of reason itself. Meanwhile, some scientists and skeptics such as biologist Richard Dawkins tend to identify all religious or spiritual beliefs with their most ignorant and belligerent adherents, thus becoming, in their turn, somewhat orthodox and dogmatic.

Defining Religion: We live at a time when faith is politicized and many politicians claim to be uncommonly devout. One problem concerning the term faith is its current use in the political sphere to mean religious organizations. Apparently, the engineers of political euphemisms realize that many U.S. citizens would not approve of giving tax dollars to sectarian religious organizations except for the favorable associations attached to 'faith.' My personal frame for the word 'faith' includes Norman Rockwell images of sincere people with hands folded in prayer. In contrast, my frame for 'religious organization' includes offices and accountants and a man at a microphone before a large crowd. The current use of the word 'faith' to replace 'organized religion' obscures some vital distinctions.

Organized religions are sometimes very imperfect expressions of the human search for meaning or the religious impulse. Large denominations have bureaucratic traits and a drive toward conformity. Churches may distort the teachings of the wise leaders or saviors they profess to follow. Many religions become authoritarian hierarchies, even tyrannies, in their own governance. They have political relationships with the nations they inhabit, usually supporting the established authorities, and sometimes trying to assume the highest political power themselves. Organized religions may promote violence against those of other religions or their own members who have doctrinal differences. In some cases, organized religions idolize their own sacred books and rituals, even though they profess to be against idols.

While recognizing that organized churches have accomplished much good in the world, let us emphasize that religious organizations are not the same thing as religion or religious faith. A Hindu spiritual leader, Swami Vivekananda, put it this way:

> It is good to be born in a church, but it is bad to die there. It is good to be born a child, but bad to remain a child. Churches, ceremonies, symbols are good for children; but when the child is grown up, he must burst, either the church or himself….The end of all religion is the realization of God.

People belong to churches and attend services for many personal reasons in addition to religious belief. They may want the friendships and community; they are looking for potential spouses or business contacts; they appreciate the benefits of 'fitting in.' There are religious people who do not belong to a defined religion or attend church, just as there are churchgoers who don't take their religion seriously. Even devout members of the same church may have different interpretations of the church's doctrines.

What, then, is a religion? According to the famous sociologist Emil Durkheim, religion is "A unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden—beliefs and practices which unite into one single moral community." In a court case regarding the teaching of Transcendental Meditation as an elective course in New Jersey public schools, Judge Adams of the Third Circuit used the following three criteria to define religion:

1. A religion deals with issues of ultimate concern; with what makes life worth living; with basic attitudes toward fundamental problems of human existence.
2. A religion presents a comprehensive set of ideas—usually as "truth," not just theory.
3. A religion generally has surface signs (such as clergy, observed holidays, and ritual) that can be analogized to well-recognized religions.

Here are other definitions: Huston Smith says that religion is that which "gives meaning to the whole." Joseph Campbell defined religion as whatever puts one "in accord' with the universe. Note that some major religions do not worship a deity. These include Buddhism and Confucianism. The site Adherents.com says that a broad interpretation of religion could include atheism, humanism, and ideologies such as Communism/Marxism/Maoism. One might add to this list such controversial belief-systems as Satanism and white supremacist groups organized as Christian churches, such as the Creativity Movement and Christian Identity.

There is, however, at least one possible qualifier in defining religions. Almost all world religious groups as well as non-theistic ethical systems, from Animism to Zoroastrianism, express belief in some version of the Golden Rule—an *Ethic of Reciprocity*. In this sense, we could consider the Golden Rule in any of its many versions as a basic tenet of all religions, even more universally held than belief in a deity. However, Satanism and white supremacist religions explicitly do not believe in the Golden Rule. Instead, according to religioustolerance.org, they have an ethic of non-reciprocity. If one were to use the Ethic of Reciprocity as a criterion to define religion, then Satanism and white supremacist religions would not qualify, nor would the other ideologies mentioned unless they included such an ethical position.

Are cults also religions? The term cult' is used in a negative way to describe small groups with novel and unorthodox beliefs and practices, usually with charismatic leaders and a hierarchical structure. They are accused of brainwashing their members and sometimes of leadership corruption and abuse of minors. Several recent U.S. cults have involved mass suicides. However, many present-day religions could have been described as cults at one time, and even today one could accuse some large mainstream religious groups of brainwashing, leadership corruption, or abuse of minors.

Most of the major religions and religious leaders speak out against violence and war, but they have not been able to stop the violence since the medieval Truce of God. Certain small Islamic sects condone terrorist tactics in the name of religion. Christian nations and entities of an earlier period also used terror in the name of religion (massacre of heretics, the Inquisition, pogroms of Jews). Only recently has the opposition of Protestants and Catholics simmered down in Northern Ireland. Hindus and Buddhists are not immune from unworthy actions in purported defense of

their religions. At one time or another, most of those in religious conflicts with others have not hesitated to employ tactics completely at odds with their professed religions and highest values.

The site *Adherents.com* also points out that passages in the Holy Books of many religions contradict their own Ethic of Reciprocity. One can certainly find such instances in the Old Testament, including scenes of carnage in which armies of Israelites destroy innocent civilians with Jehovah's approval or guidance. The Book of Joshua contains a number of these occurrences. They totally contradict Jesus Christ's teaching of the Golden Rule in the New Testament.

Faith-based Organizations

A tyrant must put on the appearance of uncommon devotion to religion. Subjects are less apprehensive of illegal treatment from a ruler whom they consider god-fearing and pious.
Aristotle, 384-322 B.C.

It would seem necessary for the government to define religion before supporting 'faith-based' organizations with public funds. For instance, Operation Blessing, Pat Robertson's charity, reportedly used some of its relief airplanes to ferry diamond-mining equipment in and out of Zaire, where Robertson did business with Zaire's leader. Nevertheless, Operation Blessing received $1.5 million in taxpayer funding through the White House Office of Faith-Based and Community Initiatives. The public discussion to define religion has not taken place mainly because the religious and political leaders promoting these measures have a limited and exclusive notion of religion: conservative Christianity.

David Kuo, a former top official in the Office of Faith-Based Initiatives, recently published a book about his experiences. In *Tempting Faith,* Kuo complained about funding shortfalls that prevented religious charities from helping the poor, claiming that the Office used taxpayer funds mainly to mobilize religious voters in twenty targeted political campaigns. Another piece of information to take into account is that according to self-identification, those who are non-religious/secular (13%) form the third largest single 'denomination' in the United States, after Catholic (24%) and Baptist (16%). The secular 'faith' holds about the same position worldwide, with greater percentages in some countries such as Sweden.

Faith and Evidence: A third area of difficulty concerns the relationship and possible antipathy between faith and evidence. Faith, according to one definition is belief without proof, but that definition may be misleading. Evidence is not the same thing as proof. In the legal system, evidence must pile up and meet certain standards before it ever becomes proof (and even then, the system convicts some innocent people). For scientists, the results of one or many experiments do not constitute 'proof' but rather an increasing probability. Unfortunately, in daily life people often use these two words 'evidence' and 'proof' as if they meant the same thing. No one demands absolute proof for everything he believes or on which he acts. Such rigidity would paralyze us.

For many people, their religious beliefs are not in opposition with scientific evidence or the evidence of their senses. Others hold their 'faith' as an all-encompassing belief system that supersedes any other form of knowledge. In terms of the focus here on discovering our thought processes, the most disturbing effects of some people's faith in a system of religious beliefs or some other ideology occur when tenets are strongly held not only despite lack of evidence, but also despite a good bit of contrary evidence. Then cognitive dissonance forces the true believer

into denial and avoidance of anyone or anything that contradicts any part of his doctrine or ideology—or it may be that cognitive dissonance drives him to compel others to his belief.

In practice, some individuals may hold faith not so much in the doctrines themselves, as in their current interpretation by the local authority figure, whether minister, priest, rabbi, imam, guru, pundit, politician, radio commentator, or cult leader. "Ditto-heads" or brainwashed followers, those who abdicate their own reasoning abilities in favor of such authority figures or charismatic leaders have given up a large chunk of their humanity or one could say, of their God-given powers of reasoning.

Faith and Morality: Family Values. A fourth concern is morality, which religious groups define or frame in different ways: some focus on sexual morality while others emphasize charity and tolerance, or peace and justice. A particular religion may present itself as the sole creator and arbiter of moral values. Certain fundamentalist groups attempt to 'own' morality even ahead of other sects of Christianity, while assuming that secular people could not possibly have any moral values.

However, there are many indications that religions are not the original creators of morality, but rather that they refine, codify, teach, and enforce morality. They put their seal of approval on existing values, many of which appear to be inborn. For instance ''family values" ultimately have to do with raising children, and are in some sense shared with other mammals (and birds) especially the more complex and intelligent ones. No religion is needed to tell animal mothers (and in many species fathers) to love their children, nourish them, and protect them from harm. Possums, robins, and impalas can do this without holy books or sermons (or laws).

The family unit in mammals may consist of the mother and offspring, perhaps also some half-grown offspring; it may include both parents; or there may be helpful "aunties" as with elephants and whales. In whatever way the family unit is constructed, its adults are dedicated to nurturing offspring to the point where they can fend for themselves.

In addition, several species such as chimpanzees, dolphins, and elephants show concern for their sick and dead. Researchers on a Kenyan game reserve watched elephants from five families pay their respects to a fallen matriarch. Some animals may display altruism across species. Many cultures have stories about dolphins that helped humans in danger of drowning. Researchers and charities have set up several programs in the U.S. where ill and disabled children and adults can swim with dolphins. They claim dramatic therapeutic effects for the humans.

Faith and Morality: Murder. Another almost universal value even among other species is the prohibition against murdering one's own kind. Animals may fight about territory and mates, but usually the fight ends before it is fatal. Primates are more violent than most animals, however. According to Stanford biologist/neurologist Robert M. Sapolsky, some primate species are savagely aggressive, killing each other's infants or using tool-making skills to fashion bigger cudgels. "Some primates even engage in what can only be called warfare," says Sapolsky.

However, this is not the whole picture. Field studies have found great variation among primate species. While baboons and rhesus monkeys are violent, gibbons and marmosets are not. In the less violent species, females and males tend to be of similar size, males lack long, sharp canines, couples mate for life, and males help with child care.

Our evolutionary cousins the chimpanzees, with whom we share 96 percent of DNA, are fairly violent. Observers have often seen them engage in murders and organized group violence against other chimpanzees. Yet there is another chimpanzee species to which humans are equally

related, the bonobos. The bonobos are a small and threatened group that lives in remote rain forests, and they are very different from the better-known chimps. Bonobos are not heavily muscled like species that fight a lot. Their social system is female dominated. They often share food. Most notably, bonobos make love instead of war. Says Sapolsky:

> Bonobos have sex in every conceivable position and some seemingly inconceivable ones, in pairs and groups, between genders and within genders, to greet each other and to resolve conflicts, to work off steam after a predator scare, to celebrate finding food or to cajole its sharing, or just because. As the sound bite has it, chimps are from Mars and bonobos are from Venus.

Even among highly aggressive species such as the savanna baboon, the picture is not totally one-sided. While dominant males have to fight to attain their rank, Sapolsky says "maintaining dominance requires social intelligence and impulse control—the ability to form prudent coalitions, show some tolerance of subordinates, and ignore most provocations." Also, females often have trysts with less aggressive males who follow a strategy of "affiliative relations" with the female such as grooming her and helping with child care. Thus their genes get passed along too.

One remarkable development came after a group of savanna baboons lost half of its males to a disease they contracted on a raid against another troop of baboons at a tourist garbage dump. The males left in the troop were the less aggressive ones. That fact along with the predominance of females resulted in a very different baboon society that has lasted for twenty years. High-ranking males seldom harass their subordinates or take out their aggression on third parties, as so often happened before. There is a whole lot more grooming, even the new behavior of males grooming other males. The new benign culture persists although all its current males immigrated into the troop as adolescents from elsewhere.

Professor Sapolsky says that other new studies do not support the pessimistic notion that human-on-human aggression is hard-wired into us as primates. Primates are not all alike. We are just as closely related to the bonobos as to the chimpanzees. And even savanna baboons, who are very distant relatives, can change their culture towards nonviolence.

As for prohibiting violence against our own species, we humans are only partway there. The ancient rule against murder surely goes back many thousands of years before the Decalogue. Nevertheless, even today murder as a crime tends to be surrounded by exceptions and justifications, for instance: war, capital punishment, self-defense, repelling intruders, insanity, and in some places, a husband's rage at finding his wife in the arms of a lover. Especially in war, one group of humans will dehumanize its opponents so that the definition of murder does not seem to apply when killing them.

In another exception to the rule against murder, infanticide was once widely accepted and practiced in Europe up into the nineteenth century although often disguised by the customs of wet-nursing (certain wet-nurses were noted for the fact that few infants survived their care) and foundling hospitals (ostensibly to care for the abandoned children of the poor, of whom a great number died in the foundling homes). Abortion, which some people consider equivalent to infanticide and thus to murder, is currently legal in about half the world.

Note that one can cause another's death without murdering him outright, which might be called a version of manslaughter. Those who consider themselves good or god-fearing people have often forced others to work for them under conditions that led to many deaths from overwork, toxic conditions, or disease. Forced labor camps and slavery are but the most flagrant examples of this. People have charged exorbitant rents or evicted people from farms their

families had worked for generations, leaving them to starvation. Several hundred years of enclosure in England had just this effect.

In their capacity as business managers, humans have dumped poisonous wastes into the common drinking water or failed to inform the public of toxic ingredients in consumer products. They have been careless about safety regulations in dangerous occupations such as mining. Since the beginning of the Industrial Revolution in England there have been millions of child laborers across the world, not only deprived of a childhood of play and schooling but also of a long and healthy life.

Another way to kill yet avoid the charge of murder is for governments to fund a proxy army to operate in a foreign country. Those who support the proxy army are removed from any atrocities that might occur. Yet another example is what might be called passive murder or malign neglect: the millions of deaths of children in poor countries from malnutrition and preventable disease. Many of these deaths could be avoided by low-cost measures equivalent to what people in wealthy countries spend on trivia.

"Love Thy Neighbor" is a powerful statement of the human tendency to help other people, especially those recognized as part of the same group. Scientists have analyzed possible ***animal origins of human altruism***. Robert Trivers' theory of "reciprocal altruism" suggests that much of our sense of right and wrong is biologically based

For example, a very basic aspect of morality is food-sharing. Not only do most mammals and birds feed their offspring, but many adult animals share food by communicating the location of food sources to each other. Such behavior has been observed in Capuchin monkeys, vampire bats, chimpanzees, meerkats, naked mole rats, humpback whales, bottle-nose dolphins, and even ants and honeybees. Also, the African honeyguide bird leads humans to sources of honey, and some dolphins have cooperated with human fishermen.

Simply observing household pets I have seen many behaviors related to empathy, altruism, and reciprocity. For instance, dogs when playing with other dogs which are young or smaller will usually 'pull their punches' and not play as roughly as with adult dogs their own size. If you have two pets of whatever species, and give a treat to one but not the other, the deprived one displays an emotion that looks very much like indignation at injustice. This basic idea of fairness as equal treatment arises very early in childhood as well. Psychological tests of children show an innate sense of fairness that begins to unfold about age four. From observing children, I see this trait manifest even younger. For instance, some three-year-olds can learn to take turns. Even younger children will comfort others who are crying. One study found that the capacity for altruism can emerge in children as young as eighteen months.

Frans de Waal and other primatologists maintain that we can see the roots of human morality in social animals such as apes and monkeys, who demonstrate empathy and *expectations of reciprocity* (as in the almost universally human Ethic of Reciprocity). Harvard biologist Marc D. Hauser, building on the ideas of de Waal and others, proposes that humans have an inborn moral grammar, developed through evolution. In his book *Moral Minds*, Hauser says that the subconscious makes moral decisions of which the conscious mind is not aware. Then people come up with rationalizations for why they did what they did. Hauser found that people of various religious faiths as well as atheists make the same moral judgments. This implies "that the system that unconsciously generates moral judgments is immune to religious doctrine." Hauser says this moral grammar probably evolved among hunter-gatherers by 50,000 years ago.

Experiments in game theory suggest how cooperation may have evolved. A game called "Prisoner's Dilemma" shows that if both players play selfishly, neither wins. If they agree to cooperate, both will win, over time. If one player poses as a cooperator, but cheats, he will win in the short run but lose in the long run, because the "suckers" retaliate. The long run is what counts for the species.

Julia Whitty describes another game theory experiment. An American-Swiss team of scientists ran a "public goods game" in which all the players were supposed to donate money to the pot, which was then divided up equally and returned to the players. If one player cheated, all members of the group got less. Playing one to one, the cheaters always beat the altruists. However, the scientists then changed the game, dividing players into small groups that played among themselves. After 100,000 generations of this small group play, the cooperators overwhelmed the cheaters. According to one of the scientists, this is because cooperators thrive in small groups where their investments pay off (and where reciprocity is easier to see). Given enough time, their memes or genes win the day.

Many other creatures that have been around a long time (equivalent to 100,000+ generations of "play") develop the same *obligate cooperation.* This altruistic strategy of cooperation lends stability to the species, enabling individuals to survive under conditions they could not overcome individually.

Many values rather than being hard-wired may have arisen through countless generations of human experience. We could refer to Robert Fulghum's list of the wisdom he learned in kindergarten (*Everything I Know I Learned in Kindergarten):*

> Share everything. Play fair. Don't hit people. Put things back where you found them. Clean up your own mess. Don't take things that aren't yours. Say you're sorry when you hurt somebody….When you go out into the world, watch for traffic, hold hands, and stick together.

In the kindergarten of the human race we learned the value of group cooperation and nonviolence, as well as ecological wisdom such as leaving things the way you found them and cleaning up your own mess. Other early ecological wisdom was "Don't kill all the game...or eat the seed corn."

The learning of values was aided by the wisdom of the group's spiritual leaders whether shamans, elders, or priests. Eventually there were also outstanding leaders of this kind who are known to us by name and whose ideals and practices often became world religions, such as Jesus, Buddha, Socrates, Lao-tzu, and Confucius. (The last four, along with the philosopher Pythagoras, were almost contemporaries in the fifth century B.C., which we might call the First Age of Enlightenment.) However these great spiritual leaders did not invent their moral wisdom out of whole cloth. They were preceded by countless, anonymous others.

Our ancestors discovered human values that had to do with living in community, thus the many versions of the Golden Rule, or Ethic of Reciprocity. For countless generations of hunting gathering life, people had lived in small, extended-family groups. When humans began to live in towns and then cities, they were thrown together with far more people than they could know personally. Living in large groups with many strangers was new and stressful, and new folkways were required. A similar process is happening today with globalization and migrations. It will continue as global warming produces large numbers of environmental refugees. We need outstanding moral leaders to help people cope with the stresses of society's increasing diversity and mobility.

Scientists can help us understand the workings of morality. Religious or moral leaders can reinforce the natural tendency of people to cooperate and to trust that others will cooperate as well. We need both science and religion to interpret novel situations that arise because of new technologies, depleted resources and increasing pollution, and new forms of social interaction.

What Sources Do You Believe?

Don't ask the barber whether you need a haircut.
David S. Greenberg

Far too many people want to believe something just because it is in print, on the air, appears on the Web, or even because their neighbor says he saw or heard it in one of those places. "Seeing is the same as believing" no matter whether the source is real or virtual. Jerry Mander points out that we humans inherently believe the evidence of our senses, because we are wired that way from millennia of experience:

> Whatever information the senses produce the brain trusts as inherently believable. If the sense could not be relied upon, then the world would have been an utterly confusing place. Humans would have been unable to make any sensible choices leading to survival…This belief in sense perception is the foundation, the given, for human functioning….Only since the ascendancy of the media has this been opened to question.

In our "Information Society," the majority of Americans get their news from television, and long evolution predisposes us to believe the sense images we see there. We need to be very aware of the hypnotic nature of television, and also to evaluate all sources of information, whether they are other people, newspapers, broadcast media, the Internet, or books.

One consideration for this evaluation is whether the source is primary or secondary. Primary sources are eyewitness accounts by people who have seen or participated in certain events, or videotapes of those events. Secondary sources rely on primary sources or on other secondary sources. Eyewitness accounts are preferable in many cases, especially if we know and trust the eyewitness; but sometimes individuals don't have the knowledge to put their experience into context. Photographs and videos can be doctored. Also, untrained eyewitnesses often give unreliable accounts. A secondary source that collects a number of eyewitness accounts may be more reliable than one primary source.

It is important that your source identify *his* sources.

Second, find out if the person who published or broadcast the facts has any professional background in the subject. In general, those who have studied or concerned themselves with some area of knowledge are better sources of information. Even so, no single expert is sole authority concerning any subject, since even experts disagree. There is also an expertise in gathering facts, as with trained journalists or scholars.

Third, does your source have any vested interest in the matter? (As the barber has a vested interest in your haircut). Some sources may have financial interests; for instance, a scientist may have received grants from a certain industry related to the issue on which she comments. Other sources may have strong ideological biases. Yet it is possible to allow for and overcome one's own biases to a large extent—that is what critical thinkers learn to do.

Fourth, it is always necessary to judge the fairness of a source. It does not take a college education to know that political adversaries and competitors, or former spouses, lovers or mistresses are not highly credible sources.

It is impossible to find a totally neutral or objective source of information, yet several professions have at least an aim or ethic to be as fair and impartial as possible. This is what we expect of journalists, judges, scientists, and scholars, among others. Take care in choosing your authority, if you really care about the facts of the case. The best plan is to look for a broad range of sources.

Mainstream Media (MSM)

Where the press is free and every man able to read, all is safe.
Thomas Jefferson, 3rd president of the United States

We now come to the embattled mainstream media. Until recent decades, most people accepted the relative neutrality of daily newspapers, wire services, and broadcast news. However, right-wing partisans, starting with Nixon's Vice President Spiro Agnew, have constantly attacked daily newspapers and network television as biased toward liberal views. As a consequence, some conservatives will not read, view, or trust any media that they do not regard as 'their own' such as Fox News or the *National Review* (which is a magazine of opinion rather than news). They express special distrust for the *New York Times* and the *Washington Post*, both of which are large, nationally known newspapers that carry a spectrum of opinions by columnists and a great deal more news of all sorts than do the favored sources of conservatives.

In fact, during the G.W. Bush administration, some conservatives made the *NYT* into a scapegoat. Right-wing media celebrities made 'jokes' suggesting its building and staff should be targets of violence. This is not funny because many real newspapers and journalists, especially in authoritarian countries, have been actual targets of bombings, arrests, and killings.

Ironically, over the same time-period, liberals and progressives increasingly perceived right-wing bias in the mainstream media, even including the venerable *NYT*. For instance, *Times* reporter Judith Miller wrote many front-page stories prior to the Iraq War supporting the theory that Saddam Hussein had a formidable stock of WMD. Later it developed that Miller had relied on sources that were not credible, mainly Iraqi exiles. The *Times* apologized for giving Miller's stories such prominence, but the damage was already done in terms of swaying public opinion.

Some individuals say they don't believe anything in the *NYT* or, conversely, in *The Wall Street Journal*, because of its bias. But in both cases, the bias is in editorials and columns while the newsgathering staff is professional and relatively objective in its coverage. To reject such a source completely is commiting the *genetic fallacy*, which a Logical Fallacies site explains:

> Even from bad things, good may come; we therefore ought not to reject an idea just because of where it comes from, as ad hominem arguments do. Equally, even good sources may sometimes produce bad results; accepting an idea because of the goodness of its source, as in appeals to authority, is therefore no better than rejecting an idea because of the badness of its source. Both types of argument are fallacious.

Rather than drop comprehensive sources such as the *New York Times* and the *Washington Post*, liberals are more likely to add information from other sources to balance out or comment on any bias. Present-day conservatives tend to eliminate information sources, reducing the

spectrum of views they draw from. Restricting one's range of information sources only to those with whom one agrees violates a basic rule of critical thinking.

Another problem arises when a person overestimates the comprehensiveness and lack of bias in his chosen news sources, or perhaps the thoroughness of his own news-seeking. He falsely assumes that if an Islamic religious leader denounced terrorist violence, if a member of Congress said something wise and far-seeing, or if a poll showed that a large number of American soldiers wanted the U.S. to leave Iraq within a year, he would certainly have heard about it on the news. Therefore he feels justified in making generalizations such as "Islamic leaders never denounce terrorism," or "The whole Congress is entirely corrupt and useless," or "Our troops support our policy in Iraq."

Aside from politics, professional people often limit their professional sources to literature from their own organizations and their own country. With reading time often limited by the press of business, a physician, for example, may not show interest in medical findings from abroad or any approaches that come from outside her medical training or current medical practice. This kind of self-restriction leads to a sometimes sterile orthodoxy in one's professional field.

Newspapers vs. television vs. Internet: Currently there is strong competition between the different kinds of news media, with newspapers competing for readers and advertisers with cable, satellite TV, and the Internet. Newspapers appear to be losing out. While newspapers are still profitable, it is not enough profit for some stockholders who want big payoffs. These problems are disturbing because historically, newspapers have been the most likely to conduct investigative journalism. The second book in this series will look more closely at media, its concentration in the hands of a few powerful corporations, and the urgent need for media reform.

In the meantime, consider these advantages of getting news from newspapers and news magazines over getting it from television. First, printed news is more in-depth, with greater detail. Second, you can re-read it to make sure you remember the facts, whereas you might have missed or misheard an item on television news and cannot check it out again. You can keep a clipping from the newspaper, or check a recent issue in the library. It is somewhat amazing to see how quickly information disappears down the collective memory hole.

Third, with printed news you can compare one source with another to determine bias. That would be especially hard to do while watching network news because news programs are on at the same time. With newspapers you can go back into the files and compare an earlier story with a later one. PBS news programs have websites with transcripts.

Fourth, television is a "hot" medium which means that the images affect you emotionally before you are able to engage your rational mind. The same immediacy that unites a single species in watching a tsunami, an assassination, a hurricane-ruined city, starving people in a refugee camp, or massive demonstrations against a tyrannical government, can also purvey propaganda. Editors select which images to show, and can even show fictional events that seem real. I would not suggest that you ignore the coverage of significant events but that you remain a critical viewer. Certainly it would be better to avoid trivialized news.

The Internet has the advantage of allowing you to access and compare a number of news sources. For instance, you can compare reports of the same event by different wire services such as AP, Reuters, and Agence France Presse, also BBC and the *New York Times*. One advantage of getting news from the Internet is that you can access the foreign press, which would otherwise be almost impossible unless you live in a large cosmopolitan city. Many important events covered

abroad are neglected or, some would say, censored in the U.S. media. For instance, the Downing Street memos were big news in the UK but barely mentioned in the U.S. Other events that are widely discussed on the Internet do not get any mention in the U.S. media or are dismissed there as "conspiracy theories," such as the many reports of possible fraud in the 2004 presidential election, especially in Ohio.

However, many people are still attached to the news services that agree with their prejudices and prejudgments, even on the Internet.

Be Open to Ideas. Finding authoritative sources of data and looking for opinions are two different matters. When it comes to ideas rather than information, it is best to remain open to new thoughts no matter what their source in order to examine a range of opinion. Sometimes good ideas come from the most unlikely people. Possibly it is the only wise thought that they have had in their lives, but there it is, their pearl. In many cases, the novel idea is a minority view, a dissenting opinion; and sometimes it is simply ahead of its time. Carol Wekesser points out that Socrates, Jesus, and Galileo held unpopular opinions in their day:

> It is important to consider every variety of opinion in an attempt to determine the truth. Opinions from the mainstream of society should be examined. But also important are opinions that are considered radical, reactionary, or minority as well as those stigmatized by some other uncomplimentary label [such as conspiracy theory].

For some people, *the King James Bible* is the most authoritative source to answer a wide variety of questions. However, people who are not terribly familiar with what is actually in the Bible often cite it to support their own beliefs and prejudices. Alabama State Representative Alvin Holmes offered $5,000 to any constituent who can find a Bible verse that defines marriage as between one man and one woman. So far, he says that none have been able to do so.

Whether or not one cites chapter and verse, there may be problems of interpretation, or the passage may not be relevant. The minister of a mega-church in a recent television interview said flatly that the Bible forbids stem cell research. Since this type of medical research was unknown two or three thousand years ago, it is hard to know what passage or passages could *literally* apply. Evidently, the minister's interpretation equates stem-cell research to abortion, but the Bible has no specific prohibition of abortion either.

An example of someone who is disseminating the Bible but lacks close acquaintance with its contents is an audio-book entrepreneur who is producing a word-for-word dramatic reading of the Bible by Hollywood stars such as Jim Caviezel. It will eventually fill 70 CDs. He is still seeking a star to play Satan "because," he says, "Satan has some of the best lines in the Bible." I double-checked with a friend who has read his Bible from cover to cover. He agreed that Satan has *no* speaking lines, unless you equate him with the Serpent in Genesis and his few sentences. It is often said that the Devil has the best lines in John Milton's famous seventeenth-century poem *Paradise Lost*, so that may be the source of this confusion.

Christian Fundamentalism historically arose largely in opposition to modern Bible scholarship. Many conservative Christians, like Americans generally who know so little of other languages, do not understand what it entails to translate a text from one language to another, or what a specialized skill it is. There is frequently no exact correspondence of one word or concept for another, and this is particularly true of texts from the ancient world. Some people are not aware that the Bible was translated into English from Hebrew and Greek texts, sometimes two

translations away from the original. Nevertheless, there are raging controversies about which version of the Bible is best and why.

The King James Bible was a revision of Tyndale's translation published much earlier in 1525. Tyndale had the bad luck to run afoul of the Church and was strangled and then burned at the stake for 'heresy.' By the time of King James, England was Protestant, and James proposed a new translation. At least 80 percent of the King James New Testament is the same as Tyndale's translation.

However, a King James Only movement began with the Revised Version (RV) and again when the Revised Standard Version was published in 1952. Many fundamentalists and conservative Christians reject the RSV and later translations. Some of them believe that the King James Version (KJV) was divinely inspired, or even a new revelation. One advantage of the KJV is that it is easier to read according to a common grade level formula that places it within a 5th-grader's ability while the most frequently used translation today, the New International Version, is rated at the 8th-grade level

The Bible in all its versions has many contradictory passages. Several books list hundreds of contradictions which one need only check out in one's own Bible. For instance, in Genesis 7:2, Noah is told "Of every clean beast thou shalt take to thee *by sevens*, the male and his female; and of beasts that are not clean by two, the male and his female. Then in Genesis 7:8-9 Noah is told "Of clean beasts, and of beasts that are not clean, and of fowls, and of every thing that creepeth upon the earth/ There went in *two and two* unto Noah into the ark, the male and the female, as God had commanded Noah."

Another difference is between the version of the Ten Commandments in Exodus 34:28 and the other two versions in Deuteronomy 4:13 and 10:4. The Exodus version is largely about dietary rules and observing holy days rather than the more commonly printed list emphasizing moral rules. Exodus contains only three of the more familiar commandments.

In one modern book, four conservative Christian biblical experts argue about the morality of divorce and remarriage. Each author believes his views are biblically correct, yet their beliefs are mutually exclusive. The publishing house Zondervan has published a series of book about fundamental Christian beliefs, in which leading evangelical Christians argue opposing viewpoints that are all derived from the Bible.

Chapter 9: Ancient Grooves

By education most have been misled;
So they believe, because they so were bred.
The priest continues what the nurse began,
And thus the child imposes on the man.
John Dryden, 1631-1700, "The Hind and the Panther"

We are each and all of us to some extent victims of habit neurosis.
William James, American psychologist and philosopher, 1842-1910

There are patterns of thinking (memes?) that run in especially deep and ancient grooves. Some are centuries or millennia old. Some of them are shared with other creatures and likely hard-wired in us *as a potential*, such as xenophobia. One old groove is unthinking acceptance of the status quo (**What Is, Is Right**.) Humans have a strong tendency to cling to what they know and to suspect the new and novel—a tendency that resembles the wariness of wild creatures. This natural conservatism has its up-side as well as its down-side. We first consider the precautionary principle and conservation as essentially conservative ideas. Then we look at the down-side, which is an unthinking, dogmatic resistance to any new idea. Last, a few words about cultural and political conservatism.

While peoples with different appearances and cultures met, mingled, and sometimes fought from time immemorial, the modern notion of **Race** dates back about five centuries to European explorers and the beginnings of colonialism. Racism followed soon after. If you want to make people subservient or steal their land, it calms your conscience to think of them as belonging to an inferior race. There is also the ancient tendency to find that those who are different are necessarily not as good. One of the ideas that has been used in trying to overcome the inequalities resulting from racial (and other forms of) discrimination is affirmative action, or reverse discrimination. Although many nations have put such plans into effect, it is very controversial in the United States.

Similar to the individual's tendencies to blame and to project his own impulses and shortcomings on others, or to "kick the cat," it is ancient practice for the community to pick out certain members of the group to be feared, hated, or sacrificed (**Demonology**, **Scapegoats**).

Xenophobia or fear of the stranger is likewise a very old, even pre-human tendency that is still with us. A major focus of today's xenophobia is immigration, particularly in the United States, Europe, and Australia. Although the United States was built upon successive waves of immigration, we have experienced repeated resistance to the newest immigrants—whether nineteenth-century Irish or twenty-first century Hispanics—from those already here. Even the pre-Revolutionary settlers who came from different parts of England, with different folkways, did not get along well with each other. They might not have joined together to free themselves from the mother country except for the fact that the English monarchy was becoming very oppressive to all of them.

What Is, Is Right

Conservatism is "adherence to the old and tried against the new and untried."
Abraham Lincoln

First, considering conservatism in the broad, non-political sense, let us look at its advantages, which are considerable. Most humans most of the time are conservative. We have our routines, our rules of thumb, our homes, families, jobs, friends, schools, churches, and cherished things, our customary easy chair and favorite dessert. Most of us most of the time think that things should stay the way they are unless there is a very good reason to change. If some product I use all the time suddenly disappears from the grocery store, I am upset, and likewise if I see somebody tearing down a perfectly good house to make a parking lot.

Even radical revolutionaries live very much like the rest of us, and it is observed that when revolutionaries come to power, they often do not change things all that much. For instance, the Iranian revolution that overthrew the Shah did not dissolve Savak, his hated secret police, but only changed its name and executed its top officials.

Very few of us travel constantly, improvising and living by our wits, without personal attachments—existing like a vagabond or picaresque hero. Gypsies (Romany) may travel a lot but they have close extended families. Even James Bond has a job, a boss, and a *modus operandi* or M.O.—his standard operating procedure as a secret agent. Those people who do live on the run are usually refugees, displaced people who did not choose such a lifestyle and are quite unhappy to lack a home, a homeland, and a stable existence.

Our natural conservatism protects us from the consequences of taking risks based on wild and untested notions. **The Precautionary Principle** is the idea that if some action has unknown consequences, but there is a good possibility of major and even irreversible negative consequences, then it is better to avoid that action. While this principle was formalized in 1988 specifically in order to protect us against developing technologies that give indications of being dangerous, the basic idea is ancient and commonsense. For instance, my mother told me as a kid not to eat any kind of berries unless I knew for sure they were edible. Mushroom hunters get similar advice.

The ancient Greek physician Hippocrates made this his basic rule: "First, do no harm." Folk wisdom has a great many other ways to give the precautionary message: "Look before you leap," "Don't out-drive your headlights," "A stitch in time saves nine," "An ounce of prevention is worth a pound of cure," and "Better safe than sorry." Charlotte Bronte added her own: "Look twice before you leap."

We have some basic equipment to evaluate the surrounding world to know what is good for us—it is our five senses (actually, there are several more than five). James Hillman links the precautionary principle with our inborn ability to perceive:

> We know instinctively, aesthetically, when a fish stinks, when the sense of beauty is offended. Standing for these moments—and these moments occur each day, within every airless office building, seated in each crippling chair, inundated by senseless noise, and fattened on industrial food—standing for our responses, these aesthetic reverberations of truth in the soul, may be the primary civic act of the citizen, the origin of caution and of the precautionary principle itself, with its warnings to stop, look, and listen.

The precautionary principle as promoted by activists such as Carolyn Raffensperger is part of a larger movement to make science more democratic, to put more decisions in the hands of the people whose lives are affected by them. Raffensperger notes that the precautionary principle basically is to prevent problems rather than try to fix them afterwards. We shall have more to say about the precautionary principle in book 3.

Conservation

> *I think I'm a conservative. I don't think these guys that call themselves "conservatives" really are; these guys are high rollers and plungers and bet-the-farm-on-slender-odds guys. I think a conservative is somebody who cares about conserving the planet and the air and the water and the sky and the sun.*
>
> Stephen Gaskin, author and spiritual leader

Conservationists are people who are conservative about saving large chunks of the natural world, both for the sake of the ecosystems themselves and because they might come in handy some day. A great conservationist, David Brower, said: "The first rule of a good tinker is to save all the parts." The parts, of course, are unique species and ecosystems. While some political conservatives try to frame conservationists as radicals or elitist aesthetes, they are actually the most basic kind of conservatives, trying to prevent the loss of the irreplaceable for human generations to come, protecting our natural patrimony. Conservationists see no conflict between humans and the natural world, quite the contrary.

The same conservation ethic that works to save wilderness and wildlife also motivates those who want to protect the human genome and genetic diversity in general. A similar protective outlook tries to preserve the cultural identity of an indigenous tribe, or the culture of an isolated community with its music or local craft of weaving or wood-carving.

Preservationists are second cousins to conservationists. They would protect certain man-made artifacts. In my own town, constant conflicts involve preservationists who want to save or restore historic buildings, often designed by well-known architects, and preserve older neighborhoods in their original character. These are opposed by developers and others who would just as soon tear down old buildings and put up new ones without regard for either local history, architecture, or community bonds.

Ironically, one of the main things that people do when they travel is to look at old buildings, and not only famous cathedrals or palaces. In a city such as Paris, you see structures in many architectural styles from every century over the last thousand years, an embodiment of their history. There is a story that Hitler sent instructions to his top general in France to destroy Paris—and the general refused to do so. Why did those folks care about their old buildings, while we so often do not? Of course this attitude varies across the United States. For instance people in Rochester, New York tend to restore frame houses from a century ago and the city has a relatively old housing-stock.

Conservatism and the Status Quo

> *There are people into whose heads it never enters to conceive of any better state of society than that which now exists.*
>
> Henry George, American political economist, 1839-1897

People usually prefer to keep the institutions and folkways that they are used to as long as they still work, which is undoubtedly a better survival strategy than jumping on every new bandwagon that comes along. Conservatism does make sense as a basic stance. However, a balance is necessary. In particular, attachment to the social *status quo* can create problems. One may be attached to or tolerate a *status quo* that is clearly unjust but that benefits oneself—or at

least does not threaten one's own situation. "I've got mine, Jack." More generally, stubborn attachment to the status quo can decrease adaptability and thus work against human survival.

In keeping things the way they are, people may confuse the typical with the normal, and the normal with the ideal. Tony Dickerson points out that disease, hunger, poverty, war, rape, abuse, and "long lines at the bank" are all commonplace. That doesn't make them normal, certainly not in the sense of being the way things should be.

The idea also circulates that absolutely everything is just the way it should be. To a certain point, this positive attitude promotes acceptance and good cheer, or staves off depression. It sometimes goes past that point into absurdity. In Voltaire's short comic novel *Candide*, the title character suffers through a number of horrendous events from earthquakes to massacres, while his supposedly wise teacher Dr. Pangloss keeps reminding him that "This is the best of all possible worlds."

Some New Age or Christian statements are almost as vacuous as this 18th century fictional example. One common saying is "God will not give you more than you can bear." This may console some, but it does not describe the tragic reality that people sometimes do have unbearable problems, regardless of their religious faith. This reality is more evident in countries and situations where people lose most of their friends and relatives through disasters, famines, epidemics, and wars. People who go out of their minds with grief, whose hair turns white overnight, who are "never the same person afterwards," apparently do not count in this over-generalization, which promotes acceptance of the intolerable.

Attachment: Conservatism may be expressed as resistance to anything new. 'They' reportedly laughed at Robert Fulton and his first steamboat, and 'they' tend to laugh at and scorn a great many ideas because the ideas are new or simply unfamiliar. The attitude is, unless you are treading water and gasping for breath, why bother to change? This resistance is often laziness, an attachment to habits and routine, and lack of imagination.

In every profession and in our private lives, people grow attached to a certain way of doing things until it seems to take over and becomes the only way to act. You undoubtedly know somebody who has a habit of settling on one way of doing things and refusing to consider any other. Such people identify their ego with their routines and methods. You might call it 'Barnacle Thinking.' It is characteristic of large bureaucracies and certain fixed personalities who find it hard to make changes.

Business columnist Dale Dauten borrows the term "burn-in" from computers, where it means those that carry ghosts of past messages on their screens, and applies the term to people. "With employees of all kinds, and especially with managers, they get burn-in from having repeated themselves so often that the soul disengages." Dauten says with managers, it is bureaucracy that gets burned-in. They start with "I've heard it all," move to "It might work, but we'd never get approval," and eventually to "Just do it the way I showed you." They have decided not to try anything new.

Human attachment to a single way of doing things can be so inflexible that it approaches the role played by instincts in other animals. Back in the Paleolithic, hominids began to make a certain kind of stone axe. The Acheulean industry of stone tool manufacture was widespread in Africa, Asia, and Europe, and the same techniques were in use from about 1,650,000 years ago to 100,000 years ago—about a million and a half years. Apparently, our distant relatives were thinking, "If it ain't broke, don't fix it." (At least they weren't producing any industrial pollution

or greenhouse gases.) Today the pendulum has swung in the other direction, and we are now accustomed to accepting technological changes without considering possible consequences.

We have an attachment to our own concepts, as well. The influential German sociologist Norbert Elias pointed out the tendency (in Western culture) to think in terms of static models. "A great deal of our thinking has strictly conservative ideological undertones [so that] one inevitably tends to think of society as it is, rather than of society as it becomes—has become in the past, is becoming in the present, and may become in the future." Thus we tend to accept what currently exists and forget or repress any knowledge of past conditions as well as the likelihood of change in the future. (That is not the same as living directly in the here and now.)

Over centuries, human cultures tend to persist, for good and ill. David Hackett Fischer in *Albion's Seed* analyzes the folkways of four distinctly different English cultures that came from different parts of the English isles to settle the United States during the seventeenth and eighteenth centuries. Fischer remarks on the persistence of these different folkways even to the present-day. One example of a persistent pattern is economic inequality among the largest group of early immigrants, the 'borderers' who previously lived around the Irish Sea. The Borderlands of northern England and the Scottish lowlands had the greatest degree of economic inequality in Great Britain. Those borderers who had previously migrated to northern Ireland found even greater extremes in the concentration of wealth there, where in some areas one or two percent of the population owned all landed property.

Most of these Borderland immigrants settled in the American backcountry, the frontier of the southern highlands of West Virginia, western North Carolina, Tennessee, and Kentucky. Fischer says it is a myth that the frontier promoted economic equality. The southern highlands were the most unequal of any rural region in the United States, and most men were landless. The top ten percent owned forty to eighty percent of the land. Even two hundred years later, the pattern was much the same. According to Charles C. Geisler, in *Who Owns Appalachia*, published in 1983, the top one percent of owners held half the land in Appalachia and the top five percent owned nearly two-thirds of it. A similar pattern of highly concentrated wealth arose in the areas farther west settled by the Borderland descendants: the lower Mississippi Valley, Texas, and the Southwest.

Cultural Conservatism: In other nations, this term refers to those who want to preserve their own culture and language in the face of outside forces for change. In many cases they are resisting the spread of American culture or of the English language. For instance in Canada, cultural conservatives approve regulations that strictly limit the amount of foreign content on Canadian television and in films, while requiring airtime for Canadian artists. Otherwise, American productions and performers would likely overwhelm the much smaller country of Canada.

Since there are many national cultures and even more numerous subcultures bases on ethnicity, language, or a way of life, such as the Amish, there are many movements and institutions to preserve all of these cultures and subcultures.

In the United States, the term 'cultural conservative' describes a traditionalist who argues for a classical education and against cultural relativism, such as Allan Bloom. Strictly speaking, we should refer to the person who is concerned with moral norms and likely to be part of the religious right as a *social conservative*, but we often use these terms interchangeably. Christian cultural conservatives tend to separate themselves from the larger society and other subcultures to form their own parallel society. Christian cultural conservatives would expand the role of

traditional authorities such as parents and church in transmitting memes, and they try to limit their children's access to horizontal transmissions even from schools and libraries, as well as from media. Often their children are home schooled, or sent to a private Christian school to further this parallel development. In the United States, social conservatives have initiated a number of controversies and political issues that we call the "Culture Wars."

One kind of cultural conservative, although never described that way, we could call a "natural traditionalist." This Green cultural conservatism looks to earlier generations, contemporary traditionalists, and indigenous cultures for sources of 'natural' folkways, and self-reliant, survival techniques that commercial, industrial society has left behind. Traditionalists spread such natural methods using horizontal networks with magazines such as *Mother Earth News*, *Organic Gardening*, or *Mothering* concerned with energy conservation, attachment parenting, organic agriculture, herbal medicine, do-it-yourself tips, indigenous architecture and similar areas of knowledge, or bioregional conferences, to revive and innovate with these older methods and folkways. *The Whole Earth Catalog* was a popular compendium of such information a few decades ago that also included newer technology.

Many such 'natural traditionalists' favor home education especially 'unschooling,' although for quite different reasons than do those more commonly described as cultural conservatives. They favor letting children learn through their inborn curiosity. Having read John Holt, John Gatto, and other critics of mass education, they decry methods such as age segregation, confining children indoors and seated for long periods of time, encouraging competition, discouraging creative thinking, and teaching to the test.

Political Conservatism

> *A state without the means of change is without the means of its conservation.*
> Edmund Burke, the 'father' of classical conservatism, 1729-1797

As a political ideology, conservatism is a hard word to define because it changes from one era to another and from one country to another. In one conception, it has to do with preserving the past, but in other interpretations, it refers to right-wing politics. Although ancient Romans debated conservatism, in modern times classical conservatism was most clearly stated by the English statesman Edmund Burke. He was horrified by the French Revolution, but sympathetic to the American Revolution. Burke distrusted abstractions such as 'Reason' and other such concepts, preferring tradition as a guide. Perhaps we can find some common threads in the following definitions of conservatism by conservatives:

William Safire: "[A conservative is] a defender of the status quo who, when change becomes necessary in tested institutions or practices, prefers that it come slowly and in moderation."

David Horowitz: Conservatism is "an attitude of caution based on a sense of human limits and what politics [can] accomplish."

John Dean: "Most conservatives, in fact, oppose equality, and there is ultimately no clearer underlying distinction between conservatives and liberals than their views on this issue."

Roger Scruton: conservatism is "the politics of delay, the purpose of which is to maintain in being, for as long as possible, the life and health of a social organism."

By tradition, conservatives are capitalists who believe in the invisible hand of the market and a scaled-down government. Arthur Goldwag finds it ironic that conservatives find role models in the revolutionary founders of America "most of whom were classic liberals." However, he notes, "conservatism, like any other ideology, tends to accrue contradictions as its leaders gain real

power." Political conservatives generally tend to emphasize man's imperfect nature, the need for order and tradition, the fallibility of reason, and society as an organic whole.

Conservatism on one hand and liberalism or radicalism on the other, as movements for stability and change form the yin and yang of politics. Ideally, they cover the range of possibilities and balance each other. However, Dean, who regards himself as a traditional or libertarian conservative like Barry Goldwater, finds the current situation very much less than ideal. Dean says that modern conservatism has been increasingly co-opted by authoritarians. Right-wing authoritarianism is quite a different animal from classic conservatism, being more radical than conservative. Dean traces the authoritarian influence back to powerful figures such as J. Edgar Hoover, Spiro Agnew, Paul Weyrich, Pat Robertson, and others.

Psychologists and social scientists have studied political conservatism for over 50 years. In 2003, a group of researchers led by Professor John T. Jost published a paper titled "Political Conservatism as Motivated Social Cognition" that attempted to pull together all the previous research. It was not well-received by political conservatives who then controlled the U.S. Congress and Senate, especially since the research had been partially funded with government grants. Critics felt the study was by its nature biased against the Republican Party, but psychologists define the word 'conservative' to mean someone who supports the status quo and established authorities even in communist governments. The key is supporting the status quo, not the principles on which the status quo is based.

Researchers separated the "stable definitional core" of conservatism from secondary issues that come and go with historical circumstances, such as school busing or welfare reform. They found an ideological core in political conservatism that includes *resistance to change* and also *acceptance of inequality*—because by resisting change one preserves the status quo with all its inequalities. For conservatives, the survival of an institution such as marriage, monarchy, or the market shows it serves a basic human need and should stay just as it is. Conservatives tend to rationalize existing institutions, but especially those that maintain hierarchical authority.

The traits of resistance to change and endorsement of inequality can be tested, measured and correlated with conservative behavior. Another measured trait is *intolerance of doubt or uncertainty*, with a "tendency to perceive ambiguous situations as sources of threat." This need for certainty leads to dualistic thinking styles such as: good vs. evil, stereotyping of both people and issues, and denial of complexity. The fear of ambiguity results in dogmatically sticking with one solution and disregarding evidence to the contrary, with "a tendency to jump to conclusions before sufficient evidence has been accumulated and then rigidly stick with a half thought out solution through thick and thin, while remaining closed to new experiences or ideas."

Researchers found that the trait of *dogmatism* also correlates strongly with political conservatism. One can view dogmatism as an artificial and premature attempt to reach cognitive closure or certainty. The dogmatic approach can also lead to *double think*, defined as "susceptibility to logically contradictory beliefs and denial of contradictions in one's belief system." Some theories explain dogmatism as a fear management response. Fears of death, anarchy, foreigners, dissent, social change, and other sources of uncertainty lead to "a desperate search for any 'firm belief' (cognitive closure) that can bring certainty and safety in the midst of a confusing world."

The Jost team's research suggests that people become conservatives because of their fears: conservatives have a "heightened psychological need to manage uncertainty and threat," says Dean. This added insecurity or need for certainty may be the result of family upbringing that depends heavily on punishment or adheres to a Calvinist fundamentalism that dwells on

punishment in the hereafter. Times of uncertainty, or media and government sources that stress fear and uncertainty, can add to people's fears and thus their tendency to be conservative.

One line of social science research is Terror Management Theory, which tries to explain why people tend to become more conservative during wars and other social catastrophes. In particular, societies usually punish dissidents and nonconformists more harshly during times of war than during peace. This theory holds that the fear of death causes people to defend their cultural worldview more strongly as a buffer against their anxiety, and to be less tolerant of opposing views. Experiments have shown that fear of death can lead to harsher punishment and aggression towards a wide range of people who violate cultural norms.

One political factor not considered here concerns *what it is that a person is conservative about*. For instance, a person may strongly want to conserve the freedoms guaranteed by the Bill of Rights and ancient common law rights such as habeas corpus and the right to a jury of one's peers. In today's political climate, this describes a liberal, likely a member of the ACLU. A person who wants to go slow on technology, or who wants to conserve as much of the natural world as possible is often framed as a radical or a Neo-Luddite rather than as a conservative.

Natural caution may describe the classic conservative, while a deeper set of fears rules the authoritarian conservative. Since most of this research has been conducted in the United States during the years that authoritarians came to dominate the conservative movement, it may better describe modern than classic conservatives. At any rate, the research shows how fear of change and fear of uncertainty, whether temperamental, learned, or manipulated, can lead to illogical thinking and poor problem-solving.

Race: Human DNA is 99.9 percent the same for all human beings. Yet how much trouble we make over that 0**.**1 percent of difference! For over fifty years, most scientists have been saying that race is a cultural rather than scientific concept. For instance, instead of defining race by a few external characteristics such as skin color and shape of noses, we might with more logic divide ourselves into four races based on blood types, which are scattered throughout the populations of what we currently consider to be races. So each of us would be an A, B, AB, or O, depending on the type of antigens carried on our blood cells. Other scientists suggest that size of teeth or resistance to malaria might make more sense, if we are going to divide people into categories.

Another possibility: we might have two races depending on whether members have the lactase enzyme that digests milk sugar. According to biologist Jared Diamond, the lactase race would include Norwegians, Arabians, north Indians, the Fulani of northern Nigeria, and others whose ancestors drank milk from cows or goats. The lactase-deprived race would include other Africans, Japanese, Native Americans, and anybody else whose ancestors did not drink milk past infancy.

If we judged race by height rather than skin color, Africa would have the smallest people, the Mbuti pygmies of the Congo Republic, who average four foot seven inches. They are similar in height to the Negritos of the Philippines, half a world away. Africa also has the world's tallest people, the Tutsi of Rwanda, who live only a few hundred miles from the Mbuti pygmies. Tutsi males average six foot one inches, similar heights to the Scandinavians or Dutch.

Human variation is real, but every trait can become a different way to group people. Simply bundling a few traits together and calling that a race does not work scientifically. "There is no organizing principle by which you could put [six and a half] billion people into so few categories in a way that would tell you anything important about humankind's diversity," says C. Loring

Brace. Another anthropologist, Sherwood L. Washburn says, "I think we should require people who propose a classification of races to state in the first place why they wish to divide the human species."

Since completion of the human genome project, many more scientists are questioning this kind of classification: "Knowledge gained from the Human Genome Project and research on human genome variation is forcing a paradigm shift in thinking about the construct of 'race,'" according to an article in *Nature Genetics*.

Although race is a social construct rather than a scientific one, most of the public still tends to think in terms of the old, unscientific racial classifications, especially 'black' and 'white'—despite the obvious fact that these are not the true colors of anyone's skin. Sometimes the old pigeonholes won't work. Faced with an influx of Mexicans and Central Americans, most descended from a blend of Indians and Spanish settlers, the newspapers tend to call them 'Hispanics' (a language designation) in contrast to other people in the news who are 'Whites' (a supposed racial designation).

Affirmative Action: White people may assume that Blacks began on a level playing field the moment that Congress passed basic civil rights legislation in the 1960s. Some appear to think that Blacks in general now receive more advantages than whites do. It is not clear what all these advantages are, but the underlying fear seems to be that whites will lose out in competition for jobs, contracts, and education. The fact is that despite a few success stories, most Blacks still earn less and die younger than their white counterparts. According to 2005 Census Bureau data, racial disparities in income, education, and home ownership not only have persisted but might be growing. Non-Hispanic white households had incomes two-thirds higher than Blacks and 40 percent higher than Hispanics. Median household incomes were, respectively, $50,622; $30,939; and $36,728.

Dalton Conley, author of *Being Black, Living in the Red*, says that race and class are so interlinked in the United States that the black white gap may not be due directly to discrimination but more indirectly. For instance, many white middle-class families bought homes after World War II because credit access and government programs made it more affordable. Black families, however, did not have this opportunity because of discrimination. We can still see the effects of this difference in home buying, says Lance Freeman, who teaches urban planning at Columbia University. Home ownership creates wealth, enabling families to live in better neighborhoods with good schools and helps families to finance college. "If your parents own their own home they can leave it to you when they pass on or they can use the equity to help you with a down payment on yours."

There are numerous racial disparities in the criminal justice system. For instance, a recent Federal study found that although police are equally likely to pull over black, white, and Hispanic drivers, the blacks and Hispanics are much more likely to be searched and arrested, threatened with the use of force, or subjected to the use of force. The director of a civil rights organization noted that by looking at the "hit rate" for searches, or how many of them actually find a crime, one could demonstrate the degree of discrimination.

White Americans generally do not seem to be aware of the continuing disparities between whites and Blacks. Researchers at Ohio State University asked whites of various ages and geographic regions how much they deserved to be paid for living as an African American, and respondents usually requested less than $10,000. However, to give up television for the rest of their lives they would ask a million dollars. In a different version of the study, participants were

asked to select between being born a minority or a majority in a fictional country called "Atria" and warned of the disadvantages faced by the minority, similar to those faced by black Americans. In this case, respondents said they should be paid a million dollars to be born of that minority. "When you take it out of the black-white context, white Americans seem to fully appreciate the costs associated with the kinds of disparities that African Americans actually face in the United States," according to a co-author of the study, Philip Mazzocco.

One paradox is that if we stopped using the outmoded racial classifications, it could wreak havoc with laws requiring affirmative action intended to help rectify inequities remaining from past racism. There is much opposition by white voters to U.S. affirmative action. Michigan voter recently adopted a constitutional amendment outlawing preferential treatment for minorities in winning government contracts and admittance to public colleges and universities, similar to California legislation ten years ago.

It seems likely that affirmative action measures need new definitions that include class as well as race and gender. Even the conservative writer Dinesh D'Souza supports affirmative action if it is based on socioeconomic status rather than race or gender. James Webb in his book about the Scots-Irish points out that poor Southerners historically suffered from the elitist social structure of the Old South and that economically, poor whites were not much better off than the 'freed' blacks. The South remains today the region of greatest income and wealth inequality.

Many college admission directors are changing their focus to identify low-income students as well as minorities. If we redefined other affirmative action measures by socioeconomic class, to bring in groups such as Appalachians and other poor whites whose families lacked opportunity for generations, the majority might find this fairer. I hope that the current version of the GI Bill is a generous one that applies to all the combat vets from Iraq, whether regular Army, National Guard, or Reservists. The original GI Bill in World War II served as affirmative action for many working-class soldiers who would otherwise never have gone to college. As for gender inequities, a single mother living under the poverty line needs help to start a home sewing business more than does a doctor's wife who wants to start an upscale boutique.

Affirmative Action in Other Nations: To provide some context, the United States is not the only nation that has employed affirmative action (called 'Positive Discrimination' in the U.K.) to give preference to under-represented groups. In India, for example, policies going back a century have reserved a certain number of positions in government jobs and in education for lower castes and minorities. The caste system had disadvantaged certain hereditary groups for thousands of years. South Africa has several broad laws promoting equality in the workplace, advancing non-whites, females, people with disabilities, and those who come from rural areas.

Bosnia-Herzegovina requires that women represent at least 29 percent of all politicians. In Norway, public company boards with more than five members must have at least 40 percent women. Greece has quotas ensuring minimum numbers of women in election lists of political parties. UNICEF notes a fourfold increase since 1995 in the number of countries where the national legislature contains at least 30 percent women including Afghanistan and Burundi as successful examples of introducing quotas during their political transitions. In the Indian state of West Bengal, research found differences between village councils that had reserved one-third or more council seats for women, compared with those which did not. According to UNICEF, "Investment in drinking water facilities was double that of villages without quotas, and the roads were almost twice as likely to be in good condition."

New Zealand gives native Maoris preferential access to university courses and scholarships. Macedonia allocates quotas for access to state universities and the civil service to minorities such as Albanians. The People's Republic of China allows non-Han ethnic groups, comprising about nine percent of China's population, to be exempt from the one-child policy. In Northern Ireland, under the Good Friday Agreement in 1998, the law requires that the Police Service recruit equal numbers of Catholics and Protestants.

Demonology

He who fights with monsters might take care lest he thereby become a monster. And if you gaze for too long into an abyss, the abyss gazes also into you.
Friedrich Nietzsche, 1844-1900, *Beyond Good and Evil*

Two-thirds of Americans polled last month said they support the idea of televising executions—and 21 percent said they'd pay to watch Osama bin Laden put to death.
MSO, Poll by Harris Interactive for Trio cable channel, February 23, 2004

Something in us usually looks for someone to blame. In a nation of 300+ million people there are, unfortunately, quite a few scandals, crimes, and court cases. Do you ever wonder why we pick out certain individuals as targets of public wrath or contempt—the people we love to hate? They may have problems with the criminal justice system but they are not the only ones. For whatever reason, they become the scapegoats of choice. It is as though the community had a recurring need to tromp on somebody—in a long-wave mood change we might call the scapegoat cycle. (We also fill this need with foreign leaders whom our government chooses to demonize, and with whatever ethnic, gender, occupational, or ideological group is currently most out of favor.)

A theory mentioned earlier is that gossip fills a need for community bonding, acting somewhat as grooming does for non-human primates. We also noted the highly contagious nature of outrage memes. Possibly something in the collective human psyche requires repeated scapegoats or sacrificial victims, a possibility dramatized in Shirley Jackson's famous short story "The Lottery." In our society it is the media that generally supply and spread outrage memes and that specify the person you love to hate, condemn, or blame.

Celebrities are well aware of the fickleness of the public, who may idolize them at one moment but throw rotten tomatoes at a turn of fortune's wheel. Whether or not media instigate these public changes of heart, they certainly magnify their effects. Besides the mainstream media, fans (the word is short for fanatics) have their own magazines and websites. Fans seem to be ever more numerous and increasingly intrusive, to the point that some even stalk their chosen celebrity. However, except for the occasional deranged fan/atic who attacks his object of obsession, fans are more nuisance than menace.

Some patterns are evident in the choice of persons to scapegoat on the national scale. For instance the late Leona Helmseley, a New York City billionaire slumlord, and Martha Stewart, who developed a small empire of magazines, television shows and products, were both rich, middle-aged women with legal problems. Helmseley was notorious for a statement attributed to her in courtroom testimony that "We don't pay taxes. Only the little people pay taxes." She was stating at least a partial truth. In 2000, there were 2,328 U.S. individuals with incomes of $200,000 or more who paid zero in income taxes. Others paid the government billions of dollars less than they might have because of capital gains.

Both women were also accused of being mean and arrogant, although the charge did not stick very well to Martha Stewart. No corrupt corporation executive or financier of recent years such as Enron's Lay and Skilling, accused of far more serious crimes, has received anything like the level of attention directed at Martha Stewart. It seems that powerful, rich women past a certain age are among the chosen scapegoats. They don't even need to be rich. The noted atheist, Madelyn Murray O'Hair, though deceased is still a demon for many, as shown by the following letter to the editor that suggests O'Hair destroyed America:

> God blessed our nation….Then in the 1960s one woman who claimed she didn't believe in God decided to force her beliefs on the rest of us. She filed a lawsuit to ban God from our public schools….The court let her get away with her ignorance….Our nation once considered the most admired nation in the world has now become the most hated. (W.T., July 29, 2007)

More recently House Speaker Nancy Pelosi became an object of dislike and derision for many. This was based on politics more than her actual personality or actions. Dramas, especially soap operas feature many demonic women and they also appear as the wicked stepmothers, queens, and witches of fairy tales, suggesting an archetype. Such symbolism was certainly evident in the late-medieval witch hunts, which targeted older women.

Other demon scapegoats are often based on race. The O.J. Simpson case was apparently the 'crime of the century,' for several reasons: O.J. was a well-known sports figure, once widely admired; he was a black man whose former wife was a beautiful white woman; he was a black man accused of murdering a white woman; and he had enough money to hire top-notch lawyers. Many other rich men have been known to beat the rap, but they were not rich, famous *black* men. The case filled the airwaves for a year or more. Many people, firmly convinced of his guilt, became almost enraged when the jury acquitted him. One could hear opinions that trial by jury was flawed because jurors were too stupid to make good decisions. Some people were quite ready to throw out the hard-fought-for right to a jury of your peers that English forebears had gained centuries ago, long before there ever was a United States of America.

Also, despite all the fictional courtroom dramas that have played out on our television screens, when it comes to outrage memes many of us do not know or care how the legal system is supposed to work, what the evidence is, or whether it might have been tampered with. Instead, it seems, many of us simply want frontier justice.

A great many cases involving black men (and others) accused of crimes have resulted in the incarceration of people who were innocent but had inferior legal representation, such as court-appointed lawyers who slept during their client's trial. The fact that many people spend years in prison for crimes they did not commit should bring as much outrage as does one case of a person who is probably guilty and 'gets away with murder.' However, there is less concern about injustice that punishes the innocent. The incredibly strong reactions to O.J. Simpson's trial owed more to racism and vigilante justice than to abstract principles.

The people we love to hate are often stand-ins for something else. Baseball player Barry Bonds, who recently set a new home run record, incurred the dislike of fans angry because Bonds accomplished his feat after having taken steroids. Although Bonds reportedly does not have a charming, outgoing personality, yet a newspaper editorial wonders why Bonds in particular is so demonized:

> Bonds is the poster boy for all of professional baseball's problems....A number of players have said that the use of steroids has been widespread in baseball and the reaction of the administrators

of the game has been woefully weak and considerably slow....But why do other sports get a pass while baseball endures the brunt of public derision over steroids? Steroids have been a way of life in professional football for 30 years.

Here's another way to become a demon: as an American teenager, you convert to Islam and go to Afghanistan to fight with the Taliban against their Afghan enemies, the Northern Alliance. During this time the United States government gave some forty million dollars to the Taliban to aid their war on drugs—banning opium poppies. But then September 11, 2001 happened. The "American Taliban," John Walker Lindh, was arrested at the age of 20 in the mountains of Afghanistan, weak from wounds. According to an editorial in the *Los Angeles Times* he was then "blindfolded and duct-taped naked to a stretcher, kept incommunicado in an uninsulated shipping container and interrogated by intelligence and FBI agents." Once back in the United States, "Lindh was pilloried by officials at the highest levels of government." They tried to throw the book at him, but all charges of terrorism or treason were dropped and the only crime of which he was found guilty was a Clinton-era presidential order that prohibits aiding the Taliban. However, he received a 20-year sentence, far longer than any other such defendant.

America finds many of its demons abroad. It is ironic that of those foreign leaders the United States has demonized in the last twenty years, half of them were formerly in its employ: Manuel Noriega, Osama bin laden, and Saddam Hussein. (However, Gadhafi, Castro, and Chavez were not.) The latest demon is the president of Iran. Noam Chomsky notes how U.S. media target him:

> In the west, any wild statement by [Iranian] President Ahmadinejad is circulated in headlines, dubiously translated. But Ahmadinejad has no control over foreign policy, which is in the hands of his superior, the Supreme Leader Ayatollah Ali Khamenei. The U.S. media tend to ignore Khamenei's statements, especially if they are conciliatory.

Not only Khamenei but his allies who include former President Akbar Hashemi Rafsanjani, who has a large fortune, and pragmatist Ali Larijani, a political rival to Ahmadinejad, have concerns about Ahmadinejad's populism and his talk about redistributing wealth within Iran. Ahmadinejad has had many clashes with Iran's parliament, and in December 2006 the parliament voted to shorten his presidential term by 18 months, ostensibly to save money. Many Iranian people do not seem to likeAhmadinejad, especially after he won a probably fraudulent election, but in recent demonstrations some also openly opposed the previously untouchable Khamenei.

Demonizing is also popular in domestic politics. The last two U.S. presidents, Bill Clinton and George W. Bush, both attracted more outright hostility (from entirely different segments of the population) than did any other president since FDR. After seven years out of office, former president Bill Clinton was still a handy scapegoat for Republicans until President Obama replaced him as a target. In 2008, Presidential candidate Rudy Giuliani indirectly blamed Clinton for the 9/11 terrorist attacks, after which former anti-terrorism czar Richard Clarke (under Bush I, Clinton, and Bush II) and former National Security Council director for counterterrorism Roger Cressy rushed to Clinton's defense. Al Gore is another 'demon' especially because of his efforts to publicize global warming. In fact, in today's political climate any prominent Democratic politician is likely to be demonized.

Scapegoats

The efficiency of the truly national leader consists primarily in preventing the division of the attention of the people, and always in concentrating it on a single enemy.
Hitler, *Mein Kampf*

Scapegoats and enemies have much in common. They are individuals, groups, or nations on which we project our fears and anger. In the original meaning, the people loaded their sins and negatives onto a sacrificial animal, and then drove it away, perhaps over a cliff or into the woods where it would be attacked by predators. Today many groups, sometimes even dysfunctional families, have their favorite scapegoat person to blame or pick on.

Nations also find scapegoats, as we mentioned. After the Soviet Empire broke up, Lewis Lapham noted in *Harper's* that American politicians and policy analysts were lost without Communists to hate. He made the following suggestion for a well-ordered state:

The people would elect a council of scapegoats and hags…who would present themselves as villains for all occasions—in traffic court, at ball games, in corporate boardrooms, at cabinet meetings. When things went wrong, as surely they must, the respectable people could point and jeer, and know they had seen the goblin who had blown the deal, run the red light, or lost, by a score of 5-2, Southeast Asia and "the spirit that made this country great."

Fifteen years later, a completely non-amusing, counter-version of Lapham's whimsical idea has developed in the right-wing blogosphere and media punditry. Shows such as Bill O'Reilly's and websites such as Michelle Malkin's frequently point out some unprotected, private individual such as a public school teacher who is denounced as a subversive or cultural enemy before an audience of thousands or millions. An even more dangerous and intimidating tactic is the public listing of addresses of private individuals such as the *New York Times* photographer who took a picture of the vacation home of Donald Rumsfeld (with his permission) or a Jewish plaintiff family in an ACLU case. Thus the universe of scapegoats dramatically increased to include many private individuals who differ with right-wing views.

Sixty years ago at the beginning of the Cold War, Senator Joseph McCarthy conducted what is often called a "witch-hunt" against people he considered Communists and Soviet sympathizers, especially those in the government and Hollywood. It was then only five or six years since the Soviets had been U.S. allies in the war against Nazi Germany, a war in which they lost twenty-seven million people, and they still faced enormous reconstruction efforts—but now 'we' were no longer 'friends' with the USSR.

McCarthy ruined a number of careers and terrified many people who had been leftists during the Great Depression of the 1930s, a time of peak dissatisfaction with the capitalist system. Eventually public resistance stopped McCarthy's persecutions, but the Cold War with its continuous fears of Communists and nuclear war went on for forty years and surely helped to shape the contemporary American psyche.

Gays, Jews, and Arabs

As long as we hate, there will be people to hate.
George Harrison, musician and composer, 1943-2001

Currently a very small segment of the population, gays and lesbians, are treated like outcasts. No evidence or facts or even a reasonable argument demonstrates in what way their private sexual orientation threatens the rest of society, only that the Bible condemns homosexuality in a few passages. The Bible also condemns adultery and fornication in quite a few passages, as well as eating pork, catfish (fish without scales), and seafood such as lobsters and shrimp—and other behavior that true believers choose to ignore in their persecutions. I am looking forward to the day when Southern Baptists picket restaurants serving pork and catfish

No demonology would be complete without listing *anti-Semitism*, an old European meme dating back two millennia, a meme that never seems to stay dormant for long. Jews are the default scapegoats. There are numerous theories why they have been persecuted so continuously. One is that they were demonized by the early Christian church as a competing religion (from which the Christians had borrowed heavily). Rosemary Radford Reuther says that Christian-Jewish hostility began as early as the Christian gospels, especially the Gospel of John. She adds: "The sad truth of religious history is that one finds that special virulence, which translates itself into diabolizing and damnation, only between groups which pose rival claims to exclusive truth within the same religious symbol systems."

You may well dislike the government of Israel and its policies toward the Palestinians or its wars with Lebanon. You may distrust the Mossad, or oppose the philosophy of Zionism. You may worry about Israel's nuclear weapons. You may feel that the Jewish lobby (AIPAC) has too much influence on the United States government. You may agree with Richard Cohen that it was a mistake to found Israel as a nation of European Jews in a region of Muslim Arabs. These are all defensible positions, and there are Israelis and American Jews who would agree with you on each of these points. In fact, there are dozens of Israeli, Israeli-Arab, and Jewish peace groups. There are Israeli soldiers ("refuseniks") who go to jail rather than serve in the occupied territories. There are anti-Zionist rabbis and sects; and the majority of American Jews do not support the positions of AIPAC.

It is certainly not anti-Semitism to disagree with the ruling party of Israel, any more than it is un-American or un-Christian to disagree with whichever party is in power in the United States. However, those classic anti-Semites who are absolutely certain that Jews own all the money and run the world, who bring up every absurd and vicious medieval myth about the Jews, or who go back to some bizarre version of ancient history to prove their hatred, seem to be operating out of a psychotic stratum of their personality, some old putrefied meme, with a whiff of serial killer Jeffrey Dahmer. It is unlike most other kinds of ethnic hostility in which there is, at least, the justification of current competition for jobs.

Incidentally, Arabs are also Semites. Some wonder if the old anti-Semitism has been transferred to a similar ethnic group which has a different religion. Anti-Semitism as prejudice against Jews became an ideology long before Hitler, and prejudice against Muslims is fast becoming an ideology. There is controversy about whether *Islamophobia* actually exists, but if newspaper columnists and letters to the editors of newspapers are any indication, it certainly does.

Enemy-making

Enemy tribes caused the Mundurucu to go to war simply by existing, and the word for enemy meant merely any group that was not Mundurucu.
R.F. Murphy, anthropologist

When you create a scapegoat out of a small minority of people who are without any obvious power, it makes you look bad, like a bully. So you convince people that this small group of people (or even just one person) is an extreme threat and danger. They are going to steal us blind, kill us in our beds, rape our women, take our jobs, destroy our moral values, infiltrate our government, blow up our buildings, and try to take over the world. Making them a threat automatically makes us heroic for opposing them. Heroes require enemies, by the standard definition of hero, in order to demonstrate their heroism.

War is a great exercise of enemy-making. Even if we are supposedly not at war with the civilian population of a country, that news does not get to all the soldiers or their supporters back home. No matter what country we're fighting, some people must demonize the entire population. "Kill them all, and let God sort them out afterwards."

Strangely enough, such attitudes often coexist with claims that one follows a religion such as Christianity, although Jesus said, "Love your enemies." People tend to forget that Hitler claimed to be Christian, and that Nazi soldiers wore belt buckles with the inscription, "God is with us."

Columnist George Will notes that the recent film "Letters from Iwo Jima" (nominated for an Oscar) finally humanizes Japanese soldiers who fought the United States in World War II, over 60 years ago. Attitudes toward the Japanese were harsher than towards the Germans, and took longer to soften. A movie critic says that of more than 600 English-language movies made about World War II, only four could even acknowledge the humanity of Japanese soldiers. Will gives these examples of the "special ferocity, rooted in race, of the war against Japan":

> [Admiral William F. Halsey said] "We are drowning them and burning them all over the Pacific, and it is just as much pleasure to burn them as to drown them." Wartime signs in West Coast restaurants announced: "This Restaurant Poisons Both Rats and Japs." In 1943, the Navy's representative on the committee considering what should be done with a defeated Japan recommended genocide—"the almost total elimination of the Japanese as a race."

George Will says that empathy for conscripts in enemy armies is "a civilized achievement, an achievement of moral imagination that often needs the assistance of art."

Inquisitions, show-trials, pogroms, witch-hunts, and lynching have something in common. The next time you find yourself running along with a group of villagers carrying torches and pitchforks, stop to ask yourself, "When was the last time I did this?" and "Why?"

Xenophobia: Xenophobia is the fear or hatred of strangers, and it probably goes back to the territorial behavior of our primate ancestors. Some societies foster this inborn tendency, while others do not. We can evolve past it, and many cultures and individuals have done so.

One of the most time-honored ways to discover demons among us is to scapegoat whole groups that are ethnic/religious minorities, recent immigrants, or both. Until the mid-nineteenth century, most of those who settled the United States were Protestants from northern Europe whose native language was English. A minority were Germans, with a sprinkling of French Huguenots and others. Then one hundred fifty years ago, a flood of Irish peasants—desperately poor, unskilled, and Catholic—immigrated to the United States to escape the Irish Famine. Their presence was unwelcome to many and gave rise to a nativist movement known as the Know-Nothings, whose platform was to restrict immigration and to exclude naturalized citizens and Roman Catholics from politics. The Know-Nothings had some electoral success in 1854, but shortly after this the party split over slavery questions. However, nativist sentiments remained

and soared whenever the economy was bad, as in the 1880s and 1890s. (Nativism may be one of those memes that can go dormant and then reappear.)

In the 'new immigration' between 1891 and 1920 more people arrived than in the previous seventy years—eighteen million altogether. In addition, they were from new regions: southern and eastern Europe, especially Italy, Austria, Hungary, Romania, and Russia. By 1894 several organizations to limit immigration had formed to promote the ideas that immigrants should pass a literacy test and that quotas should be imposed on immigrants who were not from northern Europe. Later, the U.S. Immigrant Act of 1917 did require all incoming immigrants from Southern, Central, and Eastern Europe to pass a reading test in order to enter the United States. The Immigrant Act of 1924 drastically limited immigration numbers, with quotas for southern and eastern European and non-white countries although not for northern Europe.

Meanwhile, influential books such as William Ripley's *The Races of Europe* and Madison Grant's *The Passing of the Great Race* gave intellectual justification to nativists and racists. Twenty years before Hitler's rise to power in Germany, Grant warned that members of inferior races entering America would weaken the original Nordic strain, "this great Anglo-Teuton people," by interracial breeding. He also called for segregation and sterilization of innately inferior peoples.

The term 'Anglo-Saxon' constantly recurs in this literature and in the words of its approving readers such as Teddy Roosevelt, to describe the original settlers of the United States, as well as inhabitants of the British Isles and their descendants in Canada, Australia, and New Zealand. One may wonder why we take two Germanic tribes that raided and settled in Britain during the fifth to eleventh centuries to represent all the English-speaking peoples. Why leave out the original Britons, who were Celts, or the even earlier, mysterious inhabitants who built Stonehenge? The Romans too must have left a few of their genes behind. Danish Vikings raided after the Angles and Saxons did. The Normans were Viking raiders who had settled in the north of France and then conquered Britain in 1066. They contributed as much to the contemporary English language and culture as did the Angles, Saxons, and Jutes, so what of them?

Historian David Hackett Fischer says that as of 1988, the portion of U.S. population with ancestors from the British Isles had declined to twenty percent and those of German descent (with just a few more members) had become the largest ethnic group in the United States. Madison Grant's "great Anglo-Teuton people" thus currently comprise forty percent or less of U.S. population.

The 'Anglo-Saxon superiority' meme is still around but uses different language. It is now more racist than ethnic, scorning people of color and Arabs, but tolerating those from Ireland and southern and eastern Europe, who by now are well-integrated into American culture. Fear of immigration from south of the border has given new life to the meme.

Hispanic Immigration: The United States Congress and public are currently grappling with the presence of a large number of illegal immigrants from Mexico and Central America, estimated at about twelve million people. It is one of those political wedge issues, arousing plenty of nativist and racist sentiment along with quite reasonable objections to uncontrolled immigration. This whole situation is nothing new, however. As is the case with most such hot-button issues, the public does not have full context or historical background. Here are some perspectives to round out the picture a little more.

An article by Nina Bernstein gives a history of the past century in which the United States has repeatedly left its "back door" open to Mexican immigration because growers needed cheap

labor, then moved to expel the workers and their families during economic slumps. For instance, at the start of the 1930s economic depression, authorities rounded up Mexican families in public places and put them on trains to the border, a tactic called "scare-heading." Even legal immigrants felt so intimidated that they sold their property cheap and left the country. Less than ten years later, during World War II, U.S. farmers needed their labor again and they were welcomed back as *braceros* in a negotiated agreement with Mexico.

However, by the 1950s, Mexican immigrants were "wetbacks," unwelcome once more. Under Eisenhower, arbitrary deportations drove out a million or more people. According to Camille Guerin-Gonzales, while restrictive immigration laws set up in the 1920s had quotas that would keep out most Mexicans, yet the growers still needed cheap labor, so: "Americans constructed Mexicans as birds of passage."

Reasons for Immigration: The current high rate of immigration from Mexico (since 2001) has several explanations, in the view of writer John Kelley. First, trade policies under NAFTA resulted in dumping millions of tons of cheap corn on Mexican markets. Small farmers could not compete and an estimated three million lost their land and livelihood. Even when they (or more likely their wives and daughters) went to work in *maquiladoras,* many of those jobs soon went to China where people work for even lower wages. So, the former farmers and factory workers came north, looking for work here.

Other U.S. subsidies work to the detriment of Mexican farmers, for instance, heavy subsidization of 900 rice farmers in my home state of Arkansas. The Mexican situation could get worse. Crops from the United States have inundated Mexican farm country ever since NAFTA began, but soon the final provisions of the pact will open up Mexico to unlimited imports of chicken from the United States. Then Mexican farmers will have to compete directly with U.S. agribusiness that feeds its birds with subsidized corn.

NAFTA has also had the effect of lowering manufacturing wages in Mexico. According to U.S. Bureau of Labor statistics, the ratio of the average manufacturing wage in the United States to that in Mexico went from six to one in 1994, before NAFTA, to 8 to 1 in 2006.

Second, Kelley claims that Mexican and Central American immigration serves American foreign policy by allowing in a certain number of young males who might otherwise spearhead radical reform in their own countries. Similarly, the remittances they send back to their families relieve the pressure for revolution back home. Remittances comprise Mexico's second largest source of income, next to oil; 17 percent of the GDP of El Salvador; and 10 percent of the GDP of Guatemala. Kelley says, "American foreign policy historically supports dictators and oppressive government against populist movements that threaten corporate wealth and control." Ironically, the fact that immigrants send money back to their families seems to incense a number of U.S. citizens who are anti-immigration.

The third reason Kelley gives for business and government to allow or encourage increased immigration is to undermine American unions and suppress wages. He rejects the constant refrain that illegal workers do jobs that American workers won't do. Kelley says that the official U.S. unemployment rate of 5.5 percent seriously underestimates the situation, since it does not count discouraged workers, or those working part-time or temp jobs who want full-time work. It does not count people who are underemployed—people with college degrees who are working as clerks or cab-drivers. Nor does the unemployment rate take into account several million people who work full time, yet earn less than the federal poverty rate.

Kelley notes that the general problem of 'insourcing' by immigration also affects educated workers in fields such as bio-tech, information technology, medical occupations, and even teaching. He points to the huge number of people in India with bachelor's degrees who speak English. Across the world, an estimated one-third of people are unemployed or underemployed. The insourcing of educated people from abroad creates a brain-drain in their own countries. The idea sometimes heard that the United States should limit immigration to highly educated people is supremely selfish and hard to understand, since such a large, rich country as ours should be able to provide all the experts it needs. Work and livelihood is a world-wide problem and it needs addressing at the species level.

The fourth reason Kelley gives for the government's tacit support of illegal immigration—government actions against employers for hiring illegal aliens are almost nonexistent—is that an employer can pay people low wages, without benefits, and force them to work in unsafe conditions. If they complain or try to organize, the employer can turn them into INS for deportation. Sometimes employers defraud workers of their pay or the possibility of workmen's compensation for injuries. Rachel Townsend, Executive Director of the Northwest Arkansas Workers Justice Center, finds frequent cases of wage fraud among local contractors and sub-contractors who simply fail to pay undocumented people who have worked for several weeks, or pay them with hot payroll checks. In addition to his fear of deportation, the defrauded worker has very little legal recourse because of the way state and federal laws are structured.

Kelley maintains that a Guest Worker program would be the legalization of a semi-slave class.

Racist Overtones: Rather than look for causes or solutions, some prefer to scapegoat the immigrants themselves (recipe: *Blame*). The Anti-Defamation League reports that hateful rhetoric aimed at Latino immigrants has grown to an unprecedented level, and lists incidents of vandalism, physical assaults, and an Internet video game called "Border Patrol" that allows players to shoot Latino characters. Mark Potok of the Southern Poverty Law Center says that hate groups will try to exploit any public discussion with a racial angle, and that the immigration issue was working well for hate groups.

Currently the Mexican immigration debate is framed by politicians, media, and public mostly in terms of adhering to the letter of the law and building walls and fences. There is no recognition of the fact that it may take at least ten years to obtain a legal visa, during which time the Mexican is desperate for work to support his family. The debate is seldom framed in terms of economic conditions that increase illegal immigration or of fixing NAFTA. Nor is this particular issue framed in biblical terms, although the Bible contains many passages exhorting people to be kind and just to the aliens in our land, even as the Israelites were aliens in Egypt. In the latest wave of blame, local laws are passed with sanctions on employers who hire or recruit illegal immigrants and on landlords who rent to them. It remains to be seen whether municipalities will actually apply criminal laws to large industries that use immigrant labor but are important to the local tax base.

Every so often the government conducts a well-publicized raid on some factory, arresting and deporting a number of illegal workers, but without sanctions on the employer. This looks like the government "is doing something." For instance in the spring of 2007, Immigration and Customs Enforcement arrested over 100 workers at a George's processing plant in Springfield, Missouri, but the ICE spokesman said no charges had been filed against George's "and declined to say whether the company knew it was hiring illegal aliens." The nature of legislation passed since

December, 2005 helps to frame the issues in ethnic terms. One bill would turn illegal immigrants into felons, and another declares English the national language.

Mexican immigration policy badly needs a re-frame, but harsh rhetoric and unilateral laws that sidestep negotiations with Mexico repeat an old pattern. Bernstein says that Mexicans have been welcomed through the back door and sent back for four generations, ever since the 1890s, repeatedly losing ground. On the other hand, many people suggest that enforcing stiff penalties for employers who hire illegal immigrants would quickly stop the flow across the border. Certainly, legislators could revisit NAFTA provisions that cause so much of the illegal immigration.

Chapter 10: Leadership, Obedience, Authoritarians

"Marge, it takes two to lie. One to lie and one to listen."
Homer Simpson (Matt Groening, American cartoonist)

The practice and acceptance of demagogy is as old as Greek democracy (**Bedazzled by Words**). In fact, demagogy could hardly exist without democracy. The demagogue tries to persuade the public to follow or vote for him, making promises and appealing to both their aspirations and their baser emotions. (Kings and other authoritarian rulers do not need to persuade their subjects by words, since they rule by force.) On the other hand, I hope that democracy can someday exist without demagogy, although I do not know if it ever has. This would require a whole citizenry that is adept at critical thinking.

Some of our beliefs go back to the notion of absolute monarchs who had absolute power and who believed in absolute religions that all their subjects must follow (**Absolutism**). There are still absolutes in play today, especially in religion and morality.

Our differing and changing conceptions of leadership have roots in prehistory (**Follow the Leader**). They have primate roots as well. (See Frans de Waal, *Chimpanzee Politics*,) Strong or authoritarian leadership has its accompanying rules, namely to **Obey Authority** and to **Defend Authority**. The person who is an **Authoritarian Personality** has the tendency to follow authorities—or to become one.

Bedazzled by Words

[A demagogue is] *one who preaches doctrines he knows to be untrue to men he knows to be idiots.*
H. L. Mencken, American social critic and satirist, 1880-1956

In a more objective definition, demagogues are leaders who appeal to popular prejudices, and make false claims and promises in order to gain and maintain power. Demagogy is as old as the ancient Greeks whose language gave us the word. Wherever there is democratic rule, there are silver-tongued rascals who want to influence somebody's vote by 'pushing their buttons.' The demagogue presents himself as a man of the people (populist) and strongly patriotic. He may not actually lie, but he uses half-truths, omits information, and distorts the arguments of others. The demagogue requires an audience that is somewhat naïve. Wikipedia notes that he only needs to use a "*special emphasis* by which an uncritical listener will be led to draw the desired conclusion himself, seeding a belief that is self-reinforced rather than one based on fact or truth." You would think that after 2,500 years, folks would be wise to all the tricks of demagogues, but many are not.

In particular, demagogy tends to appeal to low motives while using high-flown language; and if the demagogue is running for office and wins, his subsequent actions may have nothing to do with the promises he made beforehand. The fantastic part of it is, hardly any of his followers seem to notice or at least to admit that the person in office is doing something quite contrary to his professed plan.

Why is it that so many of us appear to mistake the promise for the reality, the words for the thing referred to, and the symbol for the substance? A lot of it is in the demagogue's skillful use of language that seems to say more than it actually does. The person taken in by this sort of

language mistakes the abstract for the concrete. Cynics in the 1930s had a word for demagogic promises: "pie in the sky" for suckers.

One demagogic technique leads to "hollow laws." Former Senator Paul S. Sarbanes says that voters become alienated from their government in large part because of "the practice of passing 'hollow laws' [which] purport to change things, but which, through loopholes and waivers, result in nothing really happening."

Buzz words evoke emotions to give extra power to the message. Politically effective words to describe the politician's own campaign, sometimes called "glittering generalities," contain soothing language and promises: *moral, democracy, faith, peace, crusade, protecting, family values, honor, prosperity, security, the flag, reverence, bravery, love of freedom, the shining city on the hill*. On the other hand, when the politician refers to opponents he uses words such as *cynical, betray, cut and run, welfare, taxes, elite, lack of vision, corruption, defeatist, appeasement, bureaucracy, regulation, special interests*, and the like.

Common methods of demagogues are using emotional appeals to fear, vanity, ethnic prejudices, and the common tendency to blame scapegoats. The demagogue may make personal attacks on those who disagree with him. He is also prone to use various logical fallacies such as the False Dilemma or Straw Man, described later.

Demagogues often attack intellectuals. Dictators Hitler and Mao killed them by the thousands, Joe McCarthy and Spiro Agnew tried to skewer them with words like "egg-head" and "pointy-headed intellectuals," and right-wing politicians attempt to persuade voters that there is something wrong with well educated, thinking candidates. Not only do intellectuals serve as scapegoats, but by putting them down, the demagogue helps assure that his listeners will not respect thinking, either. That gives him an even more uncritical audience.

I fear that this anti-intellectual stance works so well in the United States in part because our overly-competitive school system leaves some children with a life-long resentment of the kids who did better in schoolwork.

Absolutism

It is a truism that almost any sect, cult, or religion will legislate its creed into law if it acquires the political power to do so, and will follow it by suppressing opposition, subverting all education to seize early the minds of the young, and by killing, locking up, or driving underground all heretics.

<div align="center">Robert A. Heinlein, science fiction writer</div>

Different religions have quite different sets of beliefs, and most teach that their own set is the only one that is true and absolute. Some ideologies are just as dogmatic. Problems arise from religious faiths or ideologies when followers claim exclusive title to the truth and assertively reject the social contract of mutual tolerance. For instance, a bumper sticker sold by Harbor House Gifts says "Truth, not tolerance." It shows a clenched fist on one side and a Christian cross on the other. However, a culturally diverse, democratic society will fragment without some unspoken contract to allow coexistence of different beliefs.

Absolutism relates to the monoistic idea that one belief-system is right while all the others are simply wrong, heretical, or treasonous. Sometimes an absolutist system of religious beliefs or an absolutist ideology is linked closely to political power, ethnicity, or nationalism, leading to conflicts, even to wars or civil wars. At one time in history, absolute monarchs were the rule,

with powers of life and death. The people were expected to follow their monarch's religion, like it or not. In the 16th and 17th century, princes fought over thrones and nations fought bloody wars in order to determine how their citizens would worship.

In modern totalitarian regimes, dictators have similar absolute power, often accompanied by a toothless, shallow democratic structure used for window-dressing. There may be a parliament, put in place by fraudulent elections or a cowed public, that simply rubber stamps the dictator's edicts, and a court system that never questions them. Rather than require all his subjects to believe the same religion, the dictator may require them all to subscribe to the same ideology such as communism or fascism.

When an individual claims to know the absolute truth he is likely to be called crazy, but when hundreds, thousands, or millions of people band together to declare theirs the one and only possible belief, their numbers lend credibility and political influence. Then if the power of the state or the wealth of subgroups backs such exclusive religious or ideological belief, whole nations may be subject to mass delusion as in Nazi Germany, or to religious/ideological wars against other absolutist groups as in seventeenth century England and Europe.

Today there are continuing public controversies about whether morality is absolute, as defined by Bible literalists and some other religions, or situational. Various ethical dilemmas may be posed regarding situational morality, such as, should one lie to protect another person's life, or one's own, against a ruthless attacker? Supposing one's mate became paralyzed from an accident soon after marriage, should one spend fifty years celibate? Is self-defense a true justification for murder? As the owner or CEO of a company, if one knowingly allows a factory to discharge toxic substances into the air or water, with a statistical probability of causing a certain number of deaths, is one guilty of murder? Thus, one may propose many complex ethical questions that do not have easy answers from the Bible or other holy books.

A possibility not mentioned by proponents of absolute morality based on their reading of the Bible, is that some other absolute morality, from some other religion, is equally true, or at least believed in as strongly. According to the Barna Research Group, a remarkable change occurred in American beliefs about this issue between January 2000 and November 2001. Those who believed in absolute moral truth fell from 38 percent of adult Americans in the 2000 poll to 22 percent in the later one. The pollsters suggest that the attacks of September 11, 2001 caused some people to realize that the attackers appeared to believe in the absolute morality of what they had done, showing that at least there was more than one version of absolute morality.

Indeed, one of the problems with absolute morality is that there have been historical changes in what is believed. Two hundred years ago slavery was accepted, and so was the right of someone to beat his horse to death in the street, because it was his own property. Neither of these is now acceptable in any current system of morality or law. Current conflicts about absolute vs. relative or situational morality are part of 'The Culture Wars' which will appear in a later book.

There are two main absolutist dogmas in Christianity. One is Papal infallibility, with regard to certain doctrines in the Catholic Church, formally defined in 1870. The other is Biblical inerrancy or freedom from errors, which was later formulated as one of the "five fundamentals" following the Niagara Bible Conference, 1878-1897 and followed by fundamentalists.

Religious absolutism appears to be increasing in all three of the major religions that have roots in the Near East—Judaism, Christianity, and Islam, sometimes called the Abrahamic religions. All three include the Old Testament as one of their sacred books.

Religion may seem to be the major expression of absolutist thinking at the moment, but it is well mixed with politics, ethnocentrism, and nationalism.

Follow the Leader

Everyone thinks [Aragorn] is the man for the job, because he has humility, a concern with the consequences of his actions and words on others, and an interest in finding common ground with other people. All are qualities which I wish there were more of in real life in our modern-day leaders.
Viggo Mortensen, actor playing Aragorn in the "Lord of the Rings"

The contest for ages has been to rescue liberty from the grasp of executive power.
Daniel Webster

Follow the leader is not just a children's game. Animals that live in groups often have leaders, who may simply be the best ones at finding food or the first to sense danger: obviously, the ones with the memes to copy. Human leadership styles vary from the low-key rotating chairmanship to authoritarian hierarchies on the Prussian military model. When seventeenth century Europeans encountered Native American tribes, they automatically assumed that Indian chiefs were authoritarian strongmen as in Europe at that time, entitled to make decisions for the tribe. Native American chiefs, however, served by agreement of the rest of the tribe and often shared longer-range decisions with a council of elders and with medicine men or shamans.

There are different kinds of leaders for different situations, but a problem arises when modern-day people, who are not facing saber-tooth tigers, over-generalize the need for strong leaders in a number of situations that for some include family life; or when military leaders in a democracy are part of a "command climate" that ignores the law. One example of this command climate is the U.S. Army's mandatory anthrax vaccine program as documented by John Richardson.

To believe in the desirability or inevitability of a strong national leader—the man on a white horse, the strongest warlord, el caudillo, or a popular general—is an authoritarian attitude that has been growing lately in the United States. The preference for a strong president seems to have expanded since the administration of President Jimmy Carter, widely perceived as 'weak' largely because he was unable to fix the Iran hostage crisis. Much of this public perception was encouraged by the media, including daily headlines that counted the days since the hostages were abducted.

The current (2006) U.S. definition of a strong leader seems to mean one who blusters, who cows or insults other nations, who conducts easy and winnable wars against small countries such as Panama or Grenada, who spends a relatively large portion of taxpayer dollars on the military, and above all, who lets no other (small) nation or former client such as Noriega or Saddam Hussein disobey or get in the way of the United States without severe repercussions, in other words, one who exacts vengeance. The definition of disobedience for Saddam Hussein may have included his intention to sell his country's oil for Euros instead of dollars.

After an actual attack on the United States, strong U.S. leadership consisted in exacting a whole mouthful of teeth for a tooth, not from the elusive Osama bin Laden but first from the Taliban who had vainly tried to get Osama off their hands without losing too much face in the Arab world. In May 2001, seven months before attacking the Taliban, the United States had provided the Taliban with $43 million for their ban on opium-growing. Among the contradictions noted by columnist Robert Scheer in May, "The Bush administration is cozying

up to the Taliban regime at a time when the United Nations, *at U.S. insistence,* imposes sanctions on Afghanistan because the Kabul government will not turn over Bin Laden."

A crime as monstrous as 9/11, which according to conventional wisdom changed the entire course of history, seemed to require a lot of vengeance, and recent United States wars in Afghanistan and Iraq have killed civilians in far greater numbers than those who died on 9/11. However, while the events of that date were truly horrific, the fact is that many historical events that did not occur live on television were even more so. Various democides of the 20th century killed millions in Germany, Poland, Soviet Russia, China, Cambodia, Sudan, Indonesia, Congo, and elsewhere.

On a smaller scale in the United States itself, and largely forgotten, early 20th century race riots in which whites attacked blacks in Tulsa, East St. Louis, Detroit, and other towns together killed a greater number of people than the 2,800 victims of 9/11. But they did not change the course of history. For that, an event must be singular, dramatic, symbolic, and most of all, seen on television by millions of people at the same time. According to a poll taken six years after the tragedy, 81 percent of Americans view the plane hijackings as the most significant historical event occurring in their lifetime, and 61 percent of them think about this at least once a week.

As it happened, I was driving around doing errands on the morning of September 11, 2001 and would not have had my television on anyway, so I learned of events secondhand from a woman in the county courthouse. She said with grim satisfaction, "This means war." I asked with whom, and she did not answer. But it was evident that she had a storyline in mind.

Vengeance for September 11 fell on the civilian population of Iraq who were still suffering from Gulf War damage to infrastructure as well as many years of economic sanctions. For propaganda purposes, of course, the target was Saddam Hussein, who had already been demonized during the Gulf War. One could divine the public mood by listening to local people talk and reading their letters to the editor. Most were horrified and saddened by the human tragedy of 9/11, but another undercurrent appeared almost immediately, something like the rage of a gang member at being dissed. The United States had not been attacked on home soil for two hundred years and it was not supposed to happen. *You can't do that to us.* An automatic assumption by many—if not the majority of the public—was that Saddam Hussein was to blame for the attacks. He had been the demon-of-choice for years. This same idea was implied by Bush Administration leaders without being either stated outright or denied until much later. The accepted frame then was that Saddam Hussein had not only harmed but also insulted us in the worst possible way, and we had to go bomb 'him.'

One who exacts vengeance using overwhelming force and who has an expansionist foreign policy seems to be what people really mean by a "strong president." Commentators who desire a strong president often use the euphemisms 'muscular' or 'robust' in a favorable way to describe the aggressive foreign policy employed by such a president. In the past, very few United States presidents have had strongmen personalities. Andrew Jackson and Theodore Roosevelt may qualify by temperament, but by adhering to the Constitution, more or less, neither of them truly filled the strongman role. Many U.S. presidents have in fact been nonentities. Calvin Coolidge is memorable for never saying anything ('Silent Cal') and few remember the accomplishments of Franklin Pierce or Millard Fillmore.

Presidents who were actual military men are not known for their military adventures while in office. Dwight D. Eisenhower had proved himself as Supreme Commander of Allied troops in Europe during World War II, yet one of his first acts as president was to arrange a truce in the Korean War. Eisenhower did continue the Cold War and supported large military budgets. John

Birchers called him a Communist, and he was criticized during his tenure for playing too much golf, but Eisenhower was not perceived as either 'strong' or 'weak,' since this had not yet become the frame for judging presidents.

Few knew about the CIA's covert activities in toppling elected governments in Iran and Guatemala during Eisenhower's administration. Even had they known, covert actions could not satisfy the sort of individuals who today want strong leaders to start visible fights with which they can identify. Machos who demand a strong president to "kick butt" around the world may or may not be bullies themselves, but they certainly like to identify with them. Maybe they were the friends or audience of the schoolyard bully.

Bullies: Bullying is usually described in relation to young people. A series of school shootings in the 1990s drew public attention to an increasing problem with bullying in American schools. The majority of school shooters were reacting (in the worst way) to problems they had with other kids who repeatedly humiliated them. The problem is widespread: ninety percent of middle school students report having been bullied. One hundred sixty thousand children miss school each day to keep away from those who threaten and hurt them. Many avoid using school bathrooms, and the reason some bring guns to school is to protect themselves from bullies.

The latest version of this is cyber-bullying. A survey by the National Crime Prevention Council found that more than four out of ten American adolescents have been taunted or threatened by way of social network Web sites and instant messages or text messages on cell phones, with one in eight scared enough to stay home from school.

A UCLA Professor of Psychology, Jaana Juvonen, says that American culture encourages competition and dominance, and so most Americans do not take bullying seriously. Her studies indicate that starting in middle school, most students consider bullies to be "cool." Ridicule and intimidation are accepted, and the victims are further marginalized. The most frequent targets of bullies are gay or thought to be gay, although three out of four kids targeted for being gay are actually straight. About one fourth of bullies are girls, who are more likely to employ ostracism and slander and less likely to perform physical attacks on their victims. Perhaps a third of schoolyard bullies have themselves been bullied, many learn the behavior from their parents, and excessive viewing of violent television programs provides plenty of memes to copy.

What happens to schoolyard bullies when they grow older? They receive more driving citations and court convictions (one study shows that 60 percent of middle school bullies had at least one court conviction by age twenty-four), they are more likely to drop out of school, more likely to become alcoholic. Very often, their childhood habit of bullying turns into domestic abuse.

Smith-Heavenrich says that school bullying exists in every Western or Westernized culture from Japan to Finland. However, the United States, England, Ireland, and Canada have the most bullies per capita. Coincidentally, they are all English-speaking countries. A 2007 UNICEF report on school-age children in over 30 countries asked the question, "Do you find your peers generally kind and helpful?" The United Kingdom and the United States were among the four lowest scorers. Could a cultural tolerance for bullies in school relate to tolerance for bullying leadership or imperialism on the international scene? It is at least one hypothesis to consider.

How exactly does the ideal of a strong president mesh with the ideal of a democratic republic based on three independent branches of government to provide checks and balances? If the executive branch comes to dominate the Congress and the Judiciary, that would seem to frustrate the Founders' original plan. What we hear now is that the executive branch requires extra powers

to manage a crisis situation—the War on Terror. However, an executive bent on acquiring greater power could select, frame, and even contrive an emergency which would then justify his obtaining greater powers to pursue his 'robust' and 'muscular' policy. The ill-defined and open-ended emergency might continue for years. Many people would neither notice nor object because of a second authoritarian attitude, namely, blind submission to authority.

Obey Authority

Find out just what the people will submit to and you have found out the exact amount of injustice and wrong which will be imposed upon them; and these will continue until they are resisted with either words or blows, or with both. The limits of tyrants are prescribed by the endurance of those whom they oppress.
Frederick Douglass, escaped slave, writer, and abolitionist, 1818-1895

It could be that most people, even in the United States, are not yet adapted to democratic self-governing. After all, from the historical view, representative democracy is a new method of governance. A nineteenth century British statesman, Walter Bagehot, noted that monarchy is a strong government because it is intelligible. "The mass of mankind understand it, and they hardly anywhere in the world understand any other."

A person may take his citizenship seriously, may go to every election and vote for candidates, yet generally adopt an attitude of obeying authority without complaint or dissent. Harper's Index reports on a poll in early 2001 that 97 percent of Americans believe that "following your own conscience" is a mark of a strong character. In the same poll, 92 percent of Americans believe that "obeying those in positions of authority" is a mark of a strong character.

One hears a great deal about 'obedience' among conservative Christians: obedience of children to parents, wife to husband, and all of them to God. Conservatives generally also expect strict obedience to the designated authorities of church, school, and government. All this might work in an ideal world where everybody behaves in an enlightened way, but I have never heard of any place or period in history in which this was the case. In the world we live in, what level of obedience do we expect of a real child whose parents are both abusive alcoholics? Or parents who insist that he follow a vocation he is not suited for, or that she marry somebody she does not love? Leaving aside the fact that in the current time and place a majority believes that women should have rights equal to men, what about the obedience of a wife to her husband if he becomes mentally ill or violent? What if he gambles or spends money extravagantly until his family has nothing to eat? Is divorce the only alternative to wifely obedience?

In thousands of cases of pedophilic abuse by Catholic priests that occurred over several decades, one wonders how many of the molested victims confided in their parents or in trusted teachers before the scandal finally broke. Or did a custom of obeying authority contribute to the delay in uncovering the abuses?

In April 1970, four students at Kent State University in Ohio, part of a group peacefully protesting against the Vietnam War, were shot to death by a group of young, insufficiently trained National Guardsman. This tragic occurrence especially shocked students and faculty at many colleges. At a small commuter campus near Scranton, Pennsylvania, several instructors and I were talking about Kent State along with the janitor, who seemed increasingly agitated until he finally said heatedly, "If they were my children and they disobeyed me, I'd shoot them too!" This assertion ended our discussion. It has also left me wary of the virtues of obedience.

You may be familiar with the famous series of experiments performed by psychologist Stanley Milgram. Experimental subjects were instructed by people they thought were scientists to give what they thought were powerful electric shocks to other people hidden from their view by a curtain. Milgram reported his conclusions in 1965:

> With numbing regularity good people were seen to knuckle under the demands of authority and perform actions that were callous and severe. Men who are in everyday life responsible and decent were seduced by the trappings of authority, by the control of their perceptions, and by the uncritical acceptance of the experimenter's definition of the situation into performing harsh acts. A substantial proportion of people do what they are told to do, irrespective of the content of the act and without limitations of conscience, so long as they perceive that the command comes from a legitimate authority.

Milgram found that 65 percent of people he tested were willing to follow the scientist's orders. In thus submitting to an authoritarian order, they repressed their own conscience and adopted somebody else's conscience. Milgram calls this an "agentic state," because the person becomes an agent of the authority figure's conscience.

Another famous psychology experiment was performed in 1971 by Stanford Professor Philip Zimbardo. In the Stanford Prison Experiment, 24 male college students were randomly assigned the roles of prison guards or prisoners in a makeshift 'jail.' In a few days, the guards had become dangerously sadistic and prisoners were having emotional breakdowns. *Democracy Now* notes the resemblance to more recent events. "In scenes eerily similar to Abu Ghraib, prisoners were stripped naked, bags put on their heads, and sexually humiliated." The projected two-week experiment was cancelled after only six days.

A bizarre instance of obeying supposed authority occurred in 2004 when a man posing as a police officer called a Kentucky McDonald's restaurant and directed employees to conduct a strip-search and sexual assault on an eighteen-year old female employee as a supposed suspect in a theft. She sued the restaurant and the hoaxer for $200 million. The former manager of the restaurant, sentenced to five years in prison, testified that he thought he was following an officer's orders. There was insufficient evidence to convict the probable hoaxer of criminal charges.

Although the article did not mention the manager's age, many managers of fast-food restaurants are young and possibly inexperienced in resisting authority figures. This age factor is also evident in torture and abuse of prisoners in Abu Ghraib prison. The military prosecuted mainly low-ranking soldiers, often quite young, with some testifying that they thought they were carrying out directions from intelligence officers of higher rank.

After World War II, many people faulted the Germans for a culture that expected strict obedience to parents, teachers, and public authorities, and for not sufficiently resisting the Nazis. The term 'Good German' then referred to anyone anywhere who passively allows atrocities in his own country. However, the Germans were not uniquely passive, considering that Hitler had terrorized his own people. Some Germans did try to resist him but were killed, forced to flee the country, or ended up in concentration camps as political prisoners. The whole population was subjected to propaganda, from the first regime that mastered the art.

Yet Americans as a whole are challenged by recent actions of our own government that offend world opinion and break our own laws. These acts include waging preemptive war based on flimsy or contrived evidence, permitting the torture of prisoners, incarcerating people for years without charges, using banned weapons on civilian populations, and otherwise breaking the

Geneva conventions of war to which our nation is a signatory. Will we be 'Good Americans' or will sufficient numbers of us resist and challenge such actions?

Defend Authority

Rulers have no authority from God to do mischief.
Jonathan Mayhew, noted American minister, 1720-1766

Few of us can easily surrender our belief that society must somehow make sense. The thought that the State has lost its mind and is punishing so many innocent people is intolerable. And so the evidence has to be internally denied.
Arthur Miller, American playwright, 1915-2005

A third authoritarian attitude regarding leadership is the automatic defense of any 'duly-constituted authority' even when circumstances indicate that the person or group has abused their position of authority. In my part of the country, people of an older generation commonly say that if they got into trouble in school, and their parents learned about it, they would receive a second whipping at home. Apparently few parents in those days could entertain the possibility, that one-in-a-hundred chance, that the teacher had picked the wrong culprit, had misunderstood the incident, was having a bad day, or was a sadistic personality.

A similar attitude of automatic defense often applies to the police. In a local incident a state trooper shot a handicapped man, mistaking him for an eighteen-year-old fugitive from a boot camp in another state. This policeman, the last to arrive of six, had only been on the scene one minute before shooting the handicapped man who was lying on his back on the ground. Immediately several letters to the editor came to the policeman's defense, pointing out how dangerous a policeman's job is, which is quite true, and asking with a hint of accusation why the handicapped man's family allowed him to be on the highway far from his home in the first place? (He had evidently been dropped off there by 'pranksters' as he tended to trust people who might offer him a ride.) However, the policeman was tried and convicted of criminal charges and a civil suit forced the state to pay damages.

One difficulty in the automatic defense of authority is that leaders and officials are not immune to mental disorders of various degrees. Looking over world history one finds quite a large number of leaders who undoubtedly had serious pathologies, from Caligula to Pol Pot. The pathology may be outright psychosis but more often a personality disorder such as Narcissism. Sociopathy is another personality disorder that describes the aberrant behavior of some who rise to the top. Sociopaths are distinguished by the lack of a conscience or empathy with other people or animals.

Canadian psychologist Andrew M. Lobaczewski has researched the relations between sociopathy and the behavior of government and business. Lobaczewski maintains that sociopaths constitute about six percent of any group. He also observed a high correlation between what most people would call "evil" acts and sociopathy. His book *Political Ponerology* presents the framework for a science on the nature of evil in the political sphere (*poneros* is the Greek word for evil). At certain times, he says, "an ever-strengthening network of psychopathic and related individuals gradually starts to dominate, overshadowing the others." The result is a *pathocracy*, a system in which a small pathological minority takes control of society The Nazi regime might be the most obvious, but far from the only such example.

Many of the events of history can only be understood in the light of leadership decisions ranging from incompetent to irrational. The big question is: why do people let this keep happening? In particular, why do they allow obvious sociopaths to reach or maintain power? Lobaczewski says that the great majority of individuals, who are not sociopaths, are unable to understand the thinking and behavior of the sociopath, and may block out the "red flags" that should warn them of danger. People seem especially prone to this denial during times of social prosperity and widespread narcissism. To prevent the growth of pathocracy, he says people everywhere need to learn critical thinking skills, take time to reflect, and practice discernment.

Lawrence Wilkerson, who was chief of staff to Colin Powell when he was Secretary of State, says that the founding fathers would probably be surprised that more presidents had not been impeached. Americans have seldom exercised this Constitutional provision, but Wilkerson says the Constitution's framers likely expected it would happen in every generation. This was their built-in device to prevent the inevitable misuse of power by corrupt or pathological officials.

In the economic aspect of life, some also believe in supporting 'duly constituted authority' which is to say the business owner. This is especially noticeable in Southern states, traditionally anti-union. It is another form of what is, is right. For example, the Internet spreads a list of ten "You Cannots" often attributed to Abraham Lincoln but actually written by a Presbyterian clergyman, William J. H. Boetcker, in 1916. Five of the ten statements seem to tell the working class to avoid any conflict with the wealthy class [such as union activity] with generalities like "You cannot help the poor man by destroying the rich." Similar admonitions to accept the economic status quo with patience were undoubtedly made to serfs under feudalism and to slaves under slavery.

One expression of the automatic defense of authority is some unwritten doctrine that once a presidential election is over, the president and members of his administration should not be criticized. The election is viewed like a sporting event, and after a governing team wins, it is poor form to criticize them until the next campaign. Over three or more decades I have observed this doctrine's effects, and it obviously only works with Republican presidents.

Authoritarians

Power always thinks it has a great soul and vast views beyond the comprehension of the weak; and that it is doing God's service when it is violating all his laws.
John Adams, 2nd President of the United States

Can there really be fascist people in a democracy? I am afraid so.
Robert Altemeyer, *The Authoritarian Specter*

One type of person may be especially prone to follow authority without question: the authoritarian personality. The concept is based on a study published in 1950 by Theodor W. Adorno and several other researchers (*The Authoritarian Personality*). Their initial project was to examine the psychological basis of anti-Semitic prejudices. One result of their research was a test to measure fascist tendencies, the F-scale, still used today. Parts of the test measure the degree of clichés, stereotypes, and superstitions present in a person's thinking; his rejection of imaginative and aesthetic concerns; and his projectivity (tendencies to believe in the existence of evil in the world and to project his unconscious emotions toward others). Still other F-scale questions measure 'power and toughness' (identification with those in power); general hostility and cynicism; and exaggerated concerns regarding sexual activity.

The Adorno theory and F-scale are continually being refined, but most social scientists appear to agree that the original concept describes something real and useful. Political scientist Alan Wolfe says that the 1950 book, despite its age and flaws in method, well describes many current political personalities such as UN ambassador John R. Bolton and former House majority leader Tom DeLay.

Later researchers have advanced this field of study considerably and built up a large database. John Dean (*Conservatives without Conscience)* summarizes the work of Robert Altemeyer, a social psychologist and leading researcher. According to Altemeyer, three clusters of attitudes combine to form right-wing authoritarianism (RWA):

- A high degree of *submission to authorities*, who are presumed to be legitimate.
- A *general aggressiveness,* perceived to be sanctioned by established authorities, and especially directed against those who threaten traditional values.
- A high degree of *adherence to social conventions* that are endorsed by society and established authorities.

The concept of RWA includes those who support a communist regime such as China or Soviet Russia. "Right-wing" has a psychological rather than political meaning, the crucial point being submission to established authority and aggressive support of it. Altemeyer notes that "right-wing authoritarians show little preference in general for any political party." Their prevalence in the modern Republican Party reflects the fact that they are not likely to rise or become office holders in the Democratic Party. Dean says that RWAs are concentrated today in two factions of the Republican Party: social conservatives and neoconservatives,

Over years of testing and statistical analysis, Altemeyer found RWA correlations in several areas, including faulty reasoning. RWAs are more likely to make incorrect inferences from the evidence, to hold contradictory ideas, to uncritically accept evidence that supports their beliefs, and to trust people who tell them what they want to hear. RWAs are also likely to be dogmatic and absolutist. However, one could look at these findings differently: perhaps the lack of critical thinking education and modeling in schools and elsewhere contributes to authoritarian attitudes.

A second group of correlations has to do with RWA prejudices and hostility towards out-groups. Altemeyer says that RWAs are predisposed to harm others whenever they believe that authority sanctions such behavior. To explain this outlook, one researcher (Duckitt) proposes that the punitive socialization of children—more punishments than rewards—turns them into social conformists and leads them to see the world as a dangerous place, a dog-eat-dog world. This contributes to their hostility towards out-groups. The 17th century philosopher Thomas Hobbes envisioned that without a strong central government—in his day, a monarchy—people would simply fight for every scrap among themselves in a "war of all against all." RWAs seem to hold a similar belief.

Those whose parents used corporal punishment and those whose parents used other methods of discipline and guidance seem to mutually misunderstand each other. People raised punitively tend to see all other child-raising methods as "permissive." People raised without the use of physical force fail to recognize the insecurity and hostility that may still operate in adults who were subjected to physical punishment, and their tendency to look for forceful solutions to social and international problems. Much of this difference may relate to the concept of original sin held by Calvinist fundamentalists.

An online article by a fundamentalist minister defends his punitive notions about child-raising by insisting that two-year-olds "lie, cheat, and steal" without hesitation unless punished. To me, this shows a shocking disregard for the stages of human development. A child who has only recently learned to speak is not yet aware of the finer nuances of reality and truth, much less the rules of the game or the principle of private property. If harshly punished for acts he hardly understands, he will certainly harbor fear and resentment.

Another group of character traits that correlate with RWAs are especially interesting. These include blindness to one's own failings and to the failings of authority figures whom one respects. There is also what Dean calls "a remarkable self-righteousness." RWAs don't realize that they are more prejudiced and hostile than most people. "They see themselves as far more moral and upstanding than others—a self-deception aided by their religiosity (many are 'born again') and their ability to 'evaporate guilt.'" Dean quotes evangelical theologian Ronald J. Sider, in *The Scandal of Evangelical Conscience*:

> Whether the issue is divorce, materialism, sexual promiscuity, racism, physical abuse in marriage, or neglect of a biblical world view, the polling data point to widespread, blatant disobedience of clear biblical moral demands on the part of people who allegedly are evangelical, born-again Christians. The statistics are devastating.

Altemeyer suggests that RWAs shed their guilt so efficiently—they go to confession, or turn to God for forgiveness and then feel completely forgiven—that they short-circuit their consciences. But Dean says that the good news is that some of those who test high on the RWA scale, when they become aware of their characteristics, will actually work to change their outlook and behavior.

Researchers distinguish three groups of authoritarians. Those in the largest group, RWAs, are followers. In a second, smaller group are the *Social Dominators*, who seize any opportunity to lead, as they enjoy power over others. The two measures are complementary: "RWA provides submissive followers, and SDO [Social Dominance Orientation] provides power-seeking leaders." Felicia Pratto of the University of Connecticut and Jim Sidanius of the University of California developed SDO theory and measurement. A third group of authoritarians are called *Double Highs* because they score high on both RWA and SDO scales.

Social Dominators tend to be tough and ruthless and are typically men. They see themselves as realists, who believe that the end justifies the means. They are attracted to occupations in which they can enforce status inequality such as law enforcement, prosecuting attorney, and positions of political power. Altemeyer lists measurable traits as "relatively power hungry, domineering, mean, Machiavellian and amoral."

Dean is especially concerned with the third group. Double High right-wing authoritarians are more dogmatic and more ideological than Social Dominators, and are the most racially prejudiced of all groups. They often become leaders of other right-wing authoritarians, and are more likely than other RWAs to act in a manner that some might call anti-social. According to Altemeyer, "They may think of themselves as being religious and they go to church more than most people do, but they believe in lying, cheating, and manipulating much more than the rest of the congregation does."

Altemeyer sees Double Highs as those "most likely to mobilize and lead extremist right-wing movements." However, Dean adds that this sort of person is prone to self-destruct because of his constant aggression and lack of conscience.

Part III: Models

Chapter 11:   Models of Reality

Our view of the world and our own lives is always guided by some metaphor.
Thomas Moore, *The Re-Enchantment of Everyday Life*

Let us go somewhat deeper into how human beings perceive our world. Models are the pictures of reality that we carry in our heads: the way we think things are and the way we think things are supposed to be; our constructs of the world out there; perceptions, images, memories, self-image, role-models, concepts, ideas, archetypes, paradigms; things and words for things.

Model-making is at the very roots of our ability to think. It is so basic that we tend to overlook it. Instead, we focus on our ability to manipulate some of these models in the form of words and numbers, and that ability we call thinking or reason.

The model is basic. We require a subject or an object before the subject can act or the object be acted upon. We also require a model of the action to be performed. The cat of our household has watched us open the door, and so when she wants out she gets on the couch and fiddles with either doorknob or deadbolt. She has some kind of model there without any words for it. Koko, the sign-language-using gorilla, says "Tickle me." Koko evidently has a model for the action and a model for the object, and besides that, she has words to represent and communicate these images—just like us.

To catch a glimpse of the models that live by the millions in our languages, perform a small experiment. Go to the first sentence in the second paragraph above and 'parse' it, not according to grammar, but according to whatever pictures run through your mind. You may well find that you are watching a very swift and unconscious game of charades. With the term 'model-making' did you see a human fashioning some object? Did you visualize roots under the soil? Does the word 'our' call forth pictures of other humans? And what did you link with 'ability to think'—Rodin's statue, perhaps, or a classroom, or a lab full of scientists?

It was so long ago that most of us learned the tricks of reading, and before that of speaking, that you may not 'see' what the words stand for. Yet somewhere in there you probably do. Paul Shepard described the process as follows: "Language is a coding device for recall. What is recalled is attached to an image.... When the events are retold, visual images march across an inner landscape."

No matter how abstract we get, talking about traditional empiricist epistemology or some such thing—using models of models of models—what we say does eventually refer back to some*thing.* It most likely carries pictures and patterns of experience from early childhood: animals; motions, such as carry, catch, pick, run, or see; relationships in space (prepositions); focus of attention ('first' 'and' 'but' 'or'); sense experiences, such as bitter, smooth, fragrant, painful, sweet, or yellow. 'The' is harder—I think of it as an arrow pointing to something.

Even the order of words—the syntax—reflects certain deep assumptions about the way the universe works, who does what to whom and how. For instance, there is a small difference between English and Spanish hunger. In English you *are* hungry: it is your quality, you identify with it as a more or less temporary state of being. In Spanish you *have* hunger: it is a possession, or an unwelcome guest. The difference gives a subtle emphasis in English to the individual who has the quality and, in Spanish, to the entity that visits.

Yet in any language—or with any species!—you may experience hunger without having a word at all. This is something your body tells you, in its own language. Infants know it. Animals know it. Even without the word, the sensation of hunger is itself a model, a proto-model that you learn to recognize very quickly. We humans are the champion model-makers, because of language, but we are not the only ones. Other forms of life also demonstrate the ability to use models, whether perceptions, inherited sequences of behavior, or thought-forms. Even the most primitive one-celled beings can distinguish between their preferred food, less-preferred food, and no-food-at-all.

A child I knew loved to capture snakes and study them in terrariums. But the creatures seldom recognized anything she fed them as 'food,' whether hamburger, earthworms, or even baby white mice which were purchased at the five and ten. Nothing met their definition. They 'knew' what food was supposed to look like, how it was supposed to act, and indeed the whole context of its appearance; but everything here was all wrong. Finally, the budding herpetologist was persuaded to release her pets to the wilds before they starved. Snakes do not need to eat very often, but after a month or so, they look noticeably skinny.

It is much the same with humans and our cultural models. Prisoners of war have died of hunger rather than eat the "chickenfeed" given them by their captors. Starving people receiving aid from the U.S. failed to recognize cornflakes as food. Some of us hardly accept that tofu, or 'rabbit food' salads, or quiche, or fried grubs are edible; and if we were lost or castaway in an unfamiliar desert, forest or tundra, we might die although surrounded by food sources we did not recognize.

Defining Models: Before continuing in this vein, let us survey dictionary definitions of the word 'model.' We are using the term in an expanded sense: however, it already does have a wide range of meanings. Model is derived from the Latin *modulus,* which means "small measure." The noun has a dual aspect. Model refers both to the imitation and to the original of the imitation.

A model may be a physical representation, especially a *small copy*, of an existing object—as for instance an airplane model, or dollhouse furniture, or a ship in a bottle. Many toys are of this nature, as are many miniature objects assembled by adult collectors.

Or the model may be a *preliminary representation* of something that is to come, an architect's model of a building or an inventor's working model. It may be a *pattern, guide, or plan,* perhaps a production model. The pattern may lose one dimension, to be represented by blueprints or other diagram; or it may lose all dimensions to be represented mathematically. Such mathematical models may represent time or even dimensions beyond those which we perceive directly.

A model is also an *example, a sample, or a precedent* for less exact imitation, such as an artist's model. The person posing may move the artist to produce a realistic imitation, an idealization, or a Picasso-style rendition that bears little resemblance to the human form as we usually see it. This kind of model is meant to be observed and reproduced but not with exactitude. Similarly, a model code of laws is intended for adaptation to local conditions. A role model is a person whom we try to resemble not so much in appearance as in behavior, sometimes imitating actual responses but more likely projecting the sort of responses we expect of such a person.

Ideals are models of excellence, *standards of perfection*. Then there are 'model' people, such as model students, model husbands, the All-American boy, and others in the pink of

perfection. As a character proclaimed in the operetta *Pirates of Penzance*, "I am the very model of a modern Major General."

Sending the model backward in time, we might discover an early example or we might postulate an original pattern—the prototype or archetype for all later things of the same kind. A primitive, ancestral organism such as the trilobite is thus regarded as the evolutionary prototype for many later forms. Or the archetype may be, not a fossil, but an idea that is regarded as the source of others. A historical person might be the original: According to D. H. Lawrence, "[Benjamin] Franklin is the real practical prototype of the American."

In the world-view of Idealist philosophies, the first model, form or Idea is believed to have an eternal existence, while all that we perceive on Earth is but a poor imitation of that original model. These ideas, introduced by the Greek Philosopher Plato in the fourth century B.C. and later Christianized by St. Augustine, had a great influence on Western thought up until modern times, when materialism came to dominate philosophy.

Yet another sort of model—it may be a diagram, a three-dimensional physical representation, a verbal description, or a verbal analogy—is intended *to help us visualize or understand something that cannot be observed directly.* You have seen diagrams of molecules with components arranged like tinker-toys, or of atoms ordered like miniature solar systems. Globes help to visualize the whole planet, while flat or topographic relief maps, like the skin of a globe spread out flat, accomplish much the same (although with distortions) for any size region. A verbal description may resemble a graph: "We can visualize business cycles as deviations around a long-term trend." Or it may resemble a three-dimensional model: "The pituitary gland is about the size of a pea, and is situated at the base of the brain." Verbal analogies may aid our understanding (or subtly distort it): "We can think of the leaf as a plant's food factory" or, body as machine, brain as computer, society as organism, earth as spaceship or goddess, memory as tape-recording.

With these verbal analogies we have crossed the boundaries of the dictionary's definitions, which allow a flat sheet of paper to represent the living earth or a mathematical model with no dimensions to represent future events, but which stop short of analogy and metaphor, since these are based on *similarity* rather than *identity*. However, verbal analogy and metaphor also help us to understand experience. Here is an illustration from one of those scientists who are also poetically gifted writers, Marston Bates in *The Forest and the Sea*:

> I first began to realize the essential similarities in plan and function among all the diverse living landscapes and seascapes of our planetary surface—the essential unity of the living world….Life in both the forest and the sea is distributed in horizontal layers….Both have a vertical gradation in light….Life reaches its greatest diversity in tropical seas and tropical forests. Warmth, light, moisture, the three essentials for life, are here always present and dependable.

In his biological analogies between forest and sea, Bates approaches a *paradigm* or large-scale model. It may be that science is the most conscious and systematic set of rules for model-making. Over the years scientists and then the rest of us, have become much more conscious of models as *hypothesis or theory*, an explanation of how things work, often involving other subsidiary models such as computer simulations. We have also become aware of scientific models of larger scope, or even as large as a world-view, known as paradigms. These may be considered as extended metaphors.

The German sociologist Norbert Elias points out the difference between dynamic or developmental models, on one hand, and static models that allow scientists to analyze something

separately from its surroundings or connections. Elias says when you use a developmental model that sees both micro and macro levels as being in "a state of structured flux," it is impossible to separate the levels and you see the unity between them. Dynamic models show the connections even more clearly. We will return again to the importance in science, philosophy, and consensus reality of whether we use static models or dynamic ones.

A number of social trends have contributed to a certain detachment from our models. Some of these are the popularization of science; acquaintance with dream machines such as television, film, and computers; exposure to advertising and PR spin and propaganda; altered states of consciousness induced by meditation or psychoactive drugs; and constantly-alternating fact and fiction that shade into each other thanks to mass media. If physical or mental models can be invented by machines, manipulated by media or chemistry or charismatic personalities, and coexist with countless other models by a mere flick of the dial, then obviously these models are no longer "written in stone." These are the same influences that have separated many of us from a total commitment to consensual reality. In this case, they allow us to question and manipulate our models and even our paradigms.

In fact, some people complain that in their circles the words 'paradigm' and the concept of 'paradigm change' have been overused to the point that they became clichés. If you want to change the direction of your advertising campaign you may "change the paradigm;" or if you do not have enough crust for a blackberry pie, you could change your paradigm and make a blackberry cobbler instead. Such uses trivialize a very useful word. On the other hand, many or most of the population do not use or understand the paradigm concept at all.

Language Models: While many of us are becoming comfortable with these highly abstract and wholly conscious models, the more homely, everyday, and less conscious use of models by all of us has escaped notice. Dictionary definitions and popular uses of the term 'modeling' involve a more or less conscious imitation of something, or a choice of something to imitate, but most of our modeling takes place at a much less conscious level. A great deal of it was learned before the age of five.

For instance, take those many models which are embedded in the particular language that we speak, one of some 3,000 languages still extant. In each language a few words are likely to imitate the sound of what they describe, such as the onomatopoeic "buzz," "chirp," or "boom;" but most words are seemingly arbitrary assignments of sound to sense. They are, nevertheless, mental models for each individual of each generation that speaks this language. Each word once arose, and is learned anew, to represent a generalization of real-world events; or as a generalization of such generalizations.

Take, for example, the words "chair," "run," and "blue." Now stop reading to visualize them, consciously. At this point you have a mental image that is an ideal model of what each word represents; it can later be matched with observed-world events. If the events you observe are similar but do not quite match the model, you may feel a certain dissonance. These events require separate models, perhaps "bench," "jog," or "aqua."

It is in associating with the very young that one can clearly observe the process of modeling language, as each new word comes to stand for a discrete kind of experience, a cluster or series of experiences. "Hi!" is what you say when somebody new appears. "By-by" is waving your hand at somebody, and they wave their hand back. A child may imitate the sounds an animal makes before learning that "cat" or "bird" is the word *de rigueur* in this culture into which she was born. Once the meaning has been assigned, each new word becomes a template for further

experiences of like kind. A few words such as 'the' go along with other words and do not have a picture of their own; but most do, especially at first.

Once matured, we talk faster and think less consciously about each word, forgetting 'what' we are talking about. This is truer for some of us who are 'Verbalizers' than others of us who are 'Imagers.' In either case, we still expect these mental models to have real-world referents, no matter how we combine them or carry them into abstraction, fantasy, flowery phrases, or social patter—otherwise they are 'nonsense' and we can't get a picture at all.

Words do require a continuous matching of model to the thing modeled. Over time, words acquire new meanings and shed others. As fewer horses are harnessed for work, the word 'whiffletree' disappears; and if nuns discontinue wearing the head cover called a 'wimple'— which was once worn by women generally—the word will be used only by scholars. Thousands of new words are added to the dictionaries each year to represent new objects or concepts such as 'glitch,' 'blastoff,' 'co-anchor,' 'king-size,' 'blog,' or 'the greenhouse effect.' Individually, the matching of word to experience is a lifelong process, from the baby who discovers that not all four-legged creatures are called 'dog,' to the adolescent constrained to use the absolutely most current peer-group slang, to the older person debating whether he wants to self-identify as a 'senior citizen.'

Many words have their source in metaphors and other analogies: 'beetle-browed,' 'ravenous,' 'pigeon-toed,' and countless others have passed into common use. Other words easily call forth an image: 'out/doors,' or 'hang/over,' or 'pin/up.' In some cases the analogy or image is hidden in the etymological history of the word's meanings. Slang images are particularly vivid: "He just went bananas!" conjures up a scene of an ape in frenzied action, greedily grabbing bananas, or throwing them. The term 'chiphead' for a computer enthusiast calls forth the picture of a person whose braincase is filled with computer chips. Once as I read Dr. Seuss to a little one, the line "a bird flying in the sky now caught his eye" caused the child to flinch in revulsion, as she took the phrase "caught his eye" quite literally. So were we all such literalists once upon a time.

The emotional overtones, the connotations of words give power not only to poetry but also to preaching, political propaganda, and anywhere that words are used to influence people. A presidential election may hinge on words and their accompanying frames, on worsening connotations of the word 'liberal,' the meaning of 'competence,' the definition of 'patriotic.' The point is that the language that comprises most of what we call our mental life is a veritable treasure trove or minefield of models, of which we are largely unaware.

Self-Image, Scripts

The self is a story line that develops in the head, very much like a fictitious creation. Yet it forms the basis of most people's sense of who they are, and that sense, of course, is reinforced by the surrounding world.
Eckhart Tolle, German spiritual teacher, b. 1948

Another sort of model that plays a large part in our lives is self-image, which is to a great extent the internalization of what other people said about you or what was implied by how they treated you. Sometimes, however, a private self-image persists for many years even though at variance with images that other people have of us, leading to all sorts of internal and external struggles, to human tragedies and triumphs, comedies and plot complications. Some pick out a lifelong direction when they rebel at the models someone held out for them to fulfill—the

minister's son, the little lady—and some are actually fired to accomplishment by naysayers who are sure that they could never possibly get anywhere.

The self-image is a construct, but at an even deeper level—according to some psychologists and spiritual teachers—even one's Ego or feeling of 'I' is a mental construct, a model. The philosopher P.D. Ouspensky says that the ordinary man or woman, which is to say, the person who has not undertaken spiritual training or self-examination, is not a unity or permanent 'I,' but is many, always different. "The illusion of unity or oneness is created in man first, by the sensation of one physical body, by his name [and] by a number of mechanical habits which are implanted in him by education or acquired by imitation."

Since widespread use of computers, some of us call the mechanical portions of our self 'programs.' Without self-awareness a person may be run by his/her programs one after another. To the degree that we are automatic we are not conscious; in fact, very few of us humans do attain a fully conscious life. However this is no reason to give up trying! It is of great urgency for six and a half billion human beings to increase our own degrees of consciousness, for it is upon our awareness and decisions that the future of the human race ultimately depends. The point of Ouspensky (and his teacher Gurdjieff) and many other spiritual guides is that without such self-awareness a human may act as mechanically as do our present-day computers or as those invertebrates which are driven mainly by instinct. Cultural programs invisible to us and individual habits repeated whether appropriate or not, are just as mechanical as the spider's impetus to build a web.

So the Ego itself is a model, one to which in ordinary circumstances we cling very tightly, because it focuses our survival as an individual entity. Ego defense mechanisms are those coping mechanisms that have developed to defend the integrity of an ego (the model of 'I') from pain, conflict, and dissolution. Perhaps the self-image is also an attempt to demonstrate that I really am always one person, a verifiable 'I.'

Not only a static model but a narrative model or script may be selected—although unconsciously—at an early age. This script can influence the general course of a person's life. It may be a family pattern, or it may follow the life of a famous person or of a character in a story or well-known folk tale. One common family pattern is that a child who is born after another child in the family has died is expected to fill that other child's place. Another family pattern is that one child in a large family is unconsciously selected to be the one who takes care of younger siblings, even into adulthood; or the one who takes care of elderly, disabled parents, perhaps foregoing marriage to do this. Young adults in a family where someone has committed suicide are, unfortunately, somewhat more prone to follow that model of how to act when faced with difficulties. But therapies exist to help make people aware of scripts that are controlling their actions.

On his own the child may make a more imaginative selection of script. A precocious girl read a story by Louisa May Alcott in which one child takes blame for a theft in order to protect the child who actually did the stealing. Our modern-day girl, deciding to imitate the altruistic behavior she had read about, went to her second-grade classroom, and proceeded to accept blame for whatever any other child did to get into trouble. Since it was fairly obvious to one and all that our heroine had not performed any of these misdeeds, she was generally ignored and soon stopped modeling on the story character. With more reinforcement, however, a child may become stuck in such a role, playing the martyr, becoming the class clown and later the life of the party, turning into rebel or saint or hot shot by imitation more than deliberate choice.

A classic film, "The Breakfast Club," chronicles how five urban adolescents who are becoming stuck in their roles as Jock, Genius, Kook, Princess, and Hood are forced to deal with each other during a Saturday of detention. This unintended group therapy enables them to break out of their individual molds. They learn to like each other and find out how much they are alike.

Role Models, Social Models: Trying on roles is a natural part of growing up. Instead of a life-long script that does not allow for growth and change, most of us pick out people to be temporary role models in the course of childhood and youth, whether a shining example, helpful mentor, or just somebody who has been there before. These are the ones with memes to imitate. The first models are older siblings and parents; later, playmates and schoolmates; then more conscious choices of older children, teachers, skilled adults, famous people. British entomologist Michael G. Emsley says, "I am convinced that the friends you make when you are young are the most influential people you will ever meet," noting that he would never have become an entomologist had it not been for a childhood friendship with a boy two years older who collected butterflies. Similarly, a talented musician says that he entered his field because the boy across the street took piano lessons.

But if the neighborhood has a dearth of positive role models, then the pimp or drug dealer who dresses well and drives a flashy car may look like the one to imitate. Or, says Jerry Mander, if all the heroes and superheroes one watches on television and in the movies solve their problems by superior force; if women appear to achieve fame, fortune, and connubial bliss on the basis of their fashionable beauty: then the culture has just presented us Rambo and Barbie as role models.

When someone picks a role-model known to him chiefly through the printed word or celluloid film or television screen—whether that role-model is patriotic hero, one of the saints, a sports or entertainment figure, or a totally fictional character—he may end up with at least a career choice, if not a script for life, that has a lot of gaps between the dotted lines. An example of fictional modeling on the large scale was reported at the end of 1987 by educators in San Mateo County, California, who found in their annual career inventory of high school students that a majority wanted to be lawyers like the ones portrayed in the television series "L.A. Law." Students purportedly made this decision for reasons such as the following: "It's so glamorous. They all drive BMWs and have affairs." Law school admissions were up in the fall of 1988, which some educators attributed to the effect of this program.

Note that whenever modeling oneself on another person, whether fictional, living, or dead, one models on the basis of one's own understanding of that person and on one's own choice of qualities to be emulated. Some decades ago during the days of psychedelic religion, a number of young persons emerged from their LSD trips like so many innocent chicks ready for imprinting by a new teacher or guru. In one group, the followers drank Dr. Pepper because they noticed that their spiritual leader drank it. To the guru himself, drinking Dr. Pepper was the very least of his spiritual qualities. However, it was the easiest to emulate. Because of the tendency of young people to model *in toto* or indiscriminately, the public expects sports and entertainment idols to behave like good role models, according to their various definitions of what that means.

The most powerful role models are Mother and Father; and it is virtually impossible that day in and day out they will always appear without blemish. Eventually most of us grow to see our parents as real human beings like ourselves, no larger than life, mixed in motives and behavior. Yet the small child whose emotions and understandings are preserved in our unconscious may

see them forever in terms of absolute worship and absolute betrayals. No matter how this child views its parents, he or she will continue in many ways to act like them.

Cultures in different times and places have their ideal personality types. For instance, Eastern European Jews looked up to the scholar, while contemporary Americans tend to idealize athletes, extraverts, and entrepreneurs. Role models of the most all-encompassing kind are provided by religions. Christianity presents its followers with the models of saints and martyrs but one above all, Jesus Christ: prototype of a fully realized human being, as well as the Son of God. There remains a choice of which qualities and aspects of his life to imitate.

A long procession of apostles, saints, social reformers, and most of all, millions of humble and unknown Christians have attempted to lead lives of love and selflessness like that of their Savior, modeling their behavior on his compassion and forgiveness, non- violence, and commitment to speaking truth. But modeling is based on one's own understanding and motivations and so some, poorly acquainted with the written records and church tradition surrounding the life of Jesus, proceed to give him their own cultural prejudices and political beliefs. He is said to be against fairy tales, reincarnation, gun control, and the Panama Canal Treaty. He is said to support certain football teams, certain nations, and certain political parties and candidates in U.S. election campaigns.

Jesus may wear an aspect of the warrior, the stern judge, or the businessman. People are convinced of exactly what Jesus would say about abortion or homosexuality, although he is never quoted in the Bible about these issues; yet they do not suggest what his opinion would be about corporations or genetic engineering or pesticides. A quote from Matthew 15:9 is relevant to the custom of modeling oneself on a Jesus who is modeled on oneself: "Uselessly do they worship me, for they teach as doctrines the commands of men."

Ideally one's god embodies the highest qualities of which humans are capable. Otherwise I see no point in having one.

Summary: Models, then, are basic to our language and to how we see ourselves, others, the planet, and universe. Models do not seem to be the same thing as memes—they are not exactly bits of behavior that can be imitated. Yet they may assist memes in spreading. While at one level models are abstractions and concepts, something very like a model may lead a one-celled creature to recognize its food or a mate. Would you call these archetypes, instincts, memes[2], evolutionary blueprints, universal Ideas, or something else entirely?

Chapter 12: Inborn Models

The Idols of the Tribe have their foundation in human nature itself, and in the tribe or race of men. For it is a false assertion that the sense of man is the measure of things. On the contrary, all perceptions of the sense as of the mind are according to the measure of the individual.
Francis Bacon, 1561-1626

While cultural conditioning and personal motivations contribute greatly to the shape of our models and our perceptions of reality, still there is an underlying structure to our mental life because we were born of the species human on the planet Earth. Senses, nervous system, and brain evolved over several million years so that we would make certain models, or make models in a certain way. There are blueprints of models in our genes; hereditary networks are built into our nervous systems; there are automatic circuits. For instance, certain reflexes—grasping, sucking, blinking at light, startling at noise—are common to all healthy human infants at birth. Some circuits, especially those that control voluntary movements, are yet to be completely hooked up; but they will be hooked up in due time so that the baby will smile, babble, sit up, crawl, walk, and talk.

The newborn also has a sense of balance, can taste sweet and salty, can smell odors, and is sensitive to heat and cold, touch and pressure. The infant's senses are 'tuned in' to certain stimuli, such as the smell of milk. "It is no accident," says Joan Steen Wilentz, "that these transducers are primed to pay special attention to sound energies that correspond to the human voice, to light reflected from a human face, to pressures from hands."

While the newborn is color-blind, in the course of development it will see the world as a blend of red, blue, and green due to the presence of three light-sensitive pigments found in the retina. The primates most closely related to humans also have three genes for color vision, while more primitive monkeys have only two. An interesting sidelight is that geneticists have found that some people have extra copies of the gene to see green, which could evolve into a more expanded color vision, millions of years hence, if there should be evolutionary pressure to see a new hue. That we see the world in Technicolor instead of B/W, as dogs and sheep see it, is due to our hereditary models.

To develop our senses requires maturation, a sequence of growth and experiences. If a young animal is experimentally deprived of important sensory inputs or of normal motor movements, it is later unable to reach perceptual competence. The eyes, in particular, must learn to see. Vision is a relatively late and very complex sense: 70 percent of the body's sense receptors are in the eyes, with the highest ratio of nerves to muscle. The newborn can see, but she must learn to recognize objects and faces. This formative experience comes so early in life that we are not aware of the remarkable nature of every act of sight. In looking at any assemblage of objects we can distinguish form, depth, and distance; yet what we see literally, upside-down on the retina, is only the surface of things, rather like an abstract painting. The separation into objects, their shaping and relative position in space, are all learned.

Sense learning is aided by ***inborn organizing tendencies***. In the early twentieth century, Estonian biologist Jacob von Uexkull set up a theoretical framework for perception that presented an alternative to the prevailing attitude that living processes are simply physical-chemical machines to be investigated with the concepts and techniques of chemistry, physics, and mechanics. Sixty years later, experimental work supported his concern with the inborn organizing principles of mind, not only in humans, but also in other creatures.

Following Uexkull a decade or two later, the Gestalt psychologists Wertheimer, Koffka, and Kohler also affirmed that the human is inherently a pattern-forming animal. The Gestaltists set forth a number of inborn organizing tendencies, such as the ability to distinguish an object from its background. Recent research substantiates that organizing principles are built into perception, even at the level of individual cells.

Studying visual perception at the cellular level with microelectrodes, Torsten Wiesel and David H. Hubel of Harvard Medical School found that the process begins in the retina with 'on-centers' and 'off-centers.' Their work suggests "a beautiful structural and functional organization all along the visual pathways, culminating at the cortex in a system by which edges and contours of objects can not only be detected but also abstracted from the particular part of the retina originally stimulated." Hubel and Wiesel received a Nobel Prize in 1981for their discoveries.

Note that we see edges and contours. Gregory Bateson points out that the eyeball has a continual tremor (*micronystagmus*) which causes the optical image on the retina to move relative to the rods and cones. In this way the rods and cones continually receive events that correspond to outlines in the visible world. That we see outlines and edges separating one thing from another, just as we see a Technicolor world, is part of our human nature. "Wise men see outlines and therefore they draw them," said the poet William Blake.

Other researchers at New York University used a magnetic-field sensor to discover that the brain has a "tone-map," that is, different cells in the brain respond to different pure musical tones. It is evident that sense perceptions are modeled for us even at the level of cells and groups of cells, with every sensation a marvel of organization among the smallest parts of our body.

Likewise, as Edward O. Wilson reports, there are inborn models that contribute to our sense of beauty (aesthetics). In a study of responses to graphic designs, Belgian psychologist Gerda Smets used electroencephalograms to measure arousal (blockage of alpha waves by beta waves). Smets found that maximum arousal results from seeing a figure with about 20 percent redundancy (repetitiveness) such as a spiral with two or three turns, or ten triangles neatly arranged. People were less attracted to a picture of a single geometric figure, or a very complex and irregular pattern

It seems that we have evolved responses for the optimal complexity of art and design. This gives new meaning to the old saying, "I don't know anything about art, but I know what I like!"

Such experimental discoveries lend support to the theories of Uexkull and the Gestaltists who insisted that 'the whole is greater than the sum of its parts.' Inborn organizing tendencies, as formulated by Max Wertheimer, include the tendency to see a Figure-Ground relationship; also the tendency for elements with the same "common fate" to be grouped together. Thus a dog asleep on the rug might seem, to an infant, part of the rug; but when the dog moves, all the stimulus elements that make up the dog have a common fate, they move together, so that a figure is organized. The stimulus elements that make up the rug do not move, they also have a common fate, and so the ground is organized.

Another tendency described by Gestaltists is Closure, or the tendency to complete a fragment. It is by closure that we see a meaningful picture when presented with a news photo or television image composed of dots, or an impressionist painting similarly composed of flecks and splashes of color.

The primary sense perception, according to Uexkull, is Space, called forth by our own movements, touch sensations, and muscular sensations. He spoke of the 'local signs' in the skin, felt in series, and the 'direction signs' that connect local signs and which are also present in muscular sensations. Uexkull described the way we learn to locate what-lies-outside-ourselves

by means of an inborn principle: three bisecting planes that cross in front of our heads: Right/Left, Above/Below, and Before/Behind. He then says that space is the connection of the possibility of movement with the planes of direction. "We may say that space precedes all experience as the form of intuition common to all experience."

This may all sound rather mystical, yet lab research indicates that the way birds, fish, and mammals detect positions or changes of position does closely mirror the classical analysis of space by Euclid and Newton, with axes running up and down, right and left, front and back. Joan Wilenz states that Descartes and Newton developed algebra and calculus so that any point in space could be located relative to these three axes and its motion described in terms of simple equations. Most telling is the fact pointed out by Gregory Bateson that the words right and left cannot be defined, or at least not without recourse to compass directions or clocks. He says they are words of an inner language.

We have learned that the vestibular sense organs of the inner ear work with the kinesthetic receptors of muscles to locate us in space, to tell us whether we are moving or standing still, and to indicate whether we are balanced or unbalanced. These organs also work together with the eyes. English neurophysiologist Sir Charles Sherrington coined the word *proprioception* to describe the sense of Self, which is similar to Uexkull's sense of space.

A most remarkable aspect of the way our brain is set up to decode touch sensations is the homunculus, 'dwarf man'—or rather, two homunculi, each invisibly mapped on one hemisphere of the brain as the brain's image of the skin on the opposite side of the body. The map corresponds to the varying densities and sensitivities of the nerve endings in different parts of the body's skin: a grotesque caricature, with the areas of greatest skin sensitivity much enlarged: big face, large lips, and huge thumbs. Rabbits, cats, and monkeys also have maps on their cortex that correspond to a body image.

Experiments suggest that young infants display advanced levels of perceptual organization from principles that are apparently inborn, although they may require both time and normal experiences to develop fully. We are born with a great many potentials for viewing the world in certain ways. These are organizing principles from our species inheritance.

Learning Disposition or Bias: It is difficult to compare intelligence between creatures, because each species is disposed to learn certain things rather than others. This is called a *learning disposition*. Ethologist Niko Tinbergen (The Study of Instinct) notes that "Some parts of the pattern, some reactions, may be changed by learning while others seem to be so rigidly fixed that no learning is possible….Different species are predisposed to learn different parts of the pattern."

Humans too have learning dispositions, along with a time-table. For instance, the first half of the second year is the time when most human infants learn to walk, having previously prepared themselves by crawling, creeping, and standing up. During the years from one to four, the child accomplishes a remarkable task—learning the basic vocabulary and syntax of its native language. If not permitted or encouraged to walk or talk at the nature-appointed time (perhaps because of gross neglect), a child may have difficulties in learning these basic skills later on.

During the phases of increased readiness to learn, a creature may be *imprinted* by certain kinds of experience, as though it were tuned in to some impressions more than others. In a classic case of imprinting, a newly-hatched group of ducklings found ethologist Konrad Lorenz the only living individual in sight and dutifully followed him around as if he were their mother. It would be to the obvious advantage of the duckling to find and follow mama as soon as it hatches.

In the United States, several generations of human parents are acquainted with the research of Dr. Arnold Gesell, who studied thousands of children to find that three-year-old or eight-year-old behavior was identifiable in children who were otherwise quite different in personality. So parents expect the 'Terrible Twos,' when children tend to say "No" to almost any suggestion, the out-of-bounds four and six-year-olds, and other predictable phases. However, I have not seen any evidence about whether the same childhood phases are identifiable in cultures outside the U.S.

Gail Sheedy's book *Passages: Predictable Crises of Adult Life* brought public attention to the possibility that there are natural phases of human development throughout the life cycle: "It occurred to me that what Gesell and Spock did for children hadn't been done for us adults...Where were the guidelines on how to get through the Trying Twenties, the Forlorn Forties?"

The idea of distinct life stages is present both in ancient Hindu scriptures and in Shakespeare, but the first scientific study was performed by psychologist Else Frenkel-Brunswik, who examined the biographies of 400 well-known persons to conclude that every person passes through five sharply defined phases of adult life. Sheedy also drew on the work of Erik Erikson, who concerned himself with the sequence and crises of development. More recent research indicates that many of the periods of adult life (in the United States) last about seven or eight years.

Sheedy herself studied 115 people, using in-depth interviews, all with American, middle-class people between 18 and 55 years old. This group of subjects was not representative in nationality, social class, and age—for there is surely more than one phase between the ages of 55 and 100—however, the external markers of their lives are well-nigh universal, such as the choice of life's work, marriage, child-rearing, and the birth of the first grandchild.

People's views on many matters, as well as their habits of thinking, may well depend on whether they are single, householders, or elders. In many non-Western cultures, for instance, older people who are no longer encumbered with the responsibilities of raising or supporting children are considered free to deepen their knowledge and develop their spiritual abilities in their eldership, sometimes assuming visionary leadership roles.

Twenty-Year Human Psychogenesis: Anthropologist Paul Shepard not only identified phases, he further claimed that the phases of childhood and adolescence help define who we are as a species. According to Shepard, the common statement that the human is an unspecialized animal is based on a misunderstanding. Even in terms of our anatomy, there are many specializations such as the human foot, eyes, pharynx, hand musculature, and others. Yet one of the most unusual and extremely specialized of our traits has to do with our life cycle and maturation schedule. The prolonged period of human dependency is composed of a graded series of stages, each with unique traits, to adapt us to a way of life: hunting and gathering. Remember that our kind lived in this manner far, far longer than we have lived in civilization.

Shepard notes that the larger species of monkeys have a learning period of about five years, while the great apes need ten. Our species doubled that period to a twenty-year "human psychogenesis" that evolved because it aided survival. A long childhood is not a direct advantage in the quest for food, but it is the time to develop intellectual capacities through speech—an evolutionary experiment.

Describing how the child initiates speech in its second year, masters basic language skills by four, and rapidly develops vocabulary from then on, Shepard says, "It seems clear that such a time-critical, preprogrammed behavior did not develop primarily as a hunting-communicating

skill or even as a tool of cooperation. [These are] biological adaptations connected with the growth of mental life."

Shepard calls the acquisition of language "preprogrammed." According to a theory first developed by M.I.T. professor Noam Chomsky in the late 1950s, a specific faculty for language is encoded in the human brain. We are born with this "universal grammar" that applies to all languages. In the last 45 years, researchers across the world have formally analyzed a number of languages to find their organizing principles. By now Chomskyan linguistics is the accepted theory. The only exception seems to be an isolated Amazonian tribe called the Pirahă who have an unusual language and culture. Some hypothesize that the Pirahă, who are extraordinarily resistant to outside influences, may have a language more like early human language.

The human mind begins to develop in contact with things, says Shepard, with the nipple being most important at first. The baby also studies faces and has a schema for identifying them. Soon the sources of stimuli begin to be localized from within or without. Shepard says, "The beginnings of true self-consciousness focus about a body surface, or body boundary." The baby's developing ego and body schema is a genetically programmed part of infantile experience, just as much as the fact that he or she will smile, babble, sit, crawl, or stand up at specified ages.

When true speech begins around age two, it is added to the infant sound system. Shepard says, "People retain the emotive language of primates as a separate language all their lives." [So that's where we get all the whooping and hollering at ball games!] At the same age of two, the double cerebral hemispheres separate their functions into the so-called 'left brain' and 'right brain.' Shepard does not go so far as to say this, but it seems possible that the right brain functions of pattern and image-forming retain the ancient animal wisdom, while the more linear left brain functions developed to aid the evolutionary experiment of speech.

Shepard discusses the nature of children's informal games as part of our human psychogenesis. Play is widespread in mammals and especially in primates. It is even more important for humans. The developmental expression of this genetic program is "age-critical." The peak of play is from about nine to twelve, when "the hunger for constant themes is an age-group need and is part of the construction of a coherent and predictable world." He notes that age-specific games of boys, such as stalking and being stalked, ritualize the way of life of our hunting and gathering ancestors.

But in the three decades since Shepard wrote, electronic games and television-watching have supplanted a good deal of the outdoor play of previous decades. If stalking games prepared boys for their hunting roles, what are youths preparing for when they passively watch images of men who escape across city rooftops and through alleys, engage in car chases and shoot-outs, and outwit each other with modern spy technology? Or what do they prepare for with games of battles between hierarchies of armored monsters?

Young girls traditionally have played with dolls, and it is worth noting that in the United States, at least, the baby dolls of yore have been to a large degree replaced by fashion dolls that model a consumer way of life—not mothering, nor adventure either.

How does children's play relate to the growth of cognition? The basic processes of reasoning and knowing are developed during the first ten years during the classification of natural and social forms. This development is equally true of modern industrial and modern pre-industrial people. Shepard quotes anthropologist Claude Levi-Strauss: "There are probably no human societies which have not made a very extensive inventory of their zoological and botanical environment and described it in specific terms."

According to Shepard, the maximum number of categories of such forms in all peoples is about 3,000. He says it may not be very important what kinds of objects are provided by the culture, whether "27 kinds of snow or 27 moods of camels"—or, one may wonder, whether 27 kinds of mythical alien warriors or 27 kinds of Barbie doll costumes. The important thing is that the brain matures only by making such distinctions and working out a classification system or taxonomy. The developing human mind first sees the similarities and then selects significant differences between two similar kinds. All such taxonomies are fundamentally alike, says Shepard, no matter what kind of culture it is or what objects the culture thinks are important. (But might it make a difference if the child learns by classifying consumer products, pop culture icons, and abstracted facts measurable by tests?)

The third of these genetically programmed stages is adolescence. This is the time for initiation into adult life but also much more: for self-realization, identity, commitment, and for poetic and religious understanding. Shepard says that during most of the human story, adolescence has been a time for supreme experience, "a highly specialized, profoundly rewarding period of human life, an evolutionary adaptation." Yet today the process has broken down, and we tend to see adolescence as humorous at best, conflicted and dangerous at worst. According to Shepard, Western culture has wasted and perverted the potentialities of this period, especially in male youths.

For 20,000 generations (half a million years): boys of twelve or so were led from the family circle to a training, learning group under the tutelage of a master of the tribe. Shepard says:

> Men everywhere develop in the same pattern, by allegiance to a group of brothers with whom they undergo the forging and testing of their advancing maturity…The trials of initiation strengthen not only the ability to endure pain and improve skills but the capacity to endure alone the whole scale of the non-human environment.

Self-realization depends on the integration of the left hemispheric language mode with the right hemisphere and its artistic, pattern-seeking functions, so that the youth can "be initiated into cosmic taxonomy and its social extensions" [totemism]. Adolescent rites of passage are a dangerous time, built on the theme of Death and Rebirth, with the individual programmed to regress into a less mature, less differentiated phase. Initiation ceremonies revive the infant imprints of birth, the rhythms of day/night, sun/moon, male/female, waking/sleeping—the archetypes common to all humans—by repetition, exaggeration, and ritual. Only by regression and symbolic rebirth can the initiate become a whole man. "Thenceforth natural things are not only themselves but a speaking."

However, the world of our psychogenesis no longer exists. The individual is caught between his own inner calendar and the distortions of society, so he generates substitutes that often cannot fulfill their function. Lacking adolescent rites of passage, boys and young men (and increasingly girls and young women) devise their own dangerous and dead-end substitutes such as reckless driving, abusing alcohol and drugs, participating in vandalism (suburban and rural kids) and gang-warfare (ghetto youths).

Girls and young women may be swept along with these anti-social and self-destructive activities, or if reenacting their ancient roles as young mothers, find themselves in a no-win situation without social support. The adolescent readiness for poetry and cosmic questions is channeled into popular music and romantic nihilism. The young man's readiness for commitment and idealism is channeled into evangelism or military patriotism. In fact, the

military experience is often presented as the major rite of passage for men in American culture. But it occurs at least six years too late and does absolutely nothing for cosmic awareness.

Of course, many of us do manage to mature through the culture, discovering idealism, identity, and mentors. Shepard, however—who can be as scathing as Isaiah—finds most of us to be on the verge of cultural madness, as witnessed by our destruction of our own habitat. It is not human nature that "besets men's minds" but the rank distortion of it. We were designed for one sort of world but are living in quite another.

To summarize: we are born with certain principles of organizing our perceptual and conceptual world, certain timetables of development for our physical, emotional, and cognitive life. These principles and timetables adapted us very well for a way of life that has, however, been in constant change for the past five thousand years. Francis Bacon saw that our inborn models, or Idols of the Tribe, interfere with our rational superstructure; for him this was a drawback to overcome. Paul Shepard calls to our attention that each successive addition of rational or cultural superstructure interferes with the timetables that served us very well for several million years. He suggests that by now we may have become so distorted that we no longer understand the reality of our situation.

Perspectives from Animal Behavior: One further perspective concerning inborn models comes from the relatively new science of ethology, the study of animal behavior in nature, rather than experimentally in labs. Most creatures react only to those stimuli that relate directly to sensations of hunger, thirst, sexual readiness, or some other biological drive originating within the body. The situation with human beings is much more complex, but not utterly different. The intricate rituals and rationalizations of culture have roots in those same basic needs.

How does any organism select the sensory messages that are relevant to its survival and that of the species to which it belongs? After all, there are far more events occurring at any one time than any of us creatures could possibly pay attention to. Again, the principles of selection are more or less inborn (more, with insects; less, with human beings). The process involves innate releasing mechanisms (IRMs) that initiate nerve impulses, remove inhibitory blocks, and allow a certain hereditary coordination to operate. As the saying goes, "All you have to do is let the dog see the rabbit."

The ***Key Stimulus*** that opens the IRM 'lock' is usually a combination of stimuli. A key stimulus might be a certain color and pattern of bird's plumage that informs another bird whether it is male or female, adversary or potential mate or juvenile. Another term for such a stimulus is a *releaser*, a clear and conspicuous signal that is bound to release behavior patterns. Shepard says, in *Thinking Animals*:

> *A robin defends its territory not against another robin but against a red patch--cloth, feathers, any material--as long as it is about the right size and has two legs. People still behave this way in the use of emblems, insignia, logos, icons, and other simple signals, as well as toward a host of innate releasers.*

Besides these IRMs, there are also unselective reflexes activated by a wide variety of stimuli. Such behavior requires learning and experience; most human behavior is of this sort rather than the 'key/lock' mechanism. Those IRMs that respond to very specific stimuli are what people usually call 'instinct' and relegate to creatures other than ourselves. The matter is not quite that simple, however. Humans do have innate reactions to certain key stimuli. Hans Hass mentions olfactory stimuli that warn us away from the ingestion of rotting substances or excrement that

would be detrimental to health. Optically, key stimuli include steep drops, large approaching bodies, threatening faces, and darkness, all of which elicit fear reactions. Pictures or actual viewing of naked persons of the preferred gender, and the sight of babies, particularly for women, are strong stimulus releasing behavior patterns. Even in these cases, however, learning and experience can modify the behavior pattern. Thus, some people go out of their way to ride on roller coasters or watch horror movies, perhaps in an attempt to overcome the innate fear reaction.

As Shepard pointed out, humans have cultural signals that act like innate releasers: flag, crucifix, outstretched hand, or policeman's badge. Individuals also have their own idiosyncratic fetishes or nostalgia devices. Shepard says that human speech relates to the more ancient reactions to simple signals: "For all animals the perceptual world is composed of a limited number of signals—some inherently recognized, some learned--which serve as releasers for behavior. [Humans went further] so that *in speech the word becomes a releaser that triggers an image."*

We will return more than once to the relationship between speech and older behavior patterns on which it built, for it is a major thesis of this book that we humans are not quite the rational beings we believe we are. Regardless of what we are potentially capable of being, most of us operate most of the time out of cultural habits that are not instinctual but might as well be.

For now, let us note that to be effective, releasers should be as simple, unmistakable, and infrequent as possible. This is true of any transmitter-receiver relationship. Simpler transmissions have the advantage: they require simpler receiving apparatus and less energy. If the transmission is unmistakable, there will be fewer failures of communication. If signals are infrequent, there is less risk that other animals will use the same signal, thereby giving rise to dangerous misunderstandings.

One could also apply these transmitter-receiver rules to flirting/courting behavior, or to national or international affairs, insofar as one conducts these on a subliminal level. The Reagan administration was notable for its use of the phrase "sending the right signal" or its reverse; and such language is still used by politicians and media about economic and international policies. ("Bernanke *sent a signal* to the markets.")

The next two behavior patterns widespread in animals can also apply to humans. One phenomenon described by animal behaviorists is **mood transmission**, to which humans, like other social animals, are subject. In our case, specific "expressive movements" by other members of our species evoke reactions—of fear, anger, or laughter—that are hard to control. Mood transmission is usually the basis for crowd behavior in audiences and riots, and sometimes in smaller groups. I think of children sitting in the dark and scaring each other by telling ghost stories, or a group of giggling girls at a slumber party, or, more seriously, of a posse or lynch mob.

The second behavior pattern has to do with exaggeration. Ethologists devised experiments with dummies that exaggerate natural key stimuli. They found that many creatures react more strongly to the supernormal dummy than to normal stimuli. A ringed plover, for example, will abandon her eggs for an artificial one that is four times as large. Although humans do not act in such key/lock fashion as does the plover in this situation, we are still quite susceptible in many ways to **supernormal stimuli**.

Our self-manipulations such as advertising, propaganda, salesmanship, and pornography, as well as the arts, entertainment, and sacred drama or ritual, all make use of key stimuli and supernormal stimuli, as well as mood transmission. For advertising, a key stimulus to sell

anything from copy machines to sports cars is the image of an attractive young woman, preferably lightly clad, in close proximity to the product. Unconsciously, males may think of the consumer object as a gift to the female, associating it with the female's receptivity. Political advertising may use key stimuli eliciting fear, or a "feel-good" mood transmission technique ("It's morning in America!").

Wartime propaganda deliberately utilizes negative mood transmission. Propagandists paint enemies larger than life: they become supernormal stimuli to evoke fear and anger. To spur on our own warriors we may invoke positive key stimuli: Mom, the Flag, Freedom, God, and the Girl Next Door. With greater sophistication, and with unpopular wars or political policies, people may see through these techniques designed to 'push their buttons.' However, in stressful circumstances even the more experienced and educated are susceptible to simple, deep-rooted signals that bypass their critical faculties.

Salesmanship is a delicate dance of subliminal messages between salesperson and prospect, which depends greatly on mood transmission. As one salesman told me, "You have to be smiling yourself when you talk on the phone to your prospect" and, "If you can get him to laugh, you've got him hooked." As for pornography, it is designed to release behavior patterns (usually masturbation) with key stimuli of genitalia and 'supernormal' breasts that are actually at the far range of normal human variability.

Shepard notes that: "Art may have begun as a super-signal." He says that the mask, in particular, has concentrated, superhuman force. Recall that infants respond very early to the sight of a human face—it is a basic imprint. Actors are masters of the nonverbal signals to which we all respond. Film and television actors specialize in facial expressions; stage actors, mimes, and dancers work with the body's signals. Throughout the world, certain broad gestures are recognized—the raised fist, the hands outstretched in supplication or begging for food—and of course the universal, innate smile.

In a movie theater, when a baby or young animal is projected onto the screen one hears the spontaneous "o-o-o-h" from some of the women in the audience. Ethologists have analyzed in some detail those facial traits and body proportions of young creatures that project helpless innocence and charm, serving to release protective behavior while inhibiting aggressiveness among adults of the species or even cross-species.

Horror movies and thrillers evoke innate fears of darkness and sudden attacks by predators. Shepard points out that "Monsters are often giants. [They are] exaggerated signals that multiply our normal reactions." In the ironic movie criticisms by "Joe Bob Briggs," who focuses on mediocre movies that play in drive-in theaters, Briggs enumerates breast sightings, body counts, rolling heads, and other instances of mutilations, sexual sensations, and grotesqueries. Briggs thus demonstrates that the main attraction of these films is their parade of key stimuli, the common denominator of our mammalian inheritance, in supernormal exaggerations. Film viewers often discriminate between violence that is an integral part of the story and that which is "gratuitous." Another place to find the manipulation of key stimuli and supernormal stimuli is in headline stories appearing in sensational tabloids sold in the supermarket.

We could use borrowed ethological concepts to examine many another manifestation of folk culture, mass culture, or high culture. These include the persistence of 'bigger than life' heroes, from Gilgamesh and Hercules to Superman and the Incredible Hulk. We note the shock tactics of avant-garde artists and rock musicians. The popularity of Walt Disney characters and products as well as paintings of 'big-eyed' children and creatures depends on exaggerating the physical traits of vulnerable young animals and children.

It remains for someone to trace the effects of mood transmission in political campaigns, revolutionary and nationalist movements, Wall Street, and other economic markets, and the fluctuations of public opinion reported by public opinion polls.

Chapter 13: More about Models

A map is not the territory and you can't eat a menu.
Alice O. Howell, Jungian psychologist, 1922-

Models are tools of thought, but as Thoreau warned, humans often become the tools of their tools. Let us begin by clarifying the definitions used here, although not everyone may agree with my use of these terms. First, a meme is a bit of information, something to imitate. If the others, especially the popular ones, are wearing purple t-shirts, you look for a purple shirt to wear. Memes have something in common with emotional contagion. A memeplex is a collection of memes that work together. They may perhaps comprise an ideology. An ideology is something one can imitate, can put on and wear. But by themselves, memes and memeplexes don't add up to thinking.

Models are closer to the core of thinking. One could describe a model as a meme-once-removed, a more abstract or static version of what to imitate—or maybe of what to look at and consider. One can examine models in one's head, comparing and contrasting them. This shape or thing is like that, is related to that, and goes with that one. Some of these have six points and some eight, but they are all stars, or starfish, or snowflakes.

A script is a model moving in time. Since I am the black sheep of the family, always forced to sit in the corner or stay after school, now that I am an adult I will find new ways to misbehave. Or in a story script, the characters are models. In a melodrama they are flat or stock characters such as hero or villain or hapless maiden, and their interactions are also scripted or foreordained. A better story, drawing from a wider range of models, has rounded characters with more unpredictable interactions.

Metaphors are *comparisons*—the perception that two elements are similar in some way even though they come from different domains. However, metaphors sometimes manage to turn into models. For instance, if you personify other countries, they may become heroes or villains in a melodramatic script.

Frames, on the other hand, are constructions of *context* from the individual's unique memory, her culture, or the manipulations of a propagandist or advertiser to impose metaphors or scripts on events.

Some memes are very persistent and become mental habits that recur over centuries. Some models are so elemental that they become hereditary, or partly hereditary, in the form of archetypes. At some point, persistent memes also become "hardwired" and act like instincts.

Double and Triple Messages: Memory is a kind of double vision. You remember how it was back then; at the same time you are perfectly aware that you are here and now. Imagination is another kind of double vision. You picture in vivid detail what is going on someplace else—perhaps the cheering crowd at the big game—but meanwhile you are actually in the workplace, prepared to react to significant stimuli there. Then there is "future thinking." Perhaps you are folding the laundry and simultaneously making plans for a dinner party. Modern humans are aware that they multitask, performing several jobs concurrently (as do the computers to which the term multitasking was originally applied). Somebody may be simultaneously tending a child, stirring the pot, talking on the cordless phone, and looking out the window at a cat stuck in a tree.

At some point in evolution, creatures became capable of holding two thoughts at the same time. A plover pretends to have a broken wing, in order to lure a predator in the opposite direction from her nest. Or the fox doubles back on his tracks in order to confuse the trail. Thus the possibility of deceit and strategy entered the world, long before humans perfected them.

Another behavior based on double modeling is play, which is quite common among mammals such as the dog family as well as otters, porpoises, and the young of many species. Here is an example of what happens with my dog, a twenty-pound terrier-poodle. Suddenly, without warning he growls ferociously and pretends he is going to attack me, nipping at my heels. Somehow, both of us know that it is a game. I growl back and chase him with a water sprayer used for the flowers. The dog gets to run and bark, and makes up new rules from time to time. For instance, if he lands on the rug next to the front door, he is 'safe.' The rules do not allow me to spray water on him there.

Play depends on being able to hold two thoughts at the same time, to pretend or make-believe, to follow a ritual as if it were important for survival even though it is just for stimulation, for 'fun.' Among humans, this game of pretend also became the ancient art of drama, often accompanied by masks, costumes, and dancing. It has many forms in the present, including technological forms that sometimes seem to have taken over our lives (see next chapter).

Literalism

> *Words cannot bear sharp definition in daily use.*
> Marshall McLuhan, Canadian media scholar, 1911-1980

The culturally-induced insistence on literalism in language could be considered a deficiency or handicap somewhat like an individual's dyslexia or hearing loss. It is based on a complete misunderstanding of the nature of language. Literalism assumes that words and sentences have only one possible meaning, and are as definitive as $2 + 2 = 4$. It follows that no interpretations are needed or wanted.

But in fact, many words have multiple meanings, as you may see by looking in the dictionary at a common word such as 'run.' Not only do children run a footrace, but politicians run for office, you may get a run in your hosiery, in an economic panic there may be a run on the bank, when it is cold your nose runs, you may have a run of good or bad luck, and so on.

First of all, then, you must decide from the context which of these meanings applies. Context is the surrounding text and other information. By considering the context, you are already getting into interpretation and have left literalism behind.

Secondly, while you have decided on a dictionary-type meaning (in a very fast and largely unconscious process), note that this is a *denotative* definition. However, words also have *connotative* meanings, or emotional overtones. There is for instance an important emotional difference between the terms 'plant nutrients' and 'sewage,' or between 'voluptuous' and 'obese.' You need to have an ear for those differences or you will never win friends and influence people. Again, by deciding on the connotations of the word, you are interpreting what you read.

Third, there are idioms. Every language has a number of distinctive ways to phrase things, and one of the harder parts of learning a new language is to learn all these idioms. They are seldom found in the dictionary. For instance, you might say "He has a clear shot at getting the

manager's job." Yet promotion has nothing to do with guns or hunting. Or you might say, "Put your money where your mouth is" or "He was scratching out a living as a farmer." Idioms are often ancient metaphors.

Fourth is figurative language, including metaphors, personification, symbols, and so on. ***Metaphors cannot be interpreted literally***. A metaphor compares two things implicitly, not spelling it out as a simile does. One definition of metaphor is "the capacity to perceive a resemblance between elements from two separate domains or areas of experience and to link them together in linguistic form."

If a text contains figures of speech—metaphors or allegorical symbols such as the Whore of Babylon or monsters with seven heads—these will not submit to literal readings. Whose interpretations do you then accept—that of biblical scholars or that of authors of Christian fantasy-horror novels such as the Left Behind series? In either case, it is an interpretation, not a literal reading.

Fifth, every language goes through many changes, so that what a word meant twenty years ago may not be exactly what it means today. If you have ever read Chaucer's "Canterbury Tales" in the original Middle English, you know that only six or seven centuries ago the English language was almost as hard to understand as a foreign language. A few centuries earlier, Old English definitely was a foreign language. Or take slang words, many of which pop into the language, become very popular for a few years, and then disappear. Other slang stays in the vocabulary for centuries. You may not even realize that it is slang or you think it is recent slang. For instance, if you say something is "peachy," meaning very nice, that use of the word was first noted in 1599. But other words change meanings over the centuries, adding to the translator's difficulties.

Let us look at some imagery in the Christian Bible. "Wisdom has built her house; she has hewn out its seven pillars. She has prepared her meat and mixed her wine; she has also set her table" (Proverbs 9:1-2). Wisdom is here personified as a woman preparing a meal, perhaps for guests. There is no way to read this verse literally, since wisdom is an abstraction that cannot build houses and set tables.

In the Song of Songs we find poetic lines such as the following: "My lover is to me a cluster of henna blossoms from the vineyards of En Gedi" (1:4) and "Your eyes are doves" (1:15).

Lamentations 1:15, concerning the Babylonian conquest and destruction of Jerusalem in 586 B.C.: "In his winepress the Lord has trampled the Virgin Daughter of Judah." A footnote says that the winepress was a common metaphor of divine judgment in the Bible. A powerful and often-quoted metaphor is "They sow the wind and reap the whirlwind" (Hosea 8:7). It is literally impossible, of course.

How could one read metaphors literally? The notion almost makes my head hurt, yet apparently some people think that this is what they are doing all the time.

How We Learn Metaphors: Young preschool-aged children are quite good at creating metaphors, almost always based on a physical resemblance between the elements compared. For example, a dust mop is a cat, or a bald man has a barefoot head. At eight or nine years old, children come to understand metaphors of a different sort, expressive or psychological, such as "the flowers danced for joy," "his heart turned to stone" or "dark clouds ate the sun." Before that age, a study by Howard Gardner and Ellen Winner suggests, children may be missing the point of many stories and poems they hear or read.

However, as their comprehension of other people's metaphors gets better, children tend to lose their early metaphorical creativity. In the middle of childhood there seems to be a literal stage, part of "a general bent toward conformity and rule-guided behavior." Having just mastered the categorical boundaries, the child is not ready to violate them. Children of this age group also prefer to draw very realistic pictures and to dislike abstract art.

By adolescence most are ready for metaphors again, although adolescents and adults seldom surpass their early inventiveness. The same study that tested preschooler's metaphoric production also tested adults, finding they too focused on physical qualities rather than emotional or psychological ones. Creative/artistic persons are the exception.

Gardner and Winner note the importance of metaphoric processes in early learning, when the child looks for similarities between objects or situations, and also in the peaks of creative thinking. To this, we might add the metaphoric nature of much of the language we use daily. The ability to understand and work with metaphors is a highly important ability. It is possible that for some reason many people maintain the conformist, rule-guided behavior they learned in elementary school, and never do really appreciate metaphors or recognize the metaphorical basis of language.

Multi-Dimensional Consciousness

According to a scientist in the Human Genome Project, about half of human genes are "expressed only in the brain."
McNeil/Lehrer News, Dec. 20, 1988

How many points of view are we allowed at a time? The question may surprise those who assume that one is all that anybody can handle. But many of us play multi-dimensional consciousness, trying on other viewpoints, empathizing with other beings, or acting the hero or villain in a play. A debater must know two opposing viewpoints. People who speak a number of languages learn to shift gears from one complex of cultural-linguistic assumptions to another. Stage performers and public speakers such as politicians interact with a group mind which encompasses many individual viewpoints, and they are not the only ones who play to the crowd. The rest of us do it on a smaller scale, maybe at a party or in the classroom.

Among non-humans, porpoises are able to carry on conversations with several of their fellows simultaneously.

The Red Queen in *Through the Looking Glass* was in the habit of thinking three impossible thoughts before breakfast. To think the impossible is to have at least two points of view at once, otherwise you would not know the difference between possible and impossible. Metaphor, irony, humor, even the syncopated beat of jazz have something to do with two ideas happening at the same time, even if one of the happenings is a non-happening, a frustrated expectation as in humor and syncopation. The frustrated expectation can be funny, or in the case of the jazz beat it can be stimulating and enjoyable.

Highly creative people can tolerate and enjoy a fair amount of multilevel consciousness, which is perhaps a way of saying that even as adults they can play. But others may interpret multilevel consciousness as insincerity, confusion, alienation, or amoral relativism.

It is true that attempting to juggle more viewpoints than one can handle will create problems, such as the politician who promises contradictory benefits to two different audiences. There are hypocrites, who pretend to be one sort of person but act like another. Some people communicate double messages in which the explicit (verbal) message and implicit (emotional) message do not

agree. The result may be a crazy-making double-bind that can drive people, especially children at the mercy of such adults, to actual insanity. Their situation is 'damned if you do and damned if you don't.'

Some people just do not 'get' humor of any kind. Others cannot distinguish between irony and sarcasm. They are tone deaf to certain shades of meaning. If you don't mean what you say literally, they think you might be saying something hostile or deceptive.

Many people do not care for fiction, either. I worked as a school librarian in a Pennsylvania farming community where many parents and even some elementary school teachers did not value story books. They tolerated them simply as a means for teaching small children to read. By eight or nine, most little boys came into the school library demanding only 'fact' books. Some of the teachers taught the children that non-fiction books were "true books" and fiction was "lies." Besides denigrating fiction, their definitions promoted an uncritical reading of non-fiction.

How did it come about that a book or statement that is not literally true at a single level seems, to some, to be a lie? It may be that the ability to tolerate multiple points of view is the result of increased experience and exposure to diverse people in a mobile, urban society. The inability may be related to poor reading skills. It may be that people who have been much lied to, especially at an early age, the victims of double messages, require a diet of one-dimensional, literal truth.

Another possibility is that a great many people have suffered from the loss of participating consciousness, which is denied in the prevailing worldview, to the point that they cannot use or appreciate imagination, art, or anything that is not purely objective and instrumental— "practical," they might say. This is not a new problem. In the novel *Hard Times* (1854) by Charles Dickens, the educator Gradgrind founded a school where teachers teach facts, nothing else. His own two children grow up unable to deal with their personal lives, and Gradgrind eventually realizes that his method of education has failed.

I tend to think that these narrow limitations on thought exist mainly because of the persistence of authoritarian institutions and ideologies that have discouraged play, diversity, and dissent; they are carried from one generation to the next through family culture.

The Trouble with Memes

The actions of a few individuals, or even a single one, can dramatically shift the evolutionary future of a particular population fundamentally because individuals are keen copiers. These shifts are not always due to one behavioral strategy being more fit (in genetic terms) than another. An individual did something original, and it simply became fashionable.
Lee Alan Dugatkin, *The Imitation Factor*

Like other creatures, we humans have a bad habit of imitating some action not because it is such a great idea, but just because the example is there. In this way we get copycat crimes, men who beat their wives because their fathers beat their wives, or kids who try to imitate dangerous stunts by stunt men (as the saying goes, "Don't try this at home"). A letter to "Dear Abby" says, "My wife and I are professional freight truck drivers. When a new auto ad comes on the air, we know we will see that kind of driving within 24 to 48 hours."

In another kind of imitation, forty-one year-old Margaux Hemingway, model and actress, committed suicide just as her famous grandfather Ernest Hemingway had done thirty-five years earlier. The author's brother, sister, and father had also killed themselves. The Japanese culture has historically approved of suicide for those in disgrace and for star-crossed lovers. In the West,

there have been and may still be suicide websites where people can make suicide pacts online or encourage each other to take this irreversible step.

The television series "24," popular with millions including many U.S. troops, is about a federal agent, Jack Bauer, who 'plays a little rough' with his suspects. Many would call his interrogations torture. The show is not alone, either. The advocacy group Human Rights First says that there has been a huge increase in torture scenes on prime-time television shows since 2001, from 42 scenes in 2000 to 228 in 2003 (a five-fold increase), with over 100 such scenes in both 2004 and 2005.

The U.S. military sent Brigadier General Patrick Finnegan to ask "24" producers to tone down the torture scenes for two reasons: first, the effect on America's reputation; second, the effect on American troops especially interrogators, some of whom are taking their cues from what they see on television. General Finnegan, who teaches a course on the laws of war, says the series promotes illegal behavior. He said, "They should do a show where torture backfires. The disturbing thing is that although torture may cause Jack Bauer some angst, it is always [portrayed as] the patriotic thing to do."

Bad Old Ideas: Several ancient concepts or memes are still around in one form or another despite the fact they never were any good. One set of them is *collective guilt* and *collective punishment,* the idea of punishing a group for the actions of a few. Israel has acted according to this concept with the Palestinians in Gaza, and there is evidence that the United States military has behaved in a similar way in Fallujah and other places in Iraq. Collective punishment is so counter to elementary fairness that I think a five-year-old would see through it. The fact that Yahweh seems to support this behavior in the Old Testament, for example in Joshua 7:10-26, does not make it any better. I cannot follow a moral guide who is acting less ethically than I do.

Another meme that needs to be retired is '*making an example of*.' Recently in my region a nineteen-year-old man with no previous record was given a thirty-year prison sentence for dealing a small amount of marijuana, and the reason given by the judge for this harsh sentence was something about sending a message to others. This reasoning reminds me too much of decimation in the Roman Legions. To punish a group of soldiers for mutinous behavior or cowardice, commanders had them divide into groups of ten which picked one out of every ten by lot, and then commanders forced the other nine to kill the tenth.

Less lethally, a decimation system called "rank and yank" has been applied in business, notably by Jack Walsh, the former CEO of General Electric. This plan has the employer fire the ten percent of employees with the lowest evaluations, each year. Supposedly, this improves economic performance. I can hardly think it would improve morale, or the health of employees.

Both collective guilt and punishment, and 'making an example of' may be found at times in the school system and other places where children are managed in groups.

Another bad idea is *hereditary guilt*—sins of the fathers visited unto succeeding generations. Descriptively, it is sometimes true that one generation passes down its problems to the next. But proscriptively, the idea that one *should* hold people accountable for their ancestors' mistakes is extremely unfair. On the other hand, one might help *compensate* for actions in the past from which one is currently benefiting at the expense of others whose ancestors were victimized or did not have the same opportunities. I see this as a different idea from hereditary guilt.

All of these memes are distantly related to the mindset that finds terrorism a permissible tactic in political or guerrilla warfare.

The Persistence of Memes: It must be noted that while meme theory is a handy way to describe the many processes of imitation in humans and other animals, the concept has not been widely accepted by scientists. Nor should we assume that a 'meme' exactly equals an 'idea.' Those who write about memes sometimes appear to have a glorified notion of them as the basic stuff of our intellectual life. But real thinking, critical or creative, goes beyond purely imitative processes. Rather than automatically imitating something, a 'thinker' will first look at it in the round, upside-down, and inside out. This is 'reflection.'

Some also assume there is a 'free market' in memes or ideas just as they assume it in economics. The problem is that no truly free market exists in either arena. Even in the marketplace of ideas we find monopolies, protectionism, and restraint of trade. Some people have a 'bully pulpit' or own a chain of newspapers, while others, perhaps women or minorities or dissidents, seldom get to speak, or nobody listens. Some ideas are taboo. Certain names attached to a meme carry it much further than other names do. There is chronic censorship by omission and distortion.

Looking at history, one sees how cultures which are more aggressive and have better weapons have spread their memes far and wide. That still doesn't speak for the intrinsic superiority of their cultural notions. As analogy, I lived in a town in Mexico where some resident gringo kept a male dog, a Dalmation that spread his genes far and wide perhaps because he was better fed then the local curs. Thus a high proportion of the market dogs were now spotted. Regardless, I don't think Dalmations are superior to golden retrievers or border collies or Chinese pugs.

Something hard to explain with the concept of memes is the persistence of certain ideas and actions over long periods of time. Sometimes these long-lasting ideas, institutions, or social systems are unpleasant and seemingly dysfunctional, too—so why would they persist? Military historian Sir John Keegan notes that humans are creatures of habit:

> Some of the institutions they have adopted and perpetuated in the twelve thousand years of recognized social existence since the recession of the glaciers at the end of the last Ice Age have been very peculiar indeed ….Slavery and the subordination of women persisted as long as they did because they had become habit.

After fifty years of studying and reflecting about war, Keegan says that like slavery and the subordination of women, war has much about it that is habitual. He wrote a history of the Great War (World War I), a conflict which he found in some ways to be a mystery. Keegan could not explain why a highly civilized society spent four years killing millions of its young people "to achieve an outcome which left it far worse off, both materially and culturally, than it was before war began."

But Keegan says, "Habits persist because the means to practice them lie to hand." The means to make a great war were abundant. "The arsenals bulged, the list of reservists ran off the page. It was, in a sense, easier in 1914 to go to war than not to go to war."

Habit explains a lot. Persistent memes repeat again and again without any history attached— they carry no context that might warn us. Thus the behavior pattern reproduces itself despite the bad consequences and regret, the hangover that followed the last binge.

There are situations in which the bad habit, let us say ethnic hatred, goes underground for a couple of generations, and you think that it has gone for good—until it surfaces again in a frenzy of ethnic cleansing. The seeds of hatred may be transmitted through village lore, or sometimes through written texts as in the following example: Not very long after Gutenberg's first printing

press, two Dominican monks were commissioned by the Church to produce a book about witchcraft. The result was *Malleus maleficarum*, or *The Hammer of Witches (*1486). This legal, theological document was largely based on the folklore of Alpine peasants about witches, and was intended to carry out Exodus 22:18: "You shall not permit a sorceress to live." The book gave detailed information about detecting witches, and it approved torture to produce confessions. Both Catholics and Protestants used *Hammer* as their standard handbook, and the book contributed greatly to witch-hunting hysteria for the next two centuries, going through 28 editions from 1486 until 1600.

In *The Assault on Reason*, Al Gore says recent research in neuroscience may explain the persistence of traumatic memes that continuously fuel world conflicts. Physiologists have discovered a new type of neuron in a particular region of the brain. These *mirror neurons* provide the human capacity to feel empathy. Neuroscientist Dr. Ramachandran describes this discovery:

> Researchers in Toronto found that in human patients some of these cells responded not only when the patient himself was poked with a needle—as expected—but also fired equally when the patient watched another patient being poked. These neurons (mirror neurons) were dissolving the barrier between the "self and others—showing that our brains are actually "wired up" for empathy and compassion.

Empathy and compassion are definitely good for the species. However, this same capacity also allows vicarious traumatization. Stories about tragedies and injustices pass down from one generation to the next and people react for centuries to the ancient traumas. We see this dynamic at work in Northern Ireland, Africa, the Balkans, Middle East, and elsewhere. We may even find the American Civil War or the ancient grievances of Celtic peoples from their persecutions in Britain still affecting modern-day political and cultural life in the United States.

Gore adds that television can produce such "vicarious traumatization." This seems to have happened with the events of September 11, 2001, which still frighten large numbers of Americans even years afterward.

Archetypes: Some concepts last even longer than a few centuries, suggesting an inherited 'deep structure' of the human psyche. Archetypes are forms or symbols in the collective unconscious, which is "a reservoir of the experiences of our species" according to Carl Jung, who introduced the idea of archetypes in 1919 to explain the many recurring themes he found— as a practicing psychologist—in dreams, waking imagery, myths, religious symbolism, occult disciplines and tribal lore of indigenous peoples. He considered them "apparently universal patterns of human cognition [that are] born anew in the brain structure of every individual."

Jung believed humans have an inborn maturational plan to develop motifs such as the Trickster, the Wise Old Man, the Hero and the Hero's Journey, the Great Mother, the Child, the Maiden, Paradise, anima (feminine principle in the man), animus (masculine principle in the woman), and the shadow (disowned parts of the personality). Note that most of these themes are elements in many myths. Other very old motifs, evident in the *I Ching* or *Book of Changes* from ancient China, are the Brothers, the Family, the Warrior, the Well, the Chinese elements of Water, Fire, and Wind, and the Cauldron, source of nourishment.

Until recently, most scientists discounted Jung's idea of the collective unconscious, partly because some of his followers presented it as a "Universal Mind" or metaphysical reality. Jung himself saw the collective unconscious as a biological reality. Proponents of the Jungian model

might say that the collective unconscious arises in each individual from shared instinct, common experience, and shared culture, generalized into a basic level of the unconscious that is mostly identical in everybody.

Students of animal behavior have found the prototypes of the archetype in instinctive animal behavior. Evolutionary psychologists now see the human mind as a system of information-processing mechanisms that have evolved within the nervous system and "specialized to produce behavior that solves particular adaptive problems such as mate selection, language acquisition, family relations, and cooperation."

My Models Are Better Than Your Models

I would wish to be a member of a community that judged itself on the happiness of its children rather than on the unhindered flow of its mechanical inventions.
Thomas Moore, *The Re-Enchantment of Everyday Life*

Sometimes when a fellow human's actions are based on an odd conception of how things are, it is quite evident to the rest of us. If, for instance, he declares himself to be Napoleon Bonaparte or some other personality whom the rest of us believe to have been unique, we could respond with an almost-syllogism: There was only one Napoleon. He died. Therefore, you are not Napoleon. Or if an adolescent starves herself in the belief that she is too fat—a mistaken belief, we assume, because no one else sees the body image that she does—then we place her in the frame of a defined disease, anorexia nervosa.

Most instances are not so clear-cut. When speaking of inappropriate models, it is in terms of our own and presumably more appropriate models. However, the 'normal,' the community standards can be wrong. Dissidents have been involuntarily committed to mental hospitals because their models did not conform to the models of those in charge. Others have been burned at the stake. Again, one person's definition of 'lunatic' is another's definition of 'genius' or 'fun person.' Nevertheless, we have some rough tests of whether a model is useful or accurate for an individual or society, based on various criteria such as self-consistency, a body of scientific knowledge, effect of the model on survival and health of whoever holds the model, and so on.

How do we identify an appropriate model historically? The sheer persistence of certain notions puts the stamp of approval on them, while crude tests such as defeat in warfare eliminate other concepts. For instance, the landscape of history is littered with obsolete weapons and the ghosts of those who battled in armor against crossbows, or fought with spears against gunpowder. Yet a group's survival for centuries, or its victory through battles, still does not guarantee the intellectual, spiritual, moral, or evolutionary 'rightness' of any notions associated with superior military, technological, or mercantile models. Ideas are sometimes stronger than armies; one saint may outweigh an empire.

People may hold a custom for centuries, yet in retrospect or from abroad it seems to be completely 'wrong.' Thus, today most Westerners agree that the customs of ancient Chinese foot-binding and African female circumcision are totally and universally wrong. However, Westerners have not looked at a number of their own customs that future societies may term barbaric including male circumcision, breast implants, women's high heels, widespread carrying of handguns, prizefighting, unnecessary surgery, and capital punishment, not to mention wars and wholesale destruction of the planet.

There exists a longer time-scale than history, which is even harder to second-guess. Biologist Daniel G. Kozlovsky maintains that models (which he calls 'images') are vitally important to the

survival of a species. Kozlovsky notes that any organism is "a system for taking selected parts of the environment and organizing them into its own being, a system for rearranging them into its own essence, into its own image of how the world ought to be." This modeling or image-making is the engine of evolution. Living forms whose genetics and developmental processes provide an appropriate image of their surroundings (which constantly change since they are mainly other evolving forms) are those that are adapted to survive and keep their gene pools going. Kozlovsky says ironically, "You and your species code are but a thin veneer of two billion years of trying to save your image."

Using the Wrong Models

A shift of wordage, an alteration in the direction of historical emphasis and the most profound ideas may emerge in a new garb and their parentage forgotten and ignored.
Loren Eiseley, *Francis Bacon and the Modern Dilemma*

Ideas, like material systems, are subject to entropy, to deterioration and loss of energy. Idea entropy may occur when we borrow a model to use in a second, entirely new situation. Sometimes the results can be positively creative but often not, as illustrated by the following dubious examples of borrowed models:

Conventional gardens space **plants in rows**, but the row pattern developed in order to accommodate farm machinery on big farms. The idea of row planting then transferred to backyard gardening, where intensive planting makes more sense.

Columnist James Carroll says that when President Harry Truman announced what became known as **the Truman Doctrine**, he began 60 years of national bipolarity. Truman said "At the present moment in world history, nearly every nation must choose between alternative ways of life."

> Nine days after announcing the Truman Doctrine, the president issued an executive order mandating loyalty oaths and security checks for federal employees, the start of the domestic red scare [and] the "paranoid style" of American life....The habits of mind that defined American attitudes during the Cold War still provide consoling and profitable structures of meaning, even as dread of communism has been replaced by fear of terrorism.

Carroll points to a number of current developments that sound like "1947 all over again," such as U.S. policies that stimulate arm races in China and Russia, or a 2008 Pentagon budget of $620 billion, double what it was only ten years ago. Carroll indicates the Truman doctrine was a bad model to begin with that has not improved with reuse.

Killer T cells: Immunologist Fred Karush complains that metaphorical language has been the "primary vehicle" for explaining basic concepts in immunology but with mixed results. Karush says that the use of metaphor may be necessary because the only way we can describe a new phenomenon is by reference to concepts we already know. But metaphors can limit thinking, too, as in the popular media, where most immunological metaphors are military; for example, Karush says the killer T cells are pictured as shooting or bombing.

One example of the overuse of military metaphors in the health field was *Time*'s cover story on the immune system (May 23, 1988) titled "The Battle inside Your Body." Richard Leviton says of the article:

> The human immune system is described in language loaded with military-wartime images: enemies, lethal target, prey, predators, siege, invade, assault, destroying, alien, biological warfare, move in for the kill, carnage, etc. A ferocious Armageddon is being staged within us, *Time* suggests.

Leviton asserts that the prevalent medical paradigm with its military images fosters distrust of the human body and the processes of nature. In contrast, the holistic approach emphasizes prevention, lifestyle changes, healing with the patient's participation, and an understanding of why disease occurs.

The germ theory of disease has lent itself to paranoid thinking. Some individuals are excessively afraid of germs and wash their hands constantly. The mother of one of my childhood friends not only poured boiling water over fruits before peeling them, she also poured it over the breakfast shredded wheat to kill any germs (killing appetites as well).

The worst misuse of the germ model was in Nazism, misapplied as the notion of cleansing society of ethnic and religious minorities viewed as germs or collectively as a disease. Eduardo Galeano says that death squads in Colombia call themselves "social cleansing groups."

Directly using **military models**, Newt Gingrich prepared for the Republican takeover of Congress in 1995 by sending top aides and lawmakers to the Army for sessions in military strategy. They attended seminars on information management, strategic thinking, and the art of battle decision making. The visits became a political issue several years later, when a report by the Pentagon Office of the Inspector General said that the Army should have charged the politicians for their training. Some might see this as a misapplication of the military model to the deliberative body of a democratic society.

Is it social welfare, infrastructure, or business? People apply several contradictory models to the public education system. According to Arkansas Senator Blanche Lincoln, many in the federal government look at education as a social program. Instead, says Lincoln, it is the foundation of our infrastructure. On the other hand, a number of business leaders and think-tank ideologues want to impose a business model on education. They assume that people young or old are mainly motivated by competition and that market forces can cure anything wrong with education.

A petition opposing the No Child Left Behind Act (a law that reflects this business model thinking) argues that NCLB "emphasizes minimum content standards rather than maximum development of human potential [and] neglects the teaching of higher order thinking skills which cannot be evaluated by machines." The Educator Round Table also suspects that the way public schools are rated and ranked under NCLB will gradually label them all failures so that they can then be 'saved' by vouchers, charters, or privatization.

Western movies: Films about the Old West were popular for many decades, even in Europe (Italian "spaghetti Westerns"). In this country they have often provided memes and models such as the Marlboro Man. Neoconservative writer Dinesh D'Souza suggests that recent U.S. foreign policy is (and should be!) a script based on this film genre:

> America needed to take action in the heart of the Middle East. Remember the old Western movies where John Wayne is called into town as the new sheriff to apprehend a bunch of cattle-stealers? He

goes into the bar, where the bad guys are shouting and jeering at him. He doesn't know who the culprits are, but he finds a couple of obstreperous hoodlums and slams their heads together, or pistol-whips them, and then he walks out of the bar. The message is that there is a new sheriff in town. After 9/11, I believe, the Bush administration wanted to convey this message to the Islamic radicals. In Saddam Hussein, Bush located an especially egregious hoodlum who would become the demonstration project for America's seriousness and resolve.

This fanciful narrative includes the bad old meme "Making an Example Of" as well as notions that the United States is the sheriff for the Middle East and that Islamic radicals (of whom, incidentally, Saddam Hussein was *not* one) equate to "obstreperous hoodlums" or cattle-rustlers. Incidentally, the hatred of cattle-rustlers was not limited to the American frontier. The Borderers from Northern England and Southern Scotland who settled the Colonies in such large numbers were a herding people in the old country, where livestock rustling, raiding, and clan feuds were quite widespread for several centuries. D'Souza is pushing some very old buttons.

LAPD as Urban Army: The Los Angeles Police Department made the news again in May, 2007 with a violent response at the end of a peaceful immigrant demonstration, violence similar to previous uses of excessive force in a 1967 anti-war rally, the Watts riots, the Rodney King beating, and other incidents. Despite some successes by the new police chief (appointed 2002), he has "not focused on the paramilitary culture and us-against-them mentality that still seems to persist in the LAPD," according to a USC professor of criminal justice, Joe Domanick, who said this warrior culture began during the time William H. Parker was chief in the 1950s. Parker imagined the city's police force as an *urban army* and felt that they were all that stood between society and anarchy. This model persists with a subculture of officers who routinely use excessive force.

Dystopias are hip. This is a brief introduction to how techno-dystopias may seem to be techno-utopias. It is an ongoing story of mutating memes and models. Assuming that you are not already a fan of s-f let me explain that the field of *speculative fiction* includes not only science fiction, but also alternative history (what if the South had won the Civil War?) and utopian and dystopian novels (heavens and hells on earth). Speculative fiction (s-f) is full of interesting ideas and is nothing like the old Buck Rogers space operas or sci-fi movie monsters and disaster thrillers. Be aware that many in the X, Y, and Z generations read and watch media or play games that use ideas from s-f, and they may borrow ideas for other purposes.

For instance, a dystopian story, a futuristic nightmare, may become something positive to emulate, as with the s-f subgenre called "cyberpunk." The 'cyber' refers to human/machine interaction, while 'punk' as in punk rock music suggests urban anti-establishment attitudes. Cyberpunk began with William Gibson's 1984 novel *Neuromancer*. This award-winning novel describes a near-future urban society with widespread technology such as complex computer networks, direct brain-computer interfaces, artificial intelligence, genetic engineering, designer drugs, advanced surveillance technology, and human augmentation. Mega corporations rule the world, having replaced governments. The middle classes hide in gated communities.

The high-tech underworld of *Neuromancer* is a dark future where the only things to rely on are one's own wits, violence, and the free market. Nature is invisible and street smarts are the ethic. The novel's anti-hero Case is a once-talented computer hacker whose former employers damaged his central nervous system with a military mycotoxin. Much of *Neuromancer'*s success comes from its atmosphere and style, partly borrowed from detective fiction and *film noir*. This

novel gave rise to a number of other cyberpunk stories, to new subgenres of science fiction such as steampunk (early industrial age technology), biopunk (focus on biotechnology), and postcyberpunk (less dystopian), also to cyberpunk games, music, films such as *Blade Runner* and the *Matrix* trilogy, anime and manga, and even cyberpunk fashion. But that is not all.

While many people view cyberpunk as a worrisome forecast about how the future might develop, others see it as a creative outlet. "Whole groups have formed of people who embrace the ideals of cyberpunk. [They] center mostly on the Internet, but have been known to congregate [and are] often connected to the rave scene," says a Wikipedia article. The hacker culture finds cyberpunk "tremendously stimulating," according to Paula Yoo in *Wired* magazine, which was created for this crowd. The magazine's success, says Yoo, "proves that hardcore hackers, multimedia junkies, cyberpunks, and cellular freaks are poised to take over the world."

Technological subcultures and attraction to cyberpunk also exist in other industrialized countries, notably Japan. Mark Damon Hughes gives insight into this attraction, saying his world changed when he read "Johnny Mnemonic" (a cyberpunk precursor) in 1981. "I wanted to be the most technical boy in town...and I didn't want to be destroyed by the killing floor of culture shock." For some then it may not be so much an attraction as it is self-defense in a technology-driven society.

Now we come to the transhumanists, who are techno-utopian and libertarian. Academic James J. Hughes says that not for 100 years (since Bellamy's socialist novel *Looking Backward*) has a social movement tied so closely with speculative science fiction, in this case cyberpunk and its offshoots:

> Transhumanism is an emergent philosophical movement which says that humans can and should become more than human through technological enhancements. Contemporary transhumanism has grown out of white, male, affluent, American Internet culture, and its political perspective has generally been a militant version of the libertarianism typical of that culture. Nonetheless transhumanists are becoming more diverse [from Liberal Democratic Transhumanism to Fascist Transhumanism].

S-f helped inspire space exploration, and may well have influenced recent U.S. efforts to control space militarily. By 1999, this country accounted for up to 95 percent of global military space funding, according to the French space agency CNES. "Theresa Hitchens of the private Center for Defense Information said the capabilities to conduct space warfare would move *out of the realm of science fiction and into reality* over the next 20 years or so [my italics]."

One area in which s-f may directly suggest actual experiments is DARPA, the Pentagon's secretive agency for "advanced research" or far-out ideas. The Defense Advanced Research Projects Agency fathered the Internet. It is now reportedly funding a number of human augmentation projects such as using trans-cranial magnetic stimulation to reduce the amount of sleep soldiers need, and developing tougher bodies (lab mice stay alive with 60 percent of blood loss after receiving a shot of estrogen). These are the sorts of technologies used in near-future, dystopian war stories by s-f writers such as Joe Haldeman (*The Forever War*), and I doubt any of them were meant to be models to emulate.

Perhaps military strategists and experimenters don't get their ideas from reading s-f, but I suspect a strange feedback loop at work here.

An important part of critical thinking is to become aware of the models that you are using. Advanced critical thinking also judges how well the shoe fits the foot, that is, how well the model works, and its possible consequences.

Models and Memes Keep Coming

*The 20*th *century was dominated by nation-states. This century is being shaped by hundreds of fundamentally different political units. Power is moving from nation-state to city-state.*
Paul Saffo, Director of Foresight, Discern Analytics, *Newsweek*, Feb. 7, 2011

The futurist quoted above predicts we will develop a new kind of world political structure, largely because of technological changes. Another futurist, Tim Brown, President of IDEO, says that "We're seeing a shift from a world that's top-down—where we think about everything in its completeness—to a world of bottom-up, where new ideas and new practices emerge." Social innovations as well as unforeseen consequences are coming thick and fast, many of them influenced by computer technology, the Web, cell phones, and social networks.

Media scholar Marshall McLuhan in the 1960s predicted the electronic 'Global Village' in which the possibility of instantaneous communications would shrink the whole world into a face-to-face community. This scenario is starting to play out; for instance, the radical transparency potential of the Web has recently been applied to state secrets by WikiLeaks and other whistleblower sites. Facebook, although it was invented only seven years ago (in 2004), has already played an important role in the current rolling revolutions in the Middle East.

Note that a Global Village would be one giant step toward Species Consciousness.

Each new technology leads to new models, such as ***Crowdsourcing*** (crowd + outsourcing). The term is widely used for the trend of mass collaboration made possible by Web 2.0 technologies. Jeff Howe in a 2006 article said that because crowdsourcing is an open call to an undefined group, it collects those people most motivated and capable of solving complex problems and contributing fresh ideas. It was first designed for businesses to be more efficient and cut their costs. Some people already earn or supplement their income with crowdsourcing and atomized employment (multiple part-time jobs): enthusiasts see this as the future of work. But there are concerns: below-market wages, lack of contracts, and difficulties in managing the work of large numbers of unseen people. Also, not all jobs are part of the Information Economy. Some, like hairdressers, vets, and plumbers, will remain 'hands-on' for some time. And many of these new technologies do not yet affect the one-third of us humans who are peasants.

Crowdsourcing has roles besides business, with Wikipedia one example of a public institution based on multiple volunteers. Crowdsourcing can be used for problem-solving by governments and nonprofits, for example transit planning. In the UK, the chancellor asked the public for views on what programs to cut to trim the budget deficit, and the deputy prime minister asked people to suggest outmoded laws that should be repealed. (However, this approaches mass brainstorming rather than actual work by more or less expert contributors.) Another related concept is participatory democracy, with some seeking ways to use the Internet to involve larger groups in self-governance than was historically possible in, say, ancient Athens.

Another result of the Web is a ***radical transparency*** that erases all secrets. Magnified surveillance is one possibility, WikiLeaks exposure another. A third direction for radical transparency is that consumers can learn about the full production details of what they buy, allowing them to make better, more sustainable choices.

Some of these new technologies have environmental and social costs. As each wild card turns up, we need to rise above the hype and to reflect very seriously about the possible consequences, positive and negative.

Chapter 14: Consensus Reality

One thing about which fish know exactly nothing is water.
Marshall McLuhan, Canadian media scholar

The belief that one's own view of reality is the only reality is the most dangerous of all delusions.
Paul Watzlawick, philosopher and therapist, *How Real Is Real*? 1976

Despite the word 'consensus,' we do not actually vote on reality. It's simply what everybody knows. According to James Burke in *The Day the Universe Changed*, "fifteenth century Europeans 'knew' that the sky was made of closed, concentric crystal spheres, rotating around a central earth and carrying stars and planets....Then Galileo's telescope changed the truth. As a result, a hundred years later everybody 'knew' that the universe was open and infinite, working like a giant clock."

Burke noted that at any point in history (or prehistory) people held a view of the way the universe works, and were quite sure of it, whether it was based on myths or research. At one time people found spirits in every tree, but now we 'know' that everything is composed of tiny dead pieces of matter called atoms and a lot of empty space.

A culture 'agrees on' one version of reality, sometimes called consensual reality, the received wisdom, the dominant paradigm, socially constructed reality, the system, the prevailing worldview, or the *Weltanschauung*. (Wouldn't it be nice if 'they' could agree on just two or three terms?) This agreement about reality is not a very conscious process, but rather something we take in with our mother's milk (or formula). Our current Western culture's prevailing worldview is ***materialism***: that is, most of us believe that our sense perceptions represent a material world existing independent of all experiences. Materialism has other meanings, but we are not talking here about attachment to money or consumer products.

Most Westerners also accept the scientific worldview, which in addition to materialism makes other assumptions about the nature of things: for instance, that everything animate or inanimate is composed of little bits of dead matter (atoms); and that the universe (and everything in it) operates mechanistically, like a machine, according to mathematical rules. Even those who know little about science accept its implications. Most people never question the assumptions of their own society, and their consensus reality is well below conscious awareness.

If you diverge very far from consensus reality, you may be considered flaky or even delusional and suffer other negative consequences such as losing your job or being put into an institution. Some believe that society enforces one version of reality on us. *Reality enforcement* is the idea that society coerces consensus reality.

The idea of reality enforcement has become more popular lately with science fiction, role-playing games, and the well-attended film trilogy *The Matrix* all helping to spread these ideas about the existence of more than one consensus reality. (However, some critics allege that the Matrix films are so dependent on special effects and manipulated images that they actually ensnare their audience in the same artificial world that they warn against and distract viewers from the themes of the films. They claim that few *Matrix* fans recognize the similarity between their own situations and those of the film characters.)

People who oppose aspects of our social and political culture such as war and injustice often go deeper to question the underlying assumptions of our largely unconscious worldview. In fact,

it seems a growing number of people in our culture, for diverse reasons whether philosophical, religious, or imaginative, do not adhere to scientific materialism as their full version of reality.

Those with Christian worldviews may find exceptions to the prevailing materialist view, believing for instance in miracles or the power of prayer. A recent poll claims that 86 percent of Americans believe in angels. It is not clear whether they are referring to heavenly beings with wings, or perhaps simply to dead loved ones. In any case, if this poll is accurate, such belief is close to being the consensus reality. Christians in western culture, regardless of their beliefs in angels or the power of prayer, most of the time operate according to the prevailing consensus reality of materialism. Some other religious traditions, notably Asian ones such as Buddhism, Taoism, and Hinduism, do have a contrasting, non-materialist worldview.

East-West: Two Consensus Realities

The known is not necessarily the real.
Jean Charon, French physicist and metaphysicist, 1920-1998

In fact, East Asians generally seem to have a consensus reality from that of Westerners. Richard E. Nisbett said he once assumed that all people use the same rules of thinking, in the belief that this was hard-wired in us. But he first became aware of differences during conversations with a Chinese graduate student who made comments such as that Chinese think the world is a circle, while Westerners think it's a line. Chinese believe in constant change but change that works in cycles. They see the world as more complex and more filled with contradictions than do Westerners. They pay attention to a wider range of events and search for relationships between them.

Social harmony is highly important to the Chinese, as individualism is to Westerners. Nisbett says that the world's most individualistic people are found mainly in northern Europe and the present and former nations of the British Commonwealth, including the United States. But to an East Asian, "the person always exists within settings." The Chinese have no word for 'individualism' and the closest their language comes to it is the word for 'selfishness.' Family advancement is the goal, not self-advancement.

Westerners like to categorize things, while East Asians tend to place things in their broad context. According to Kaiping Peng, the Chinese student quoted by Nisbett, "Westerners live in a simpler, more deterministic world; they focus on salient objects or people instead of the larger picture; and they think they can control events because they know the rules that govern the behavior of objects."

Nisbett contrasts Aristotle and Confucius as examples of the two systems of thought, represented by "the syllogism and the Tao." He says that two "utterly different approaches to the world" have co-existed for thousands of years. Today over a billion people have a worldview that was inherited from ancient Greece, while over two billion have inherited the ancient Chinese traditions. These differing outlooks often produce international misunderstandings.

Differences between the Greek and Chinese languages reflect—or helped form—the contrasts. The Greek language "encouraged a focus on attributes and on turning attributes into abstractions." On the other hand, the Chinese language "is remarkably concrete…The Chinese are disinclined to use precisely defined terms or categories in any arena, but instead use expressive, metaphoric language," according to Nisbett.

Even habits of sense perception are different between these cultures. Worldwide, some people are more likely than others are to see an object separated from its surroundings, and the

degree of this 'field dependence' is measured by several tests. Agricultural peoples show more field dependence than either hunter-gatherers or urban, industrial people. Field dependent people are more interested in other people and have a better memory for faces. Not surprisingly, East Asians tend to test higher on the perceptual trait of field dependence.

A Native American, Anne Pinneault, describes a similar difference between Western thinking and that of indigenous people:

> Perhaps the most important distinction between Western thought patterns and First Nations understanding of intuition lies in the latter's rootedness in space and not time. The linear construction that dominates the historical approaches of the Western tradition is not at the center nor is it the focus of Native consciousness. [Instead] the First Nations perspective on intuition [comes from] the inherent teachings, which are land based and contain the inherent concepts or tools needed to understand the functioning of participating consciousness within a land-based philosophy. [These teachings] firmly instill the fact that there is a participating consciousness and that we are a part of it and not separate from it.

Thus Western consensus reality is quite different from both Asian and indigenous worldviews. Norbert Elias (a German sociologist) sheds some light on this from a different direction. Elias says that static concepts are deeply embedded in the philosophical traditions of the West. Our very languages tend to turn the living, changing world into abstractions. To describe this process he uses the German word *Zustandsreduktion* which means "the reduction in thought of all things that you observe as being dynamic to something static." (Imagine, all that in one word!) Even science is not entirely emancipated from *Zustandsreduktion*. Elias says we must question "the idea that our forms of thinking are unchanging and eternal….If we find that our present forms of thinking do not fit what we observe, we have to develop new instruments of thinking."

How We Get Our Consensus Reality. Cultural anthropologist Gregory Bateson gave an explanation of how consensus reality transmits itself. Bateson assumed three kinds of learning. The first, proto-learning (L-1) solves a specific problem. The lab rat learns to press a lever for his food; the dog learns to fetch a stick; the toddler learns to use the potty. L-1 is similar to the model of behavior used by B.F. Skinner and James Watson. Through reward and avoidance, serial and rote learning, an animal or human learns to present the called-for behavior. This involves what we would call training rather than education.

In Learning II (L-2) one discovers the nature of the context in which the first learning takes place. The lab rat may come to understand that sometimes the powers-that-be expect it to press the lever twice or three times, or jump through a hoop. The dog learns that various actions such as fetching a stick or barking for supper may please its owner and earn rewards—'tricks.' The toddler learns a number of other sorts of control over the body—blowing her nose, putting on clothes, being quiet or not running at certain times and places. The person (or animal) learns the rules of the game, and becomes more skilled in solving problems in general.

Most of L-2 actually transmits by nonverbal communication—by gestures, intonations, and body language. Ray Birdwhistell, an anthropologist who studied nonverbal communication extensively, decided that in conversation words carried only about 30 to 35 percent of the message and the remaining 65 percent of the interaction occurs in nonverbal ways. For example, facial expressions can invite or repel others, with conflicting or changing emotions occurring faster than 1/5 of a second. These fleeting changes may not be observed consciously, but people

do perceive them unconsciously. Besides nonverbal communication, there are metaphorical uses of language, in which more is implied by the language than is said in words.

We learn to understand the context of a situation by frames that comment on the verbal content. A gesture, a frown, a gasp, or a smile might be the frame. Just as a dog will make a play bow to indicate that the other dog should not take seriously any growling and surface biting that follows, so do we humans say things with a smile that are not meant to be taken literally: "If you say that one more time, I'm going to kill you." All this nonverbal information and framing comprises *meta-communication,* or communication about a communication.

L-2 learning, largely by metacommunication, is the basis of consensus reality. By a learning-process that permeates our environment, L-2 teaches us in subtle ways the range of permitted patterns that the culture has labeled 'sane.' Despite their importance, non-verbal messages ("analogue knowledge") do not fit into strictly logical categories, says Morris Berman in *The Reenchantment of the World*. Non-verbal messages are outside of the formal system of logic.

There is another aspect of consensus reality. As James Burke says, "You are what you know." L-2 gives not only a worldview but also personality and behavior patterns. "Your view of reality is also your character structure," according to Berman:

> Dominant, submissive, passive, self-aggrandizing, and exhibitionistic—all are simultaneously character traits, and all are [L-2] learned from early infancy. [People in Western cultures] learn the art of manipulating everything around them, and it is difficult for them to believe that reality might be arranged on any other basis. [Thus] we obtain a personality and a world view, by means of a pervasive system of cultural, metacommunicative messages that can be understood in fairly precise terms. [Compared] to deliberate, conscious, digital knowledge, this analogue knowledge is incredibly vast.

A person may convert from one paradigm to another, but is still in thrall to cultural paradigms. However, there is another way out, in which one discovers the nature of paradigms themselves. In Learning III (L-3) the individual can break through the double binds of both his own culture and his own personality. L-3 involves learning about L-2 and going beyond the contexts one has learned. Berman says Zen *koans* ("What is the sound of one hand clapping?" "Who were you before you were born?") are double binds designed to catapult a person out of the cultural contexts he learned in L-2.

Berman suggests that L-3 is a rare and difficult achievement. He mentions true conversion and psychotherapy as major ways to achieve L-3. However, a number of spiritual practices such as taught by Gurdjieff, Zen Buddhism, and many other, especially Asian traditions, focus on attaining this liberation from one's cultural context. In any case, there is a good deal of gnawing around the edges of our consensus reality these days, since we are in the midst of a grand paradigm shift.

In fact, ***Consensus Reality Ain't What It Used To Be***. Greater familiarity with other cultures through education and travel, especially familiarity with East Asian or indigenous cultures with a distinctly different consensus reality, leads some to the idea that each culture creates its consciousness. Experience with psychedelic substances has led others to alternative realities. New Age and occult beliefs suggest that individual, group, or cosmic consciousness may pattern physical realities. Popular awareness of scientific ideas such as quantum indeterminacy, a holographic universe, or chaos theory contributes to a general lack of commitment to that old-time Newtonian reality.

Dramatists, artists, and writers also have a long tradition of challenging consensual reality. For instance, the early twentieth century saw the Dadaists and other artistic rebels. Surrealist painter Salvador Dali invented a "paranoiac-critical method [in order to] systematize confusion…and so assist in discrediting completely the world of reality." (One never knows how serious Dali was in his pronouncements.) By breaking the conventions of art, the artist invites an audience to reconsider *all* their preconceptions and assumptions.

Sometimes a less than world-class artist interprets this function of art simply as shock value, thumbing one's nose at the bourgeoisie or desecrating somebody's holy icons. These are desperation measures that don't work like a *koan*. Yet a work of art may make more of a point than is immediately evident. For instance, Andy Warhol's repeated images of popular icons like Marilyn Monroe, or of soup cans, were subtle reminders that we live in an era dominated by media hype, mass production, and advertising.

People do not take art as seriously as they once did. Before the days of mass media, some individuals were sufficiently engaged in their encounters with art, music, and drama to start riots in the gallery, performance hall, or theater when something new and original upset their preconceptions of what art is supposed to be. And poetry—which employs metaphoric language along with the nonverbal messages of intonation and sound patterns—with its ancient past in the oral tradition, was said to be "the unacknowledged legislator of the race."

From the time of the ancient Greek Aristophanes' comedy "The Frogs," dramatists have experimented with 'Breaking the Fourth Wall' through asides to the audience and references to the play from within the play. In 1921 Luigi Pirandello's play "Six Characters in Search of an Author" began a new era of meta-theatre, in which characters leave their proscribed roles and sometimes come offstage to interact with the audience. In other media, the radio comedy "The Goons" and the televised programs "Monty Python's Flying Circus" constantly broke dramatic conventions. This had both comic effect and overtones of questioning the overall contexts of L-2.

After World War II, the exhaustion and disillusionment that follows a major war led to Existentialist philosophy and the Absurdist movement, especially the Theater of the Absurd. Playwrights such as Eugene Ionesco, Samuel Beckett, Harold Pinter and Edward Albee presented plays that lacked both dramatic action and the logical structure of traditional theater, such as "The Bald Soprano" and "Waiting for Godot." The war novel *Catch-22* and the film *Mash* are also absurdist: human life doesn't "add up," and consensus reality is not working.

Quite separately, a number of Latin American authors such as Gabriel Marquez, Isabel Allende, Alejo Carpentier, and Julio Cortazar attained great success writing in the mode of Magic Realism that combined two worldviews at once: the European conquerors and the indigenous people they conquered. The world of a single story contains both modern scientific materialism and the more magical outlook of the ancient civilizations of the New World.

A 1969 novel by John Fowles, *The French Lieutenant's Woman*, uses post-modern fiction techniques to let the author intrude and comment on the story. It presents three alternate endings. The reflexive novel calls attention to the fact that it is a novel. Such techniques now appear even in newspaper comic strips, where characters complain about or to the cartoonist. The cartoonist may be pictured or may comment or act from outside the cartoon frame.

More rationalistically and systematically, some scientists and philosophers have been pointing out the difficulties inherent in our materialistic worldview, and proposing various sorts of paradigm changes. The study of how we know what we know—the nature of the process by which we come by our knowledge—is called *epistemology.* In a sense, epistemology is L-3 or learning to look at the whole framework inside which we 'know' what we think we know.

Chapter 15: Changing Paradigms

*The fundamental issues confronted by any civilization in its history, or by any person in his or her life, are issues of **meaning**. And historically, our loss of meaning in an ultimate philosophical or religious sense—the split between fact and value which characterizes the modern age—is rooted in the Scientific Revolution of the 16ᵗʰ and 17ᵗʰ centuries.*
Morris Berman, *The Reenchantment of the World*, 1981

Thomas Kuhn, a philosopher of science, gave currency to the word 'paradigm' as a set of practices and concepts that define science during a particular period of time. In his book *The Structure of Scientific Revolutions*, Kuhn says a scientific paradigm includes these areas: what is to be observed; what kinds of questions should be asked about it; how these questions are structured; and how the results of scientific investigations should be interpreted. Kuhn's special interest is in how scientists handle shifts in paradigms, as when Albert Einstein published his paper on special relativity that challenged the laws of Newtonian mechanics previously held for 200 years. Unfortunately, people may overuse the words 'paradigm' and 'paradigm shift' so that they mean nothing more significant than, perhaps, a change in direction of an advertising campaign.

James Burke doesn't use the term but that is what he means in *The Day the Universe Changed*. He says "When what we know changes, the world changes and with it, everything….Major changes occur in the way society sees itself, as a result of advances in the body of knowledge." Burke examines pivotal moments in history when what people thought they knew about the world's construction went through a drastic change, such as the Western invention of the printing press in the 15ᵗʰ century that destroyed the foundations of an oral society, undermined strict obedience to authority, and created the basis for specialization.

Here, I use 'paradigm' to mean a large and all-encompassing model, worldview or *Weltanschauung*: the agreed-on construction of the universe which defines a certain era, which is to say, the consensus reality of an age. A shift in paradigms of this magnitude causes many ruptures in society, and for an individual "the loss of a paradigm is often an emotional catastrophe," says Berman. There was such a major shift in worldviews during the 17ᵗʰ century and another one is having a difficult birth in the 20th and 21st centuries. During the last 350 years—only twelve or so generations—humans in the West have experienced or are experiencing two eras of great and drastic changes in the way people think about everything. This has to be hard on us. The older way of thinking does not just go away, nor does everyone fully understand the new way. We end up, if not schizophrenic, at least somewhat less than integrated.

The 17ᵗʰ century changed everything. Here is where a little historical background can help us understand what we are doing today. Because our current worldview is so implicated in our destructiveness towards the Earth and each other, it is important to understand just what we gained and what we gave up during the pivotal 17ᵗʰ century. The 'Scientific Revolution' began in the Western world and has now spread over most of the globe. About the same time, Europeans shifted from feudalism to capitalism and away from domination by the Catholic Church to a number of competing Protestant sects. There were simultaneous changes in basic conceptions— and practices—concerning livelihood and economics, land ownership, religion, social relationships, and the nature of reality itself.

Among other effects, the new world view tended to separate humans from nature in ways that had not happened before. Carolyn Merchant in *The Death of Nature* notes three major, related aspects of the shift of paradigms that occurred in the 17th century. First, the philosophical shifts driving the Scientific Revolution tended to objectify nature and attempt to control it. Secondly, the enclosure movement physically separated people from their traditional land. Third was the commercial commodification of nature. Objectification of nature, physical separation from nature, and the commercialization of nature all happened together. These related events and ideas alienated people from the natural world and undoubtedly led to problems we have today with overpopulation, over-consumption, species extinctions, pollution, and global warming.

The story we usually hear is that changes in the modern world, especially science and technology, have made the human race much happier and healthier. It certainly helped create more of us, as our numbers have increased about thirteen times over the last 400 years. However, from another viewpoint, historian Morris Berman says that the development of a materialistic, atomistic, and mechanistic worldview has greatly damaged human development for individuals and their species:

> For more than 99% of human history, the world was enchanted and [humans] saw [themselves] as an integral part of it. The complete reversal of this perception in a mere 400 years or so has destroyed the continuity of the human experience and the integrity of the human psyche. It has very nearly wrecked the planet as well.

Some call the newer worldview *Cartesian* (after mathematician René Descartes), or they may refer to the *Cartesian split* between mind and body, subject and object, human and nature. Others call this new paradigm the *Newtonian* worldview (after Isaac Newton and his conception that the physical universe operates according to an immutable, mathematical precision, like a well-played game of billiards). But however one describes them, these changes still affect our worldview today, and they definitely relate to the survival challenges we face.

This book laments the Stone Age thinking patterns that we bring to 21st century problems, such as blame, recipes, and herd thinking; but there is one aspect of Stone Age thinking that was and is crucially necessary to our survival. In the course of the seventeenth century the scientific worldview replaced an ancient mode of thought—probably the original way of thinking for humans, that had lasted for tens of thousands of years—which found nature to be alive, with ourselves part of it. Berman's term for this ancient mode of thought is *participating consciousness*. This kind of thinking was denied or repressed in the new era of 'mechanical philosophy' (the seventeenth century word for what we now call modern science).

The Western world from about 1700 on operated according to the mechanistic, atomistic ideas of Descartes and Newton. The scientific worldview grew together with industrialism and capitalism. Some historians also link capitalism with the mindset of Protestantism, especially Calvinism, which saw an individual's worldly success as an indication of heavenly grace. Also, as Protestantism surged, the Catholic Church's traditional restrictions on usury (interest on loans) no longer held back trade and finance.

However, intellectual problems developed with the Cartesian-Newtonian paradigm after 200 years or so, especially from discoveries in physics in the early 20th century. The new field of quantum mechanics upset the foundational ideas of Newtonian science. Other new-paradigm sciences such as chaos theory and complexity theory followed a few years later. According to physicist Stephen J. Hawking, these new sciences may dominate the 21st century as Newtonian physics dominated the 19th.

The second revolution in scientific thinking is still underway and we are in the middle of it. Some thinkers are looking for a synthesis between science and participating consciousness, that is to say, a more holistic science. Thomas Moore says: "Enchanted science would not be devoted exclusively to facts, but it would be able to reflect back on its own mythic nature and its own fantasies and fictions. It would acknowledge that the very notion of facts is part of a mythological worldview."

Most Americans (or Europeans) are unaware that we are in the middle of another paradigm shift. People generally know little about quantum physics. Not only did most grow up with the Newtononian view and learn it in school (although it was already insufficient) but this view seems much more orderly, comforting, practical, and understandable. It works pretty well for everyday. Most folks aren't dealing with subatomic particles or with galaxies, so the Newtonian view generally prevails in the grocery stores and garages, and many laboratories too.

After all, even the scientists were mind-boggled eighty years ago by quantum mechanics. Many scientists resist the implications of quantum mechanics and other new sciences—Einstein did not care for quantum mechanics. Norbert Elias says:

> Physicists still have not got over their surprise that they cannot operate with the concept of cause and effect on the subatomic level. They do not see the concept of blind mechanical causality as a specific type of perceiving connections which has developed at a certain time in a specific phase in the development of our knowledge. As long as they consider the concept of cause and effect as an eternal category, they cannot get over their surprise that this category does not apply when we gain further knowledge and especially when we open up new levels of our universe.

But science is only part of the worldview that is in question. Surrounding ideologies such as industrialism, capitalism, progress, patriarchy or male dominance, nationalism, and many other previous articles of faith are also losing ground. It is becoming increasingly clear that the paradigms we have been living by have not brought us to the promised utopia. Instead they are deeply implicated in the self-made planetary problems that make us an endangered species once again.

Since our survival as a species depends on largely unconscious paradigms, it is worth taking a closer look back over the last 400 years of changing worldviews to see what was, what is, what might have been, and what might yet be.

Before The First Shift

A great crisis of ideas and feelings, a revolution in the manner of thinking and of understanding the universe, almost an intellectual mutation took place at that time in Europe.
Gibson Burrell, *Pandemonium*

It is quite difficult to imagine other people's mental life outside the box of current civilization. We tend to think that almost everybody who lived before us was something of a simpleton, and that here and now we know more than anybody ever did. Yet people in the past had just as much grey matter as we do, and the way they thought worked for them at the time. So let us try to enter the way our ancestors used to think before the seventeenth century. Historian Morris Berman uses the term *participating consciousness* to describe the time-honored way of thinking that did not separate the perceiver from the world she or he perceived.

'Participating consciousness' is something like *grokking*, a word that became current a few decades back from a popular Robert Heinlein novel, *Stranger in a Strange Land*. The "stranger" in Heinlein's book was an alien human raised on another planet. When he experienced something, he experienced it deeply, with all his senses, without a lot of abstract words—he *grokked* it. Readers of Heinlein's novel would sometimes tell each other, "I *grok* you," meaning, "I understand completely." That is the way young children experience things, the way some intense, creative people experience their surroundings, and the way people generally used to experience their world.

Participating consciousness does not separate subject from object or mind from body. The one who experiences is part of the experience: the entire experience is one Mind. Some call this way of experiencing *animism* since everything appears alive (animated). Everybody still thinks this way for the first years of life, as you know if you are an observing parent. Berman says up to the age of seven, children's thought patterns are largely magical or animistic.

We also become part of our experience when we are deeply engaged in something, in the "flow," so interested in what we are doing that we forget that there is an "I" apart from its experience. This may happen in the midst of some athletic endeavor or creative activity. Berman mentions two experiences of participating consciousness that remain today, lust and extreme anxiety (panic), during which our whole being becomes one with the experience.

Other, less intense modern experiences of participating consciousness are empathy—when we feel what another person or animal is feeling—and the "willing suspension of disbelief" or identification we make with books and films. To some degree, most of us identify with characters in fiction. I am especially susceptible and have been embarrassed many times when friends observed me reacting emotionally to film violence. "It's just a movie!" they say, as if I didn't know. Torture scenes send me out in the hallway, but people who have viewed a lot of violence on television are more callous to it.

The condition of being "in love" surely involves participating consciousness, as a person feels at one with his or her beloved. Sometimes the lover unconsciously takes on habits and mannerisms of the beloved. Long-term spouses often seem 'tuned in' to each other, and may even come to resemble each other physically. Close friends participate consciousness too. (Berman, who introduced the term, uses this grammatical construction.)

Parents and children participate consciousness, which is called 'bonding.' One could hardly take care of pre-verbal infants without participating consciousness. When the caretaker lacks this capacity, the infant is at risk. Since the eighteenth century, observers have described how babies in foundling homes or other places where they received basic physical care without personal attention, tended to waste away and die. Eventually doctors named this condition *marasmus*.

The person who knows why the baby is crying and how to comfort him is using something besides logic. So also with people who "have a green thumb," horse-whisperers, or those who get birds to feed out of their hand. Musicians participate consciousness when they play or sing in groups. So do athletes in sports where they play in teams or against an opponent, anticipating each other's moves not through reason but through being in the experience. A review of the film "Pan's Labyrinth" says: "There is a sense with this film that every last specific has been thoroughly thought through, that *the filmmaker is so at one with the material that he is actually living it with his character*" (my italics). When an artist (in this case director Guillermo Del Toro) participates consciousness, so does the audience. In performers and leaders, this engaged awareness may turn into 'star quality' or *charisma*.

An Australian Aboriginal activist, Burnam Burnam, indirectly described participating consciousness:

> We see ourselves as descendants of the longest conservation campaign in the history of man, because *we opted to become part of the environment itself.* We did not mind Australia for 50,000 years to see it destroyed in 200 years of "progress." [author emphasis]

Those who separate themselves intellectually, emotionally, and spiritually from the natural world are prone to destroy it.

The Middle Ages

> *Note well, the Age of Faith means faith not only in religion but also in magic.*
> Gibson Burrell, *Pandemonium*

Those who approached the world with a participating consciousness had a world view much different from our scientific-industrial mindset. The Middle Ages is often called the Age of Faith, but that does not mean that every peasant was a devout believer in Catholic dogma. Folk beliefs did not change overnight. Although the Catholic Church was the dominant institution in Europe up until the seventeenth century, peasants held a mixture of Catholic doctrine and older beliefs. Psychologist William Willeford describes the mix as follows:

> Catholicism in the late middle ages was a vast cultural edifice in which magical and religious elements were inseparable and often indistinguishable. Thus the consecrated host could be used profanely to put out fires…to encourage bees to make honey…as a love charm…And though these practices were folk elaborations of churchly elements, the Church itself gave its approval to relics, indulgences, St. Christopher's medals, and other devices similar to those used by non-Christian sorcerers. [This] in part represented a coarsening of religious awareness as symbols lost their transcendent quality and became concretized in mechanical operations.

These older, animistic beliefs went back to Neolithic times. Especially at times when religion "reinforced hierarchy and failed to mitigate misfortune," the peasants rejected it in favor of magic. The official obsession with witchcraft in Christian Europe between the medieval and modern periods indicates that the old pagan religion was sufficiently alive to be deeply feared. UK sociologist Gibson Burrell suggests that the witch hunts in the late 1500s and early 1600s came about because the Church wanted to suppress widespread rural practices such as fertility rites and orgies that welcomed spring or harvest which "represented an alternative ideology and lifestyle for subjugated groups."

Historically, new religions have often incorporated the older ones. Denise Lardner Carmody, Professor of Religious Studies, identifies many elements of archaic religions in modern day Christianity. "Whether in Europe, Latin America, Africa or Haiti, the message is that native archaic religion has died hard. Historically only the educated upper classes have appropriated a thoroughly Christian world-view stressing monotheism, creation from nothingness, and Christ's subjugation of all evil spirits."

While modern rationalism would seem to have dealt the deathblow to the archaic religion, yet it is still alive in many ways and so are its medieval enemies. One sees superstitious remnants of the past in supermarket tabloids with ads for amulets and accounts of incredible events. People

consult psychic hot lines as they once consulted the village 'cunning man' or 'wise woman.' Fantasy novels about wizards, dragons, and faery folk are popular without end—witness the Harry Potter phenomenon. The kids who know all about technology are also online playing role-playing games that involve the same wizards, knights and dragons, or else folkloric sci-fi monsters and warriors out in space.

Then there is the enduring genre of movies about young girls possessed by demons and boys who are sons of the Devil—conceptions actually presenting the viewpoint of the medieval church rather than showing the archaic religion itself. Modern obsessions about satanic cults in daycare centers seem based on old fears and struggles that date back to the sixteenth and seventeenth centuries. Modern day fundamentalist mythology, which itself holds some beliefs akin to medieval religious folklore, openly opposes participating consciousness when it is expressed in the form of deep ecology, New Age practices, and any hint of magic or the supernatural that is not expressly permitted by religious doctrine such as angels or the rapture.

Many New Age beliefs are a revival of archaic religion, especially in the form of ancient Oriental, shamanistic, and Native American religions that kept a connection with physical nature and a wonder at the mystery of life. Even modern science, which de-animated the world of our ancestors, purging it of elemental spirits and soul alike, has begun to bring back the elves and fairies by the backdoor in the form of quarks and other unpredictable particles of matter.

Moore says "We are a magic-starved society, trying to create an effective and humane culture on the limited basis of scientific method, machines, and materialistic philosophies." Burrell points out that many old ways of thinking remain in the industrial West:

> Peasant beliefs, understandings, and worldviews have not disappeared from modern societies….We use the metaphors, myths, and tales of agricultural life. [Our language] remains predominantly a Neolithic not industrial language.

Burrell notes that even today 30 percent of the world's people are actual peasants, but that modern urban people seem "blind" to the peasantry. To capitalism, peasants are only important insofar as they can be turned into industrial labor. Marxists discount them and do not seem to notice that peasants—not industrial workers—have been the largest part of most 20th century revolutions. Most westerners are simply unaware that two billion individuals, almost a third of the world's people, are small farmers from a long line of small farmers, who are attached to that lifestyle as long as they can make a living from it.

Peasants do not become industrial laborers unless they are absolutely forced into it; and they do not easily accept the scientific-industrial model of the world. We moderns who ignore and marginalize peasants—although most of us are only a few generations removed from peasantry ourselves—have not really absorbed the new rationalist model either. It may actually be impossible to do so. Berman points out that while our present scientific worldview represses and denies participating consciousness, it has not *replaced* it at all. Participating consciousness is still there, but largely unconscious.

The human mind does not consist merely, or mainly, of a rational intellect and we do not learn by this model. For instance, people do not learn by logical steps but mostly by participating consciousness. Science itself, like language and most of our knowledge is 'picked up by osmosis.' Most actual learning violates the Western model that one obtains knowledge by distancing oneself from the experience. "Rationality, as it turns out, begins to play a role only *after* the knowledge has been obtained viscerally." Berman says our understanding is very

gradual, based on a network of unconscious bits of information which are "so basic that they are not recognized as 'categories'."

Another way to look at learning and knowing (*epistemology*) is in terms of **tacit knowing** as described by Michael Polanyi. Tacit knowledge is everyday knowledge that cannot be specified or explained, but occurs in the act of doing. There is "a knowledge that we cannot tell." For example, how do we manage to recognize one face out of thousands? How do we use a common tool? Ray Magliozzi in advice to a beginning driver says: "Try to get the car going using only the clutch. There's a 'feel' involved, like riding a bicycle. It seems impossible to do at first, and then all of a sudden it clicks and you can't do it wrong if you try."

Tacit knowing involves bodily knowledge. If you once played tennis, the knowledge 'will come back to you.' Polanyi uses the example of using a hammer to hit a nail: your focus is on the hammer hitting the nail, but the subsidiary knowledge is how the handle of the hammer fits into the palm with your fingers gripping it; this becomes part of our tacit knowing. Tacit knowing includes three parts: subsidiary clues, such as the feel of the hammer; the focus object; and the knower. "Knowing necessitates active participation; it is grounded in an act."

In *The Reenchantment of the World*, Berman points out that all our abstract thought depends on the original act in which we transformed sense impressions into mental pictures. Instead of thinking directly as in tacit knowing, when we think abstractly we are manipulating our images of things. Sometimes we are manipulating the images of other images based in their turn on the evidence of our senses. The more layers of abstraction, the more remote is our thinking from actual lived life. In fact, this was Descartes' professed aim, to separate pure mathematical 'truth' from the unreliable senses. Perhaps that is the way that brilliant mathematicians think. Or perhaps it is the way that a brilliant but schizoid individual thinks. But it is not the way most human beings operate.

Many people in modern, industrialized societies are in a strange hybrid condition. Our upbringing has taught us to deny and repress participating consciousness. It is, however, still very much part of us as our unconscious, our childhood, our peasant heritage, and our learning process. Meanwhile, many of us do not have a very clear understanding of science either, nor do we have skills in critical thinking. Mass education was not designed to make us whole people. We are disenchanted, cut off from nature, and poorly educated—forming the ideal mass audience for mass media. No wonder Berman says, "Scientific consciousness is alienated consciousness."

Hermetic Wisdom

> *Esoterics attempt to recover the 'lost speech,' the telepathic interconnections which exist between living things. Whilst science deals only with externals, such as symptoms and appearances and their causes, magic is an **analogical** system in which plants, metals, planets, and perfumes all communicate with one another.*
>
> Gibson Burrell*, Pandemonium*

There was a second candidate for the worldview change of the seventeenth century, and it had something to do with what modern, scientific-minded skeptics dismiss as magic. Most in our present consensus reality would consider anything of this nature pointless and obsolete. While the word magic has become identified either with the tricks of stage magicians or with medieval fears of Satanism, in a much larger sense it can be associated with persistence of the Neolithic religion of Europe and the Near East. However, not only peasants believed in ideas that most would now call magical. Scholars and artists of the time also accepted this worldview. For most

people of letters, the universe was animistic. Sydney, Spenser, and Marlow all took up esoteric thought. Burrell notes that "Richard Burton and Francis Bacon, both early children of the age of Reason, believed in magical healing."

The fascinating Dr. John Dee—"physician, philosopher, scientist, astrologer, cabbalist, mathematician, spy, and alchemist"—wrote *Monas Hieraglyphia*, which unified magic, alchemy, and the cabbala. The plays of Shakespeare are filled with references to the beliefs of his own time, with plots that include lovers lost in an enchanted forest, witches in Macbeth, interactions between mortals and the fairy kingdom, and Prospero the magician, who was reportedly modeled on Dr. Dee.

Berman says the 'alchemical world view' had actually permeated medieval consciousness. There was more than one tradition of secret knowledge, and then a convergence of several traditions after the Byzantine Empire fell to the Turks in 1453, and Jews and Muslims were expelled from Spain following 1492. The learned refugees from the southern corners of Europe met in places such as Italy, the Netherlands, and the city of Prague under Rudolph II, where the University of Prague became a center for cabbalism, alchemy, astrology, and magical-scientific studies in the late 16th century.

Such studies were part of the Hermetic wisdom, an ancient intellectual belief system that does not deny participating consciousness as does Cartesian-Newtonian science. In the Hermetic tradition, real knowledge occurs only with the union of subject and object. Such knowledge, says Berman, consisted of the recognition of resemblances. "The world was seen as a vast assemblage of correspondences [that] duplicates and reflects itself in an endless network of similarity and dissimilarity."

Hermeticism seems to have its roots in two ancient belief systems that merged together, Egyptian worship of the wisdom god Thoth, and Greek worship of the god Hermes. In Europe, Hermeticism developed as a system of philosophical and religious beliefs after the ruler of Florence acquired several Hermetic texts previously thought to be lost. Renaissance scholars believed these texts contained Egyptian wisdom from the time of Moses, written by Hermes Trismegistus (his name means 'three-times master'). Just as Moses received divine knowledge about the moral world, so (these scholars believed) Hermes Trismegistus received divine knowledge about the physical world. The Church showed interest in these ancient writings that claimed God had written cosmic secrets in a mathematical language. While not initially opposed to Hermeticism, the Church's position changed later on.

The three parts of the universal wisdom of which Hermes Trismegistus was accounted master were Alchemy, Astrology, and Theurgy. Alchemy in Hermeticism was not about changing physical lead into physical gold but about the purification of an ordinary, base person, and his gradual transformation into an adept master. "The various stages of chemical distillation and fermentation...are metaphorical for the Magnum Opus performed on the soul." The psychiatrist Carl Jung discovered that strange drawings and symbols in alchemical writings resembled his own clinical material from dream analysis and determined that alchemy was actually a map of the human unconscious.

It is also possible that some alchemists were not adepts and were actually trying to turn lead into gold. Or that some alchemists were early chemists. Recently, historian of chemistry William Newman maintains that a more modern, atomistic view of "corpuscles of matter" had developed among alchemists such as Geber or Thomas Erastus as early as the 13th century. At any rate, in the course of their efforts alchemists made some early scientific discoveries and developed many of the procedures and apparatus still used in chemical laboratories.

Similarly, the study of astrology—which developed independently in several world cultures such as Vedic India and the Maya as well as the Middle East—formed the basis of knowledge for modern astronomy. Many famous late medieval astronomers were also astrologers. The third part of Hermetic wisdom was Theurgy or divine magic, the opposite of black magic. Theurgy is based on alliance with divine spirits such as angels, archangels, and God.

All this is not entirely obsolete, as some Hermetic beliefs are echoed in modern scientific concepts and recent theories. The four classical elements of earth, water, air, and fire appear often in alchemy and also in astrological systems. One could liken them to modern conceptions of the physical states of matter—solid, liquid, gaseous—and combustion. The Hermetic belief, "As above, so below" is the idea that whatever happens on one level of reality—physical, mental, or spiritual—happens on every other level; often it refers to the correspondence of the microcosm and the macrocosm. Modern theories regarding the "holographic universe" seem to share something with this Hermetic tenet.

Another modern concept relating microcosm and macrocosm is fractals, which are fragmented ("broken") shapes with smaller parts identical in structure to the whole shape. Fractals are seen in nature in river networks, clouds and snowflakes, and many other areas. They result from a "positive feedback loop" in which something undergoes slight changes and ends up in a repeating pattern. Some fractals have the trait of self-similarity, in which magnifying a small portion exactly reproduces the whole.

The attraction of like to like in Hermetic beliefs resembles phenomena described in Western science such as gravity, resonance, and entrainment. The principle of causation stated in *The Kybalion* is that there is no such thing as chance. What appears to be chance is instead undiscovered law, the organization at the heart of chaos. This principle, too, has a modern counterpart in Chaos Theory.

A modern scientific study that seems alchemical concerns *biological transmutations* or non-radioactive nuclear reactions, described by Robert A. Nelson:

> Long before the discovery of "cold fusion" by Pons and Fleischman, other scientists had variously found phenomenal evidence of non-radioactive, low-energy transmutation of light elements in plants, animals and minerals. These reactions have come to be known as "biological transmutations." This class of nuclear reactions is of great importance to the progress of human knowledge in the fields of physics, cosmology, biology, geology, ecology, medicine, nutrition, and agriculture. The exact mechanisms of biological transmutations remain unknown, though a few theories have been proposed to explain them. Biological transmutations exist and cannot be denied; they are the very core of living nature, which could not function without them.

Nelson traces the study of biological transmutation from a famous experiment in the 17th century by von Helmont, who grew a willow tree in a clay pot filled with 200 pounds of soil. After 5 years, Helmont weighed the soil and found it had decreased by only 2 ounces, concluding that "Water alone had, therefore, been sufficient to produce 160 pounds of wood, bark and roots." The most well-known modern researcher of biological transmutation is Louis Kervran of the University of Paris, whose work was nominated for the Nobel Prize. Another researcher, Costa de Beauregard, commented on the problem of "Life playing the information game, the field being the nucleus, and the rules being those of the wavelike probability calculus….The only tentative answer that I can think of is….Life knows how to…induce probability decreasing processes." Although research continues in many countries, Nelson says it is "practically unknown to most scientists."

As a belief system, Hermeticism appears to be both pantheistic and monotheistic, teaching there is One God or one "Cause," The All, of which everything and everybody is a part.

Hermeticism still has followers today. It has been associated with Rosicrucians, Freemasonry, and/or the Illuminati. Rosicrucianism was a Hermetic/Christian movement dating back to the 15th century, and an important part of the worldview change, as we shall see. Many Hermeticists were/are also Christian, Buddhist, Jewish, or Islamic. Some believe that Hermetic truths are at the core of all great religions. Most religions have a mystical core, around which are gathered believers in concentric circles of understanding. The most numerous in each religious group form the outer circle of conventional membership, lacking deep understanding of what the religion is all about.

Berman emphasizes that the Hermetic or esoteric traditions of secret knowledge, including alchemy, involve participating consciousness. These traditions contain the notion that "in a literal or figurative sense, everything in the universe is alive and interrelated, and that we know the world through direct identification with it, or immersion in its phenomena."

Let's make it quite clear, however: Berman, Burrell, and other scholars and scientists who are dissatisfied with the paradigms that have brought us to the verge of extinction are *not* arguing either that we should or that we could turn back to the worldviews of 17th century alchemists and Hermeticists. They do suggest that alchemical knowledge and Hermetic wisdom were capable of developing into a form of science different from, and more life-affirming than, the Cartesian-Newtonian science which did develop in the course of the seventeenth century.

Furthermore, it almost happened, in Prague.

The Rosicrucian Enlightenmen

Our current hope for enchantment lies in a recovery of the Renaissance appreciation of macrocosm/microcosm dynamics, spelled out so imaginatively by Fludd, Ficino, Paracelsus, and others.

Thomas Moore, *The Re-Enchantment of Daily Life*

As previously mentioned, Prague was a major center for esoteric studies. The label 'Rosicrucian' was attached to these ideas, which then developed into a full-blown culture in Bohemia and Heidelberg. For a period of thirty years from about 1590 to 1620, the "Rosicrucian Enlightenment" flowered in Prague and Bohemia, greatly influencing European thought.

According to Burrell, crucial elements of Rosicrucianism were belief in utopia; brotherly love; healing the sick free of charge; a reformed system of education; and bringing humanity back to its original state of Paradise. Rosicrucians were to be members of an invisible college, practicing secrecy. "They sought a magical, revelatory science, seeing themselves as conjurors and magicians. Musical instruments, the alchemist's forge, and architectural mathematics were the key devices to be used in their activities."

However, Prague was a strongly Protestant city, and by now the Roman Catholic Church had mounted its Counter-Reformation against all sorts of dissent and heretical ideas. Witch-hunts were part of this movement. The devastating Thirty Years' War actually began with a struggle between Bohemian Protestants and their new King Ferdinand, a devout Catholic, in 1618. The Protestants were defeated. Catholic forces entered Prague in 1620, and by a strange twist of fate, they included Descartes himself. Counter-Reformation forces launched a propaganda campaign against Rosicrucian ideas, destroying libraries and classrooms in Prague.

Thousands of refugees fled to Flanders and the Netherlands, where they maintained a decentralized organization of "Christian Unions" formed of individual cells.

The Bohemian philosopher John Amos Comenius had tried to build a form of universal knowledge or Pansophia in Prague, calling it a "theater of all knowledge;" but he was frustrated by the actions of the Counter-Reformation. Comenius had a very high reputation throughout Europe. In 1640 the English parliament invited Comenius to England to build a utopian society like that in Bacon's *New Atlantis*. For some reason, nothing came of this. Comenius also may have received an invitation from the newly founded Harvard University in the American colonies to be its first president—that did not happen, either.

Meanwhile, a friar friend of Descartes, Marin Mersenne, was greatly alarmed by Rosicrucian ideas and by Hermeticism generally. He saw them as vicious doctrines promoted by subversive agents. Burrell says that Mersenne "launched a massive attack on the Renaissance" in 1623. He tried to exorcise Renaissance philosophy from French-controlled territory and to replace it with Cartesian ideas of the 'mechanical philosophy.'

A cross-country debate developed between Mersenne and the English physician and alchemist Robert Fludd, who was as cantankerous as Mersenne was fanatic. This controversy escalated as another friar friendly to Mersenne and Descartes—Pierre Gassendi—constructed a worldview of matter and motion that Berman says "amounted to a billiard-ball conception of the universe." Mersenne and Gassendi conducted a vast correspondence with scientists across Europe, which Berman says turned Mersenne's monastic cell into

> the virtual nerve center of European science….This attack so snowballed, enlisting as it did the finest minds of Europe, that it has rightly been regarded as the death knell of animism in the West….The mechanical philosophy, and the divorce of fact from value, were built right into the guidelines of the Royal Society.

The Royal Society of London for the Improvement of Natural Knowledge, founded in 1660, is still the academy of sciences of the UK. An "invisible college" of natural philosophers, including alchemists and freemasons, founded the organization. According to Burrell, there was still a possibility in the latter seventeenth century of a Rosicrucian-led Enlightenment, but then "Rosicrucianism was hijacked by scientists and Freemasons for their own purposes."

Meanwhile, more was going on than intellectual disputes. Between 1618 and 1648 a series of European wars known as the Thirty Years' War involved a number of countries, from Spain to Sweden. Their battles, which mostly took place in Germany and central Europe, involved both religious conflict and struggles for political and territorial domination. In particular, France was fighting the Hapsburgs, the family that ruled the Holy Roman Empire centered in Germany. The religious war was among Catholics, Lutherans, and Calvinists. Within Germany, various principalities took sides and fought each other in civil wars. This entire unholy mess cost an estimated three to eight million lives—most of them peasants, of course.

The Treaty of Westphalia that ended the Thirty Years' War in 1648 put an end to the bloody religious strife in Europe, so that Catholics and various kinds of Protestants could coexist without constant battles. Britain did not reach this point of "live and let live" until 1688. In Northern Ireland, the 'Troubles' are only now winding down.

The Politics of a Paradigm Shift

The forces that triumphed in the second half of the seventeenth century were those of bourgeois ideology and laissez-faire capitalism. Not only was the idea of living matter heresy to such groups, it was also economically inconvenient. [For] if nature is dead, there are no restraints on exploiting it for profit.

Morris Berman, *The Reenchantment of the World*

Participating consciousness had already been somewhat eroded by attitudes of the ancient Greeks and Hebrews, but most humans still operated this way, according to Berman and others, until the drastic changes in worldview that came about in the course of the seventeenth century. This was a turbulent time, with great social and economic inequities, political conflicts and unrest, due to the enclosure movement; the growing power of mercantile interests; the Protestant Reformation; the Catholic Counter Reformation; the Thirty Years War in Europe and a Civil War in England; witch hunting at its peak; and recurring epidemics.

The paradigm of scientific materialism developed in the seventeenth century especially in the ideas of Francis Bacon and René Descartes, and the demonstration of such ideas by two great scientists, Galileo Galilei and Isaac Newton. Bacon (1561-1626) and Galileo (1564-1642) were roughly contemporaneous, with Descartes born a bit later (1596-1642). Newton was of a later generation (1642-1726).

Francis Bacon was an English philosopher, statesman, jurist, courtier, and essayist whose main reputation rests on his theories about science. The Baconian method was inductive, based on observation and experimentation. At the time, people connected such methods with Hermeticism and alchemy. The idea of dominating nature thus came out of the magical tradition.

Bacon argued that practical knowledge and technical inventions are also part of science. Science and the "mechanical arts" had previously been quite separate domains. He was one of the first to connect science with technology, and to see the combination as the engine of human progress and betterment. Certainly, his promotion of such ideas was highly influential, especially because of his utopian novel *New Atlantis*, which bases humanity's well-being entirely on science and technology. Bacon foresaw several future inventions. One site says: "He mentions the skyscraper ('High Towers, the Highest about half a Mile in height'), the refrigeration of food, air-conditioning ('Chambers of Health, wher wee qualifie the Aire'), telephones ('meanes to convey Sounds in Trunks and Pipes'), airplanes, and submarines."

However, the downside of Bacon's powerful imprint on modern science was his extreme anthropocentrism, or human-centeredness, and his disregard of nature—if not antagonism to it. Bacon's statement, "For the whole world works together in the service of man," expresses this anthropocentric attitude. Similar ideas persisted. Several generations later the Enlightenment philosopher John Locke declared that the "negation of nature is the way to happiness." Jagtenberg and McKie point out that a lasting legacy of the Scientific Revolution is the intellectual will to dominance, especially to dominate the natural world.

The French mathematician and philosopher René Descartes provided a philosophical framework for the developing natural sciences. Descartes was a brilliant thinker who invented analytic geometry. He saw the essence of 'man' as thinker, and his famous philosophical statement was: "*Cogito, ergo sum*—I think, therefore I am." Furthermore, for Descartes, thinking is a purely mechanical process. One breaks the problem down into its components, perceives or measures the parts, and then sums up the results, a process Berman describes as *atomism*. This is

the doctrine that any phenomenon or object is no less and no more than the sum of its parts. Another word sometimes used for this approach, often negatively, is *reductionism*.

It may be illuminating to know that Descartes lost his mother to tuberculosis when he was a baby, and was brought up by his grandmother and servants who perhaps lacked a mother's affection. There is a certain coldness and lack of empathy in his personality. For example, early medical scientists had been employing vivisection to better understand the workings of the human body. The subjects of this torture were dogs, not anesthetized, tied to boards. Because many people protested this practice, the vivisectionists turned to Descartes for justification. And he gave it to them, saying that animals were insensible, irrational machines that could not feel pain or suffer. Thus, says Roderick Frazier Nash, professor of environmental studies, "The nonhuman world became a 'thing.' Descartes understood this objectification of nature as an important prerequisite to the progress of science and civilization."

Berman notes an "uncanny similarity" between Descartes' mind-body split and psychiatric descriptions of the schizophrenic's alienation from his body, adding that "this schizoid duality lies at the heart of the *Cartesian paradigm*." Berman describes this Cartesian paradigm as the dominant mode of consciousness in the West since the 17th century. It defines as real only that which the scientific method can analyze or explain. This method is a set of procedures that combine experiment, atomism, quantification, and the mechanical philosophy. The Cartesian paradigm sees the world as a "vast collection of matter and motion, obeying mathematical laws."

Isaac Newton was not only a brilliant scientist, but pivotal in the great changeover from one set of paradigms to the next. During his youth in England, from the 1650s to the 1680s, thinkers were very interested in alchemy and mysticism. Newton was well versed in such studies. However, by 1700, alchemy was discredited. Isaac Newton was its last great practitioner. According to the influential modern economist John Maynard Keynes, "Newton was not the first of the age of reason. He was the last of the magicians."

Newton had a large alchemical library, but he kept his interests private. With changes in society, he changed his outlook. Berman says, "As a result of a self-repression that had an important political motivation behind it, he gradually evolved into a mechanical philosopher." Even so, some contemporaries attacked Newton because his theory of gravitation resembled the Hermetic idea of sympathetic attraction. In the 18th century, those who wrote about Newton cleaned him up and ignored any mention of his occult studies.

It was not simply that everybody looked at the ideas of Descartes and Newton, saying "Aha! Now everything comes clear. This is the way we will think henceforth." There were social, economic, religious, and political reasons for the ascendancy of our particular form of science.

First were the effects of the ***enclosure movement*** in England, which has been described as "the revolution of the rich against the poor." Starting by the thirteenth century, but speeding up by the fifteenth and sixteenth centuries, many open fields were enclosed by hedges into individually owned fields as pastureland for sheep. The motivation for enclosure was the growing profitability of sheep-farming. Before enclosure, the accepted concept of ownership gave the owner rights to the crops, but otherwise the land was open to communal grazing after the harvest or in those years when land lay fallow. The land was not open to everyone, only local people whose families had held these rights for generations. Commoners believed that they were asserting ancient rights granted them by tradition and law "to cut underwood, to run pigs." These were significant rights for subsistence farmers, at a time when most people were extremely poor.

Another aspect of enclosure affected areas where poor people had grazed their animals on marginal land not suitable for crops, such as moors and marshes. Now as these too were being drained and enclosed, peasants rioted, pulling down the hedges that surrounded their ancient commons. Enclosure depopulated whole villages, creating large numbers of landless, homeless, poverty-stricken people. By the sixteenth century, poverty was acute, affecting an estimated 60 to 80 percent of the population. Those who could afford to rent land were often subjected to excessive rates, called 'rackrenting.' From about 1630 to 1750, about two-fifths of rural people had to abandon life in the countryside. Another effect of enclosure was to reduce grain production, which made famine more likely because people had to pay higher prices for imported grain.

One result of enclosure was the creation of large numbers of rebellious, impoverished people. Some of them turned to thievery, others to new religions with new visions of society. Berman says that one dimension of the English Civil War (1642-1651) was that a number of religious-political groups holding beliefs in communism or utopian socialism fought against the Crown and later against the Parliamentarians. They were called Diggers, Levellers, Muggletonians, Fifth Monarchy Men, Ranters, and Seekers. Their religion was often Hermeticism or a version of alchemy that emphasized that any individual could attain enlightenment and directly experience God. They carried the ideas of the Protestant Reformation far beyond those of Luther or Calvin.

Hermetic and alchemical ideas thus became linked to political radicalism. In reaction to these groups—at the time such beliefs were called *religious enthusiasm*—the leaders of society turned to the mechanical philosophy as a sounder basis for the kind of society they wanted.

Mercantilism: The feudal system had reached its economic limits beginning in the thirteenth century, according to Berman. Peasants rebelled about poor living conditions, and there was enormous pressure to expand the geographic base of the economy: new areas to grow sugar and wheat, new sources of wood, more direct access to the spices that could disguise bad meat (no refrigeration), and larger fishing grounds. Increasing exploration and imperial conquest began in the fifteenth century, aided by new inventions such as the full-rigged ship, firearms based on gunpowder, and new maps based on exploration by compass.

Mercantilism, an economic theory developed by merchants and government officials, held sway between 1500 and 1750. Capitalism developed under this philosophy. The mercantile theory was that the prosperity of a nation depends on the amount of its capital, its silver and gold; therefore, the government should assure a positive balance of trade with other countries (more exports than imports) by protecting home industries with tariffs. "The mercantilist idea [was] that all trade was a zero sum game, in which each side was trying to best the other in ruthless competition." This dark view of human nature fit into the Puritan view and was integrated into the influential works of Thomas Hobbes, the political philosopher. As European powers fought over access to markets, "mercantilism encouraged the many European wars of the period, and fueled European imperialism."

As the feudal economy collapsed, the seventeenth century stabilized with a new framework of capitalism and a new definition of reality based on the scientific attitudes of experiment, quantification, and technical mastery. Berman says:

> In the course of the seventeenth century, Western Europe hammered out a new way of perceiving reality. The most important change was the shift from quality to quantity, from 'why' to 'how.' The universe, once seen as alive, possessing its own goals and purposes, is now a collection of inert matter, hurrying around endlessly and meaninglessly, as Alfred North Whitehead put it.

Berman adds that modern science is the mental framework of a world defined by capital accumulation.

The Mechanical Philosophy

Knowing the nature and behavior of fire, water, air, stars, the heavens, and all the other bodies which surround us…we can employ these entities for all the purposes for which they are suited, and so make ourselves masters and possessors of nature.
René Descartes, *Discourse on Method*, 1637

The paradigm of the Newtonian World Machine dominated thinking for at least two centuries. "From the seventeenth century on, the clock became a metaphor for the universe itself." One result was the eighteenth century Deist notion of God as a sort of master clockmaker who set the world into motion, then stepped aside and took no more interest in it. Scientists and theologians alike looked for order, for a mechanical regularity, for the scientific laws that could demonstrate what had been the Grand Design in the mind of God at the time of Creation. When Linnaeus created as his life's work a taxonomic structure to include all plants and animals, it was not to reflect the static hierarchy of the medieval Chain of Being but a different sort of eternal order. Linnaeus named the living things, as Adam did, but this time based on close observation of morphological similarities between organisms of the same families.

Newtonian mechanics was successfully applied to phenomena such as the motion of fluids and the vibrations of elastic bodies; so successfully, in fact, that the paradigms of physics became the basis of all the sciences, and much else. "The overwhelming success of Newtonian physics and the Cartesian belief in the certainty of scientific knowledge led directly to the emphasis on hard science and hard technology in our culture," according to physicist Fritjof Capra.

But Newton is Not Enough

Anyone who is not shocked by quantum theory has not understood a single word.
Niels Bohr, founder of quantum mechanics

The Newtonian model began to show its limitations in the nineteenth century when studies of electric and magnetic phenomena by Michael Faraday and Clerk Maxwell led to the realization that force fields could not be explained mechanically. Geologists, philosophers, and biologists early in the century began to think in terms of evolution: development, growth, change. Then Charles Darwin's theory forced science to abandon the idea of a world machine that was created once and for all times. As Capra says, "Darwin presented an overwhelming mass of evidence in favor of biological evolution, establishing the phenomenon for scientists beyond any doubt."

In the twentieth century the physicists themselves were forced to challenge Newtonian mechanics, as atomic and sub-atomic particles did not obey the classical theories. Although the paradigm still works well enough for everyday, objects on the very small scale and also the very

large scale don't follow the rules, and require different explanations. With quantum theory, and Heisenberg's uncertainty principle, and subsequent conceptions of twentieth century physicists, we are in the world of Alice in Wonderland—thinking two impossible things before breakfast.

The uncertainty principle is a mathematical limit on the accuracy of measuring everything there is to know about a particle or system. For instance, in trying to measure the position and momentum of a particle, the more accurately a scientist measures one of these, the less accurately she can measure the other. These phenomena on the very small scale show characteristics of being both matter and waves at the same time (wave-particle duality). Most scientists take the uncertainty principle to mean that the physical universe is not predetermined, but is instead a collection of potentials or probabilities.

Capra says that the new physics that emerged in the first three decades of the 20th century, although it is still not widely understood by the public, has already changed the worldview of many scientists and a widening circle of others. They have moved away from the mechanistic conceptions of Descartes and Newton, towards a holistic, ecological view that Capra says is similar to that of mystics of all traditions throughout history. Although some quantum physicists including Heisenberg and Bohr were sympathetic to this view, many scientists are not. I recently overheard a university physics professor describe Capra's *Tao of Physics* to another person as "sixties stuff."

The current paradigm shift also moves away from belief in the scientific method as the only valid approach to knowledge, the view of society as a competitive struggle for existence, and the Baconian belief in unlimited material progress to be achieved through economic and technological growth. As in the turbulent 17th century, more than one shift is occurring at the same time. Adding to the urgency of change, Capra notes that our 20th-21st century scientific paradigm shift is taking place at the same time as two other great transitions: the decline of the fossil-fuel age and the decline of patriarchy, defined as authoritarian rule as well as the subordination of women.

In humanity's attempt to transcend Stone Age thinking we unfortunately put aside the most valuable core of it, the awareness that we are part of nature. It is absolutely necessary for our survival now to reintegrate this ancient knowledge into new paradigms.

Chapter 16: Replacing Reality

Man thinks in two kinds of terms: one, the natural terms, shared with the beasts; the other, the conventional terms (the logicals) enjoyed by men alone.
William of Ockham, philosopher, 1280-1349

William of Ockham could not possibly have predicted the degree to which humans by the twenty-first century would have replaced the "natural terms" with the "conventional terms [abstractions] enjoyed by men alone."

From abstraction we have come to virtual reality. In South Korea, which is the epicenter of electronic game addiction (especially online, interactive, role-playing games) the government opened a treatment center in 2002 and recently set up a game addiction hot line. Hundreds of hospitals and psychiatric clinics in South Korea have also opened treatment units, and an estimated 2.4 percent of people from age nine to 39 may be suffering from game addiction. In 2005, ten died from causes related to this addiction, such as disruption in blood circulation from sitting in one position too long. Similar problems exist but to a lesser extent in the United States and Japan.

A seemingly more benign manifestation is the virtual reality experience (out of California) called "Second Life" which has at least a million participants. More than 100 of them earn a real world, full-time income by selling virtual land and products, and virtual services including sex. "Much of the [Second Life] world's residential property looks like Malibu [California]—a reflection of people's earthly desires." It seems quite a few people want to live in a different reality, even one that is not much different from consensus reality.

But virtual reality and game addiction are just a small part of what is happening. For instance, take our world financial system, which according to David Korten is a cyberspace game played by half a million to a million people mainly from Europe, North America, and Japan. Each morning the game begins anew:

> They turn on their computers, and leave the real world of people, things, and nature, to immerse themselves in playing the world's most lucrative computer game....The money game players have been so successful in creating play money that for every $1 now circulating in the productive world economy of real goods and services, it is estimated that there is $20 to $50 circulating in the world of pure finance.

Howard Rheingold describes the "electronic virtualization of money." Already twenty years ago, Peter Schwartz, a strategic planner, noted that international foreign exchange transactions ($87 trillion in 1986) were several times larger than the gross world product. The values of currencies are no longer connected to anything real, says Rheingold, since "it became possible to make huge amounts of money, absolutely risk-free, by moving even huger amounts of money from one currency to another...facilitated by electronic communication."

The money game has real world consequences, such as the Mexican peso crisis in 1995. Mexico had attracted $70 billion in foreign money, only a small fraction of which went into real investments. After helping to create twenty-four Mexican billionaires, the bubble burst. The peso plummeted. There were huge job losses on both sides of the border. Korten describes what happened then:

U.S. president Clinton put together a $50 billion bailout package at taxpayer's expense to assure that the Wall Street firms that held Mexican bonds would be repaid....Not a penny of the bailout money went to the 750,000 Mexicans who would be put out of work by government imposed austerity measures or the million Americans expected to lose their jobs to NAFTA by the end of 1995.

Here are more real world consequences of playing computer games. Korten says that at Kidder Peabody, a major investment house, one trader reported $1.7 trillion worth of phony trades over 2½ years before his bosses noticed. At the 233-year-old Barings bank in the UK, a young trader lost $1.3 billion in one month and forced the bank into bankruptcy.

Then there is the plastic world. To be in debt was once considered shameful, even criminal, and for several hundred years there were "debtors' prisons." The American state of Georgia and the country of Australia were largely settled by debtors from the prisons of England. But views about debt changed 180 degrees just within the past generation. Now, almost everybody uses plastic. Invitations to apply for credit cards come in the mail sometimes even to children and family pets.

In the United States, personal debt (including student loans and auto loans) is now, on average, greater than personal income. (Susan C. Walker, "U.S. Consumer Credit Card Debt May Crash Economy," FoxNews.com, Dec. 31, 2004) According to the CNN Money website, consumer spending accounts for about 70 percent of the U.S. economy. "So the world economy is leveraged to the U.S. consumer. And the U.S. consumer is leveraged to the hilt." When debt is greater than income, are we living in a virtual reality?

This chapter is about the way our species is becoming more and more involved with abstractions, artificial life, and manufactured images. While humans have advanced in skill and numbers, at the same time we have become increasingly separated from our biological selves and unaware of our place in the community of life. This is particularly true of the last three hundred years.

Today we are so far from our original participating consciousness and so far into abstractions and man-made realities that many people truly think that food comes from the grocery store. This reminds me of a short story written 100 years ago by E.M. Forster, called "The Machine Stops." People lived in a vast underground network in which "the machine" took care of their every need. Suddenly one day everything just ground to a halt, and very few of the by now parasitic humans had any notion of how to survive.

Some geneticists want to remake the human race according to consumerist criteria such as beauty and athletic prowess (human genome genetic engineering). Geostrategists at the top levels of governments talk about megadeaths without blinking an eye. Our leaders, our elite, movers and shakers and opinion-makers are 'so out of it' with 'it' meaning our biological consciousness, our participation in the whole of life.

Abstraction[2]

*She taught an undergraduate course, biology for non-scientists, and she was used to wild metaphors. Talk of double helixes spawned questions about single and quadruple helixes, **as if the ability to assemble words meant that the phenomenon was possible**.*

Phillip C. Jennings, "Martin's Feast," *Asimov's*, July 1989

Paul Shepard notes that childhood is the time to acquire words in their literal meaning, a vocabulary based primarily on nature, body part and functions, and common objects of the home and neighborhood. He says that "It would be interesting to know how much abstraction people can stand without reference to creature images." He describes how a million or so years of viewing large mammals have produced a thought template of the large, active body. Just as the toddler assumes that things that move are alive and have volition, so at some level do we see machines as being alive.

> Like dogs yipping at the tires of automobiles, just where the Achilles tendon should be in the caribou, antelope, or deer, city men cross busy streets without hesitation, like hunters moving in a herd of hoofed animals. The template translates 'animal' at levels of subconscious perception in spite of the conscious knowledge that they are 'only' machines.

In adolescence and adulthood, people acquire language as literal-plus-metaphorical. Shepard says, "With the transitional period of puberty, the door closes on the real world, that is, on the raw materials from which a cosmos is to be created."

Once we as individuals and we as civilizations began the flight into abstractions, we found ourselves a long way from home base. Flight has at least two connotations: one implies achieving heights and the other implies escape.

We're Animals Too

> *What I do find surprising is not the assumption that men have souls, but that it should ever have come to be commonly assumed that no other creature has. The dead body of even a Volvox seems suddenly to have been vacated. Something intangible seems to have departed from it. The sense that something which was there is gone is almost as strong in the one case as in the other.*
> Joseph Wood Krutch, *The Great Chain of Life*

There are several ways to talk about this tendency to replace direct experience with abstractions. One of these has to do with animals: our cognitive dependence on them; perceptions of and relationships with them; and how all these changed from when we were hunters, to when we were herders, to the current situation in which many urban people have never experienced animals other than household pets.

Many people still respect and try to preserve wild life. Besides the defenders of wolves and grizzlies, there are many others who set up bat houses, birdfeeders, and plantings to attract butterflies in their backyards (see, for instance, the magazine *Birds and Blooms*). However, some folks view little dogs as fashion accessories, some of us scream at the sight of a spider or mouse, and others think of animals only in practical terms of pests, hunting, or meat.

Czech novelist Milan Kundera puts human treatment of animals at the base of human morality, and finds a fundamental failure there. He says: "True human goodness, in all its purity and freedom, can come to the fore only when its recipient has no power. [Humanity's] true moral test, its fundamental test (which lies deeply buried from view), consists of its attitude towards those who are at its mercy: animals. And in this respect, mankind has suffered a fundamental debacle, a debacle so fundamental that all others stem from it."

Many people do not even want to acknowledge that humans are animals too, albeit a very odd kind of animal. This denial is part of the resistance to the concept of evolution, and apparently the denial came first. Letter after letter to the editor accuses evolution of teaching that humans

are "just animals" and therefore without moral sense. People often project all the worst traits of human beings onto other animals ("Nature, red in tooth and claw") or onto our own animal nature which we must struggle against ("the beast within"). One result of this contempt for animals and animal behavior can be severe repression of human sexual urges or of sense experiences in general.

Our alienation from animals shows in the way that many of us, including orthodox scientists, greatly underestimate the abilities of other animals to think and communicate and have emotions (even as Descartes denied such abilities). Scientific skepticism is especially high concerning anything that smacks of "anthropomorphism," that is to say, attributing to animals what the orthodox consider solely human traits. Science writer Loren Eiseley says: "There is a sense in which when we cease to anthropomorphize, we cease to be men, for when we cease to have human contact with animals and deny them all relation to ourselves, we tend in the end to cease to anthropomorphize ourselves—to deny our own humanity."

Meanwhile, animals demonstrate many 'human' traits to the scientists who study them. Biologist Jonathan Balcombe finds evidence for a wide range of animal behaviors consistent with consciousness such as formation of concepts, anticipation, audience effects, deception, problem-solving, insight, having beliefs, and a sense of fairness.

Naturalists and field biologists, with more direct experience of animals outside the lab, are more likely to respect them and to recognize their abilities. Jane Goodall is a good example. One could say that a greater degree of participating consciousness exists among such scientists, while they still apply the objectivity and discipline of science. According to elephant expert David Gucwa, a scientist needs to look at living animals from at least three planes:

> The foundation of the way I look at animals is simple, basic appreciation of what the animal is. Next comes concern—concern for one life, concern for all life. We must not weigh the value of life solely on the scale of intelligence. And only after that comes the third part: scientific inquiry into nature. Its aim...should be to let us gain a more intimate understanding.

The treatment of animals relates to the larger question of the relationship between humans and nature as a whole. In the original world view, humans were part of nature and animals were their relatives. Totemism was the virtually universal practice of creating rituals to celebrate the close kinship of each human group with one or more animals. This ancient system of belief has its modern echo in the mascots of sports teams. Paul Shepard notes that "Totemic thought is much broader than clanship systems utilizing animal figureheads. It is a process whereby abstract ideas are anchored to living images." Totemism was part of the larger worldview of animism, that everything, even stones and rivers, is alive and possesses its own spirit.

Morris Berman says that the ancient Greeks and Jews were the first to reject this original consciousness. The official rabbinical tradition was based on rooting out totemistic beliefs ("worshipping graven images"). In the Hebrew tradition, "Ecstatic merger with nature is judged not merely as ignorance, but as idolatry." In fact, this rejection of animistic thinking was the very basis of the covenant that made the Jews "chosen." Meanwhile, Greek thinking had also begun to reject animism. Berman says Greek rationalism had contempt for any other mode of cognition:

> The separation of mind and body, subject and object, is discernible as a historical trend by the 6th century before Christ; and the poetic, or Homeric mentality, in which the individual is immersed in a sea of contradictory experiences and learns about the world through emotional identification with it (original participation), is precisely what Socrates and Plato intended to destroy.

Paul Shepard suggests that the change began even earlier, 10,000 years ago, with pastoralism. When humans changed from hunters to herders, they now thought in terms of an opposition between wild and domestic, which introduced "a jarring alteration in world view." Wild nature starts to represent a disorganized and threatening "outside" and then its social equivalent appears—social outsiders, other tribes, and pseudo-species. The worst effect of pastoralism is on the environment, where it is the "arch-destroyer of soils, grasslands, and forests….The advance of deserts wherever hoofed animals have been herded is a fact of history." Shepard says it was from animal-keepers such as the Hun and Scythian horsemen, Mediterranean goat-keepers, Semitic cattle-breeders, Persian shepherds, and Arabian camel-keepers, that the Western world formed its premises for a world view. We may note that both the Greeks and the Jews were herding societies that had already begun to degrade their respective landscapes.

Despite the world views of nomadic herders, ancient rabbis, and Greek philosophers, most of the recently pagan peoples of Europe apparently continued to believe what they had always believed, that nature was something larger than humans. Most people still lived close to the soil, where it is hard to separate yourself from nature. Roderick Frazier Nash says that the Roman legal system had a separate body of moral precepts—the *jus animalium*—that implied animals had inherent rights apart from human civilization or government. However, Christian Europe increasingly found that the only values of nature were its utility to humans, until seventeenth century thinkers such as "the father of international law," Hugo Grotius (1583-1645) firmly rejected animal rights.

Nevertheless, says Nash, some seventeenth century thinkers transcended these utilitarian ideas, among them Henry More (an animist who taught at Cambridge), Gottfried Leibnitz (co-discoverer of calculus), and especially the Dutch philosopher Baruch Spinoza (1632-1677). Spinoza proposed that every being or object, whether birds, oaks, humans, rocks, or stars, was a temporary manifestation of a common substance created by God. Spinoza placed ultimate ethical value on the whole system rather than any single and transitory part. Thus he anticipated modern ecological consciousness.

The well-known entomologist E.O. Wilson proposes in the *Biophilia Hypothesis* that evolving humans were deeply enmeshed in nature and that we still have an ingrained affinity with nature. Wilson describes biophilia as the "innate tendency to focus on life and lifelike processes."

Wilson speaks of two themes at the base of ethics: the human-centered theme that measures what is good in terms of human welfare, and the expanding-circle theme that gives rights to all species. *But the two themes are not opposed.* He says that "for human survival and mental health and fulfillment we need the natural setting in which the human mind almost certainly evolved and in which culture has developed over these millions of years of evolution."

Wilson cites Karl von Frisch, who discovered the bee's dance that conveys the location of nectar sources to other members of the hive. Von Frisch said that each species is a magic well—an inexhaustible source of knowledge and understanding. Several generations of researchers have studied the honeybee, finding new things all the time. So it is with any species, says Wilson, they are all magic wells and we can't afford to lose any. They are all valuable and necessary to our future creativity.

By one way of looking at things, we humans ourselves are ecosystems rather than individual entities. Medical researcher Lewis Thomas notes that our genetic makeup is like a catalogue of instructions from many sources in nature, "filed for all kinds of contingencies." The

mitochondria at the center of our cells were probably primitive bacteria that swam into some ancestral precursor and stayed to provide the oxidative energy we need to move our muscles and neurons. Their DNA is quite different from ours. He says there are many other foreigners in our midst:

> What of the other little animals, similarly established in my cells, sorting and balancing me, clustering me together? My centrioles, basal bodies, and probably a good many other obscure tiny beings at work inside my cells, each with its own special genome, are as foreign, and as essential, as aphids in anthills.

Thomas notes that green plants are also dependent on a foreign organism that lives within them, the chloroplasts that carry on photosynthesis. Chloroplasts are very similar to prokaryotic blue-green algae. Since green plants are the ultimate food for all animals and they also generate the planet's oxygen, Thomas says that in a fundamental sense the mitochondria and chloroplasts are "the most important living things on Earth. Between them they produce the oxygen and arrange for its use. In effect, they run the place."

Machines Replace Animals

A world of made is not a world of born.
E.E. Cummings, poet, "Pity this busy monster, manunkind"

Expanding the idea of tools or machines is the concept of *artificial organs* or *additional organs*, introduced by German biologist Hans Hass. Artificial organs are extensions of the body itself, used not only by humans but other species. Animals use additional organs, for instance the shells that fiddler crabs borrow for their homes, or nests built by birds or hornets, or the aesthetic objects collected by male bowerbirds to attract the attention of potential mates. Spiders extrude silk to build webs to catch their prey. Symbiotic creatures may use each other as artificial organs, as in 'you scratch my back and I'll scratch yours.' Certain ants use aphids like milk cows.

However, humans as the extremists we are have carried the original notion to the nth degree. For us, an artificial organ is not only an empty bird's egg used to carry water or a spear to make up for our lack of claws. Other species and even members of our own species can become our additional organs—oxen, or slaves as human oxen. Rulers command whole armies of additional organs, in the form of soldiers who act like extensions of the ruler's body and willpower, themselves using artificial organs—crossbows, shields, tanks and other weapons.

And things rapidly get increasingly abstract: scribes write the ruler's decrees in clay tablets or on papyrus, while a class of administrators arises, and somebody invents coins for trade. Writing, bureaucracy, money, our languages and social structures, are all artificial organs that extend the reach of our own body and mind. Let us consider our present technology in this larger sense of artificial organs rather than simply as physical tools or machines. Much of the technology we currently use is so complex that it is closer to mathematics than to 'machines' in the 19th century sense in which we visualize them. And it is not only as armies or slaves that humans use other humans as artificial organs. (Note the term "wage-slaves.") Every business or institutional hierarchy works this way.

But first, let us go back to look at those 19th century machines, in the Age of Steam. During the early part of the Industrial Revolution, most people had little reason to like machines. First, the new, steam-driven monsters took away their livelihood. A weaver, for example, instead of

working at home for himself under self-chosen conditions, now must work at the machine's pace, under an owner or overseer who is often brutal and greedy. The workers themselves, not just the machines, are additional organs of those who own the machines. Kirkpatrick Sale says the choice in the late 17th century was between two new inventions. One weaving machine was used for a cottage-industry; the other required a factory set-up. The powers that be picked the second. Luddite riots in the early 1800s saw formerly self-employed artisans organize to destroy the new machinery. Although some try to paint the Luddites as ignorant people opposing progress, their motivation was rational self-interest.

Secondly, working conditions in the "dark, satanic mills" of the early Industrial Revolution were quite horrendous. Men, women, and children worked as many as fourteen hours a day, their actions driven by crude, steam-powered machines. It was a life not much better than slavery for the poorer classes of the British Isles whose previous generations had already been through the traumas of enclosure and numerous political/religious wars. America and Europe also had their Industrial Revolution, but it seems the first and worst excesses occurred in England.

The machine threatened not only the manhood but the humanity of people who simply wanted to work, to survive. John Henry, a black man in mid-nineteenth century America, was unusually strong, skilled at driving in rail spikes, but now there was a new machine to do that job. Somebody set up a contest pitting man against machine. The song goes, "Before I let that steam drill beat me down, I'll die with the hammer in my hand, Lord, Lord, I'll die with the hammer in my hand." And so he did.

(The modern equivalent of that steam drill is the chess-playing computer. The future equivalent of the steam drill is the artificial womb carrying a genetically modified human being who will look down on you and me as brutish proto-humans.)

Gradually, working conditions grew better. Machines also improved, and some of them caught the public imagination, especially the "Iron Horse" or locomotive. The transcontinental railroad crossed the entire nation mid-century, a technological achievement to celebrate. With the invention of cars (and then tractors) that replaced the horses that used to pull the family carriage or plow, suddenly we lost our close, 5,000-year link with these animals. They are few and far between today, sometimes a pet for the well-to-do.

At some point, we began to replace animal metaphors with machine metaphors. It is quite likely your high school biology text discussed the human body as a machine. After all, science arose from the "mechanical philosophy." This process of adding machine metaphors accelerated with the introduction of film, television, and especially computers, which provide many metaphors for the functioning of the human brain.

Time Waits for No Man

A considerable shift in sensibility occurred when we lost touch with the movements of the stars and began to rely on mechanical measurements of time and its associated metaphors.
Thomas Moore, *The Re-Enchantment of Everyday Life*

Time is a basic metaphor of the Industrial Revolution. In the machine age, people first became aware of speed as a quality that we could measure and adjust, says James Gleick in *Faster: The Acceleration of Just About Everything*. Trains were the first to demonstrate a steady speed. A century and a half later, we define the computer by speed, and our worldwide communications systems depend on nanoseconds (one-billionth of a second). We now live in '"a

time-gripped age," constantly measuring ourselves against the machine and adjusting to it. Speed has become a supernormal stimulus.

In the 1870s, Frederick W. Taylor was the first efficiency expert; he invented the time and motion study. With increasing competition between enterprises, manufacturers had become aware that time was always the key variable in production. Taylorism applies the ideal of efficiency to production in a methodical, scientific way so that humans and machines can work together like clockwork at maximum speed. One could see the cyborg as a logical extension of Taylor's philosophy and method.

For Charlie Chaplin's view of Taylorism, check out the silent movie "Modern Times," where the workers act like robots on the job and can't stop when the machines turn off at the end of the workday. Gleick says: "In the world's Taylorized factories, assembly-line efficiency is by its nature brutal, stripping craftsmen of autonomy, overriding what might have been a more natural, variable work rhythm.*"*

Living Vicariously

Reality has always been too small for human imagination.
Brenda Laurel, Ph.D. dissertation

Reading was the first technology to change the way humans think. Before written texts, people told stories and they remembered important events in oral traditions. Drama and bardic poetry (often accompanied by music on a stringed instrument) were important arts, central to a society's mythology and religion. Sometimes individuals demonstrated prodigious feats of memory by learning and performing sagas and other long works.

Widespread literacy may be as old as the Romans, suggested by large amounts of graffiti found at Roman sites. Religions helped spread literacy. The three "People of the Book," Jews, Christians, and Muslims all emphasized the study of holy texts, leading to relatively high levels of literacy among Jews in medieval times compared to their neighbors. In Islamic edict, it is an individual's religious obligation to be literate. After invention of the printing press and production of Bibles, reading spread widely among Protestant Christians. In New England, the literacy rate had risen to around 90 percent by the American Revolution, probably due to Puritan emphasis on Bible reading.

Since the technology of reading greatly increased the individual's acquaintance with abstract concepts and symbolic language, undoubtedly it has contributed something to our estrangement from the rest of nature. But we had a number of centuries to adapt, and the benefits of reading to the development of the human mind are arguably vast compared to those of watching television and playing videogames.

The written word also contains a built-in equilibrium device—since reading became widespread, writers have published stories that caution against taking other writing too seriously. The very first modern novel, *Don Quixote* (1605), was designed to satirize the romances of chivalry in literary vogue at the time. Jane Austen's *Northanger Abbey* has a young heroine whose judgment is skewed from reading too many Gothic thrillers. But if reading novels can interfere with someone's sense of reality, what happens after three or four hours of shoot-'em-up television every day? Or ten hours of role-playing games?

Growing Up Absurd and Wired

In cities around the globe, children of privilege are alike in their habits and beliefs, like shopping malls and airports, which lie outside the realms of time and space.
Eduardo Galeano, *Upside Down,* 2000

In another approach to this profound human change of consciousness, we look at how children grow up in our culture, how adults and their institutions are replacing direct experience with man-made, symbolic reality. This is especially true in the United States. Paul Goodman in *Growing up Absurd* (1960) was a passionate proponent of living as a complete human being. Goodman said his many divergent interests in urban design, children's rights, politics, literary criticism, and other fields were really "all one concern: how to make it possible to grow up as a human being into a culture without losing nature. I simply refuse to acknowledge that a sensible and honorable community does not exist."

Since Goodman's time, growing up as a natural human has become harder. One writer says "More than one therapist has told me that children no longer know what to do with a lump of clay—they are so used to the two-dimensional world of television sets and video games that they can't think in three dimensions."

To television and videogames we may now add computers. Two-thirds of American preschoolers and 80 percent of kindergarten children currently use computers, according to a Department of Education study. Many parents think this is a necessary skill today, best learned young. But a host of childhood experts think that young children should be having primary experiences outdoors or with other people instead. An education professor who taught computer science in high school for twenty years thinks that computer instruction can wait until middle school or high school. Lowell Monke says that while younger children may seem energized by their computer time, "We get them interested by stimulating their adrenal gland. That's not meaning. Then you turn the computer off, and the kid turns off."

John Gatto, a veteran teacher in New York City, says that "Two institutions currently control our children's lives: television and schooling." Despite or because of his long experience in public school systems, Gatto sees compulsory mass education as anti-life and absurd, "taking the time from our children that they need to grow up and forcing them to spend it all on abstractions." Gatto has spent his long, award-winning career working around the edges of public school systems, trying to show children how to teach themselves.

However, my emphasis here is on the institution Gatto mentioned first: television, the first and most widespread electronic dream-machine. A few decades ago, Jerry Mander wrote a critique of television that is just as applicable today, *Four Arguments for the Elimination of Television*. Most importantly, his analysis did not have so much to do with the content of television programs, as with the direct effect of the medium on human perception and neurophysiology.

Television was first introduced in the late 1940s, and Mander notes that by the early 1970s, 99 percent of homes had at least one TV set, going six hours a day or eight hours if there was a child in the home. Allowing for sleep and work, he estimates half of adult free time was spent watching television: "In one generation, out of hundreds of thousands in human evolution, America had become the first culture to have substituted secondary, mediated versions of experience for direct experience of the world."

The situation has not changed much in thirty years. According to the Census Bureau, the average American spends 1,548 hours a year watching television. Add another 1,753 hours spent listening to the radio, reading, listening to music, and using the Internet, for a total of nine and a half hours daily (although some media are used simultaneously).

This substitution of televised reality for direct experience has some profound consequences. The experience of watching television is similar to sense deprivation. The eye remains at a fixed distance without refocusing—constantly staring—unlike any previous human experience, while the senses of smell, taste, and touch are eliminated. The main thing that a person is doing when watching TV is looking at artificial light being projected into our eyes from behind the screen. Manders says, "We are receiving light through our eyes into our bodies, far enough in to affect our endocrine system."

A person in sensory deprivation is unusually susceptible to suggestion, and Mander says that many people describe the effect of TV viewing as "hypnotic." At least until the 1980s (when a coating was applied to screens) there was a flicker effect because the tiny phosphorescent dots of light go off at 30 times a second while humans can only translate these images at the rate of ten times a second. A psychologist who works with hypnotism, Dr. Freda Morris, says that since TV images move faster than a viewer's reaction time, the viewer has to chase after them with his mind. The viewer has no way to break the contact or to comment on the information passing in. Thus the nature of the technology itself stops the critical mind.

But apparently even the latest television technology has a similar problem. According to neuroscientists, the razor-sharp HDTV images add more visual information than the brain can process.

Too Much Focus: Another effect of focusing on a screen, especially watching television, is the potential loss of peripheral vision. The retina of our eye is supplied with rods and cones for two kinds of seeing, foveal or focused, and peripheral for watching the edges (looking out of "the corner" of one's eye). Our ancestors, like wild animals, kept a broad scan going for predators and other dangers. Peripheral vision is still an important ability for driving, sports, and physical jobs such as construction, farming, police work, or fighting wildfires.

Civilization is sometimes described as taking place two feet from the eyes (hand tools, crafts, reading). Mike Samuels and Nancy Samuels say that the 2000-year development of civilization "reads like a history of the social suppression of visualization and therefore a denial of one of our most basic mental processes. For visualization is the way we think."

Frank Forencich notes that with the invention of television and computers, most of us are limited to a single-point focus during much of our waking life, making peripheral vision "increasingly irrelevant and atrophied." Student carrels and office cubicles eliminate our sense of periphery in order that we can focus more deeply on the symbols we work with. Forencich adds:

> Unfortunately, this process is completely alien to our bodies. Carrels and cubicles create a narrowrama….By eliminating the periphery from our experience they introduce an artificial conflict into our experience. Our primal bodies want to look around and scan the neighborhood for threats, but the walls won't let us do it.

Forencich suggests that these conditions create unrecognized stress and anxiety especially in office workers and students. In classrooms, children are not supposed to daydream and look out the windows, we take away recess because it is unproductive, and we demand that children focus on the standardized test of the day. We also block out the periphery by eliminating panoramic studies such as evolution, outdoor education, and art. "And then we wonder why they get ADHD. But never fear, we give them Ritalin to help them focus their concentration even more tightly, a 'solution' that can only make the problem worse."

On the other hand, Finnish schools, whose students have ranked first on international tests, give a recess break about every hour. We adults naturally tend to give ourselves 'recess breaks.' Forencich points out that most people while reading will stop from time to time to look around. Not only does this rest your eyes and give a moment to absorb the ideas, but "a quick check for predators" calms the body too.

A second consequence of chronically focused vision is that our peripheral vision will go dormant. "It is safe to assume that our visual capabilities follow the familiar 'use it or lose it' pattern that we see so clearly in the musculoskeletal system." This atrophy may, in turn, affect our thinking, so that we "can't see the forest for the trees." As we focus on particulars, we become oblivious to context, environment, and relationship. "Peripheral vision serves as a counterweight, forcing us to connect to broader themes, landscapes and panoramas."

Social institutions may also force humans to focus attention through psychological and pharmacological means. Recent psychological research has found that most people's minds wander away from what they are doing (study or work) on an average of 30 to 40 percent of the time. Hopefully, those who apply the research will remain as open-minded as the researchers who say that we are wired to be wool-gatherers because this promotes creativity, or because most of the time, life doesn't demand our full attention. Otherwise, the prevention of wool-gathering could become a new way for our species to torture itself.

Adult Toys: I am not talking about sex toys found in adult stores but a phenomenon that is much more widespread. Those with enough affluence to provide their necessities find a host of other things to spend their money on. To some degree, most of us become collectors and hobbyists. People collect fishing flies, African violets, hunting dogs, miniatures, guns, Fiesta Ware, model trains, salt and pepper shakers, World War II paraphernalia, dolls, and a host of other things. Every hobby or sport requires its own accessories such as tools for the woodworking shop, running shoes, special clothes for biking or skiing, rods and flies, baking pans for Transylvanian cookies, and so on. There are mail order catalogs to serve all these needs.

In addition, many large-ticket items such as cars, trucks, and boats may serve psychological needs as much or more than their practical functions. Why else would people look for 'muscle cars' and excess horsepower at a time of higher gasoline prices? Popular science and handyman magazines glorify high tech and gadgetry, while military magazines do the same for surveillance equipment and weaponry. It is hard to resist the idea that adult males are playing out a lot of fantasies with actual hardware.

Now it is quite all right—in fact it is healthy for adults to play. Though it helps if the adult knows when he or she is playing. Problems arise when your play depends on consuming the world's resources at a rapid rate, or when the play function overtakes reality. Helen Caldicott, for one, has described high-tech military weapons as toys. This kind of hardware fantasy is not healthy play.

Is Virtual Reality Still Reality?

To represent something symbolically, as we do when we speak or write, is somehow to capture it, thus making it one's own. But with this approximation comes the realization that we have denied the immediacy of reality and that in creating a substitute we have but spun another thread in the web of our grand illusion.
<div align="center">Heinz Pagels, American physicist, 1939-1988</div>

You may be pleased to learn that twenty-five states so far have banned the practice of on-line hunting, in which clicking your mouse results in a firearm killing an animal several states away. Two unlikely allies, the Humane Society and the National Rifle Association agree that this is not real hunting. The only website that offered this experience of remote canned hunting, purportedly to let disabled people engage in the sport, has shut down.

On the other hand, video-games about U.S. troops fighting terrorists are popular across the world, and the reviewer describes several new games as "addictive enough to compel even the most pacifistic of gamers to pick up an assault rifle."

The newest fad for high school and even middle school students is "pill farming." Students find prescription drugs in the medicine cabinets of family members, take the pills to a party, put them in a big bowl, and take turns grabbing a handful. This surely results in some altered realities. David Montagu, who teaches a university course on U.S. drug policy, says that our culture does not view prescription drug abuse as being harmful like street drug abuse, a dangerous perception since prescription drugs and street drugs often have the same ingredients.

The Federal Reserve Bank reported that consumer debt was at an all-time high of $2.4 trillion, not counting mortgage loans. Machine-generated messages are increasing far more rapidly than messages generated by humans, according to Laszlo. A California website has outsourced its local news reporting to India.

Even technology-loving *Wired* Magazine expresses doubts about the possibility that "technology may allow us to produce pleasant sensations all the time….A species that shuts out adversity does not survive very long in a Darwinian universe."

The online virtual world called "Second Life" continues to grow and develop. Unlike any previous computer game, users (called residents) create the content. It is a way to control one's world. For many, the appeal is instant friendship and community. For others it seems to be a way to express their technical skills. Now several real-world corporations have set up shop in the online world. Toyota's Scion division has an in-world dealership and driving track. Universal Pictures, to promote its "Smokin' Aces" movie, set up a game within Second Life in which residents competed against each other to become the ultimate hired assassin and win a huge prize in virtual money. Players had a hit list and weaponry. "To hook players, NBC released new weapons throughout the 10-day game period." In less than two days, some of the players hacked the NBC weaponry cache.

Other virtual worlds are starting up—it is The Next Big Thing. Universities and research organizations use the simulated environment for experiments. Some see the future of work modeled after Second Life, people meeting online as 'avatars' to make business decisions. Some even regard this new trend as equivalent to the creation of the Web itself. MSNBC commentator Kristin Kaining says "Many involved with 'Second Life' predict that this is the next stage, the 'new Internet'."

Much of the Second Life experience appears to be a form of play, and one hesitates to criticize play, except to ask why people in this rich country need it so much and in this virtual form of materialism? Please, someone set up a virtual world where people's avatars can deal creatively with our real, species-wide, life-and-death problems.

Part IV: Myths

Chapter 17: The Mythic Impulse

Myth is a constant among all human beings in all times. [It] is the "glue" that holds societies together; it is the basis of identity for communities, tribes, and nations.
J.F. Bierlein, *Parallel Myths*, 1994

Our disenchanted Western culture very much underestimates and undervalues stories. I referred earlier to the Pennsylvania farming community in which fiction was equated to 'lies' and deemed suitable only for teaching children to read. A more sophisticated version of this attitude is the scientifically-oriented person who sees stories only as entertainment, a decoration on the important business of the day—which is gaining information about the physical universe. But psychotherapist Thomas Moore says many viewers are glued to the television set because "We are a people in desperate need of stories, so needy that we don't care much about the value of the story, as long as it absorbs our attention and stirs our emotions."

Mythology is the deepest level of story, which Moore describes as "an initiating story, an experience of the emotions and the imagination in which we make a significant shift from one level of awareness to another….not just a story to be told and heard but a story in which in some mysterious way I participate."

To distinguish these deep stories from what we commonly call 'myths' meaning widely-held but untrue beliefs we can use the words Mythos, mythology, or Myth.

Story Telling: Stories appear to be an older way of thinking than reason is. A story is simply a sequence of events with some emotional significance. It is an axiom that all of our fiction and drama is based on a few basic plots, such as 'boy meets girl, complications ensue, they resolve problems, boy gets girl." Another common plot in modern comic books and films as well as in ancient myths concerns the hero beset by adversaries. One can even imagine a prehistoric man telling a story about himself or his grandfather: he met a cave bear, then a man from a hostile tribe, and finally a saber tooth tiger, but overcame them all. Later his woman told the story to their young ones.

Let us speculate that the story form originated when our three-part brain had more balance, before the cortex became quite so dominant. At some point, however, humans became able to separate cortical thinking—largely about material and practical concerns—from the emotions of the limbic system. That was the beginning of reason.

That the telling of stories may be older than reason does not make it better or worse. It is probably more deeply necessary to our humanity. There are of course people who think that we should not have any emotions, although about the only way to accomplish that is to turn ourselves into machines.

Some modern philosophers such as Nietzsche consider that all stories, scientific theories and religious teachings are mythology.

Mythos: Mythology (sometimes referred to as Mythos) refers to the collective and sacred stories of a people that serve to integrate—or once did integrate—whole cultures. Hirsch says "The term *myth* itself implies community. In Greek, it means 'what they say.'" Most of us are

familiar with the Greek myths and legends, especially since they were the subjects of epics by Homer and equally great plays by Aeschylus, Sophocles, and Euripides, as well as Aristophanes in the comic mode. We named the planets after Roman (Greek) gods, and many allusions to Greek and Roman mythology embellish our language, such as Achilles heel, Pandora's Box, and the Midas touch.

The Norse gods were the center of a Germanic mythology which entered England through the Anglo-Saxon invasions. We still recognize Wednesday as Woden's Day and Thursday as Thor's day. Most of the Native Americans from the area now Mexico, western United States, and Canada told stories about the Trickster figure Coyote. Africans told stories about the spider Anansi. Every people had their stories, although in the United States we are most familiar with those from Europe.

Some mythologies contain elements of scientific knowledge. The ancient Mayans had a complex mythology or cosmogenesis based on sophisticated astronomical knowledge and shamanism. Mayan astronomy rivaled and, in some cases, may have surpassed our own modern knowledge regarding the cosmos despite their lack of telescopes. There is evidence, for instance, that they were aware of the black hole at the Galactic Center of our Milky Way galaxy. The date 2012, now only a year away, was highly significant to the Mayans many centuries ago. They believed December 21, 2012 to be the end of a 26,500-year age and the beginning of a new one.

Somewhat similar beliefs and astronomical knowledge built on centuries of observation are in the Egyptian, Babylonian, and Vedic (Indian) traditions. In the Vedic tradition, the 26,500-year age is called a *yuga.* Thus advanced astronomical knowledge was part of many ancient mythologies. Some scholars such as Giorgio de Santillana and Herta Von Dechend in *Hamlet's Mill* believe that in fact mythologies were primarily indicators of astronomical events. Various mythologies may contain other forms of proto-science or alternate science concerning for instance the behavior of water, or geomagnetic networks across the earth called ley lines.

Mythology includes not only stories but cultural metaphors, communal arts, masks, dance, dramatic rituals, music, and other expressions of psychic life. The purpose is to explain the origins of the cosmos, animals and people, and to give coherence to human existence. Octavio Paz, in the *Labyrinth of Solitude* defines Myth as "those paradigmatic events, conditions, deeds outside ordinary life yet basic to it. Set in a time different from historical time, often at the beginning of creation or at an early stage of prehistory, Myth provides models of human behavior, institutions or universal conditions."

Today's Mythology: We may think that we are beyond all that in the twenty-first century, but many aspects of contemporary life have mythological overtones, and not just in religion. We can see the mythic impulse at work in the great popularity of sword and sorcery fantasy novels, stories about dragons, and films or television series such as "The Lord of the Rings," *Star Trek,* and "Star Wars." Even though these are not mythologies of belief, they are capable of moving people emotionally, through "willing suspension of disbelief." Many of them, especially the Star Trek series and the *Rings* trilogy, concern issues of morality or ethics. The phenomenally popular Harry Potter books and films comprise another mythology, not at all limited to children. Although fundamentalist Christians found the Harry Potter world disturbing, others found Christian themes in the series.

Many films touch on our deeper psychic needs. The recent film "Superman Returns" has Messianic overtones and its promotion reaches out to the potentially large audience of conservative Christians. (While this is deliberately commercial, the mythological effects still exist.) Other films call forth deep fears. Illustrator and movie expert Vincent Di Fate says that

"the alien invasion theme is one of Hollywood's most enduring, and the aliens are always a metaphor for whatever else is troubling us."

British primatologist John Napier suggests that such mythology may be evolutionarily adaptive:

> As monster 'worship' seems to be an ancient and primitive possession, and a characteristic of human societies of all grades of technological evolution, it is fair to assume that it has some adaptive function, in a Darwinian sense, for human survival. Its hold on mankind has apparently little to do with intellectual ability; it permeates all classes and grades of society in one form or another; and it is this universality above all that argues in favor of the Darwinian interpretation.

Much mythology relates to religions. All three 'People of the Book'—Jews, Muslims, and Christians—believe that an ultimate savior will save mankind. This savior is called Messiah, Mahdi, or the Second Coming of Christ. While belief in this holy individual can bring hope to suffering people, there is also a great danger in this expectation, especially if the savior's return is believed to be imminent. People may not act for themselves or try to solve human-made problems but instead passively wait for God to save them.

Apocalyptic literature such as *The Revelation of St. John the Divine* belongs to a type of mythology—eschatology—which describes the catastrophic end of a world order. The "Left Behind" novels present a related end-times mythology believed by some contemporary people. Currently many of us are concerned about the disturbing interplay between one eschatological belief, the inevitability of Armageddon—a terrible military conflict prophesied for the Mideast— and actual world events that have occurred since the twenty-first century began. Some Evangelicals believe that this prophecy is fulfilling itself. Other people believe that such events could be self-fulfilling prophecies based on plans and policies of the United States and Israel.

Beyond these specific, public stories about alien invasions, dragons, or the anti-Christ, we find through history a constant tendency of people to idealize and mythologize people and events, including their dead relatives, their past personal triumphs and difficulties, their leaders, and history both recent and long past. For instance, some see the early 1900s or the 1950s as ideal decades, conveniently forgetting details such as high rates of alcoholism at the turn of the century or the fact that the 1950s were not so great for blacks or even for the conformist, driven Man in the Grey Flannel Suit and his housebound mate.

History as Mythology: Around three thousand years ago, History replaced Mythology, fixing the spotlight on the current doings of human beings rather than on their origins in and relations with nature and supernature. Paul Shepard points out that the very invention of history, by patriarchal desert peoples in the Near East, was the end of mythology and the beginning of a linear, man-centered view that broke our intuitive, cyclical link with nature.

The sacred history of the Hebrews described actualities of the Mediterranean world with its conquests, natural disasters, and slavery. Catastrophes probably destroyed the Minoan culture around 1500 B.C. and sent refugees around the Mediterranean much like the 'boat people' of our own day. Ancient historians described the empire builders and destroyers, the Assyrian who came down like a wolf on the fold, and the destruction of a vast forest of cedars in Lebanon, mostly by a succession of kings who used them to build their castles and ships.

History substituting for mythology often took on the latter's functions of integrating the culture, with kings and their dynasties assuming the role of gods. Later, oversimplified and culturally biased versions of history or mythologized history—adding actual fabrications such as

the account of Washington and the cherry tree—have long been presented to United States children and adolescents just as other biased histories were presented to the children of other nations.

Our country's mythologized history overlooked minorities. U.S. military actions were always heroic. There was little or no mention of working-class struggles or recurring financial 'panics' and economic hard times. A Native American found 'American' history not her story but the invader's story in the invader's words. Textbooks never mentioned that some cowboys were black, that Milwaukee once elected a socialist mayor, that U.S. soldiers massacred an Indian encampment at Sand Creek, Colorado composed mainly of women, children, and elders, that flamboyant feminist Victoria Woodhull ran for the presidency in 1872 on a platform that included free love, or that widespread draft riots paralyzed the city of New York early in the Civil War.

With all the juicy stuff left out, no wonder that Americans generally agreed with Henry Ford that "History is bunk!"—an instrument of propaganda and moralizing and, above all, dull. Lifelong lack of interest then accompanied lack of knowledge of our real history, so that Americans could continue to see themselves as uniquely altruistic, competent, and guilt-free. A vocal minority will vigorously defend the mythologized history that they were taught in childhood against anyone who would revise it, whom they believe to be unpatriotic. But for most people, mythologized history does not serve their needs for answers to unanswerable questions; in other words, it does not take the place of mythology.

Scientific Progress as Mythology: The mythology of scientific materialism and technological progress that sustained the United States through the later nineteenth and most of the twentieth century ended with the mushroom clouds over Hiroshima and Nagasaki. There were already scientific and philosophical fissures in the basic assumptions of materialism, but few noticed them, at least not yet a critical mass of individuals.

Orthodox science might be termed the anti-mythology mythology. While science can explain the physical origins of cosmos, animals, and people, it is less prepared to give coherence to human life. That was never really its mission. Some of the scientific-minded are prone to look down on mythology, often equating religion and mythology although they are not the same thing. However, science itself may be mythology in some senses, and scientists are often mythologized as heroes, saviors, or insane geniuses.

Transhumanists are trying to develop a new scientific mythology based on GNR technology, capitalism, libertarianism, and science fiction. I expect, and hope, that it will fail to engage large numbers of people. However, other approaches to science have more promise as a new mythology, to be discussed in Book 3.

Fundamentalist Mythology: Perhaps sensing weakness beneath the West's prevailing ideology, U.S. Christian fundamentalist ministers over the last century cobbled together bits and pieces of old theologies, Christian folklore, simple moralities, and new fantasies to create a chimerical mythology. Protestant fundamentalism is false or inadequate mythology because it is exclusive, oppositional, self-contradictory, and, in the context of current world conditions, more suicidal than liberating.

Fundamentalist memes appeal to some basic emotions, for example, preoccupation with sexual matters and the desire for certainty. Its memes spread vertically through home schooling, private schools, and cultural isolation, while also spreading horizontally through proselytizing

and Christian media networks. Fundamentalist memes currently (2007) have the advantage of numerous wealthy philanthropists, well-funded institutions, many media outlets, and friends in high places of government. Another advantage is the recent appearance of a natural enemy in Islamism, since the fundamentalist meme thrives on opposition to adversaries.

Other Attempted Mythologies: A blogger says that the "Invisible Hand" of supply and demand sounds to her like a god. Economist James K. Galbraith agrees with this intuition, noting that Adam Smith was a deist, as were so many of the American founders and English intellectuals of the time. Eighteenth-century deists believed in a Creator who provided a benevolent system of natural law to govern the human world but did not henceforth interfere in human affairs. Sometimes the deist god is described as a clockmaker. Thus the invisible hand of economics is very similar to the deist God of Adam Smith. The great American economist Thorstein Veblen at the end of the 19th century attempted to change this deistic conception and to make economics into a modern science. However, says Galbraith, most economists have always been Intelligent Designers, and metaphysics still dominates economics.

Humans appear to need a dramatic story to give meaning and coherence to their group life, and what shows up to fill that need may not be sensible, holistic, or wholesome. It may be based on nationalism, the rise of an oppressed class or revenge for past defeats, economic self-interest, even race hatred. Nationalist and internationalist ideologies such as Nazism, Communism, and the American Way have all attempted to fill the perceived vacuum of belief, with many millions dead as a result.

The American Way is a vague term that combines democracy and capitalism, but in actual practice justifies all sorts of military interventions in other countries. Communism is another belief-system that is idealistic in theory ("from each according to his ability, to each according to his need") but in practice often leads to bloody dictatorships.

Nazism deliberately used ancient mythology and ritual, but Nazis never intended their ideology to appeal to a wide portion of humanity, most of which they despised. They depended instead on the military prowess and technological superiority of one country to accomplish its ends by force. Yet this hate-filled ideology still has appeal to a certain number of working-class white youths in Europe and the U.S. where they are competing with new groups of immigrants for jobs.

Political, economic, and military-based mythologies cannot last long without force and propaganda to back them up. They do not fulfill human needs for an explanatory story that includes the cosmos. They are pretenders, usurpers.

Should Logos Replace Mythos?

> *Contemporary man has rationalized the myths, but he has not been able to destroy them.*
> Tom Wolfe, *The Electric Kool-Aid Acid Test*

Westerners need a new, life-enhancing mythology, and we need it urgently. However, some rationalists disagree, saying that Logos should replace Mythos entirely. They maintain that the power of reason should be foremost and the role of religion should disappear entirely. There are several difficulties with this 'Let there be Logos' view—first, the assumption that Mythos is identical with religion. Modern religions, unlike mythologies, have doctrines, theologies, holy books, ritual practices, and, often, hierarchical organizations with several layers of governance and often special terminology to go along with their special doctrines.

Many organized religions are based on old mythologies but they are dominated by ideology and are infiltrated by materialism (as in televangelism or megachurches with thousands of members). Some churches are supported by people just going through the motions, or playing follow the leader. They do not really represent Mythos.

On the other hand, some people are drawn to the mythological idea of the Earth as Gaia—one living, breathing, supra-entity. There is, however, no religious practice or organized religion based on this belief. Mythology and religion are not identical concepts.

Second, the Logos view ignores the possibility that most humans have a basic need for a coherent view of the world and the cosmos greater than that which can be supplied by scientific knowledge alone. Francois Bernard Mache, French writer and composer says:

> Beyond words and stories, myth seems more like a psychic content from which words, gestures, and musics radiate. History only chooses for it more or less becoming clothes. And these contents surge forth all the more vigorously from the nature of things when reason tries to repress them.

The Logos view assumes that people should be entirely rational, and discounts our emotional nature. It assumes that the basic human model is or should be Data or Mr. Spock (of *Star Trek*) or a dedicated scientist or perhaps a philosopher, although even scientists and philosophers have ambitions and love-affairs, quirks and flaws.

While I too like the fictional characters of Data and Spock, we cannot depend on a purely rational-minded human being to be as basically good-hearted as those two fictional rationalists. In fact, both Data and Spock are depicted as highly moral characters, positive and altruistic. We who followed the *Star Trek* series know that the Vulcans in past times were intensely emotional, and that even they cannot repress this nature during their periodic mating phases. Data, although he is supposed to be robotic, is also a good and ethical friend.

As for human beings, rationality can create A-bombs and extermination camps, empires and corruption. We have plenty of historical evidence about the downside of rationality. Humans need something more in addition to pure reason. We are emotional beings, capable of love and friendship. We have altruistic and cooperative tendencies. Reason is valuable and important, but it is not enough.

Mythology or Mythos is something distinct from morality, science, or religion, although it might well contain elements of all of these. In book 3 we will look at several potentials for a new Mythos developing today.

Chapter 18: Social Myths

Man does not think he thinks a thing. He simply thinks it is so.
Fyodor Dostoevsky, Russian novelist, 1821-1881

This chapter considers the term 'myth' in a sense unrelated to mythology. The keyword for myths is 'self-serving,' although some people accept the myth because others believe it, rather than from direct personal advantage. As the term is used here, myths are the social superstitions, bits of misinformation, the conventional wisdom, and unexamined assumptions that we retain because "everybody knows" or because we just picked up the memes somehow and never took a close look. A lot of this is laziness; but at the core of most myths is something that makes it more comfortable to believe than otherwise: the cultural equivalent of an individual's defense mechanisms.

There may be some overlap between models and myths—for all thinking involves some use of models—but it will prove handy to keep both conceptual tools for identifying and loosening up rusty mental components.

One might see myths/Mythology as a continuum of beliefs and assumptions that humans create to give meaning to our collective life, ranging from the most habitual sorts of bias to the most complex world-views and mystery religions. Myths tend to support and preserve the welfare of some portion of society without considering the whole of society, of humanity, of knowledge, of the biosphere, whereas Mythology attempts to explain, include, and relate to the whole created universe.

 Also from the category of myths let us strain the '*ifs*' and '*as ifs*'. Fiction, dramatic representations, fantasy, speculative thinking, and the scientific hypothesis yet to be tested are *ifs* and *as ifs* that depend on a willing and reversible sort of belief. While reading a gripping story or watching a movie I may choose to identify with one or more characters and to believe for the moment that real events are occurring in the novel, onstage, or on film. Samuel Coleridge called this temporary commitment to a drama or fiction "the willing suspension of disbelief." Or it may be that a scientist provisionally accepts a scientific hypothesis in order to test it, and speculative thinkers may conduct a 'thought experiment' without any physical apparatus.

Possibly some *if* or *as if* may be embraced with more conviction than warranted. For instance, viewers may mistake a fictional program such as Orson Welles' "War of the Worlds" for a factual presentation. Or they may assume that because half the dramas on television are about crime, that their own streets are proportionally as dangerous. Some person in an underdeveloped country, exposed to a lurid drama from Hollywood, may assume that this drama shows how most Americans act. Such misunderstandings may give rise to myths.

In the case of scientists or speculative thinkers, they may defend their ideas with less than scholarly detachment, but there are built-in, self-corrective mechanisms in science and in the public forum as well, whereas social myths often persist outside of organized institutions and formal discourse.

Myths and Ego Defense Mechanisms

The best defense is a good offense.
Carl von Clausewitz, Prussian military strategist, 1780-1831

Because of the family resemblance between social myths and those ego defense mechanisms first outlined by Sigmund Freud as the strategies by which individuals protect their tender sense of self and cope with anxiety-producing situations, let us review the best-known ego defense mechanisms. These unconscious processes are not necessarily neurotic, some of them appear to be beneficial, and we all resort to them more or less. As the spiritual teacher Gurdjieff noted, humans come equipped with buffers to ward off the more painful truths.

The master ego defense is *repression*—simply pushing out of consciousness any painful or unpleasant ideas, forbidden desires, or embarrassing impulses. It does make a difference whether one at some level accepts or acknowledges the idea or emotion or impulse before pushing it out of consciousness. For instance, one may 'say' to oneself, "That is certainly a good-looking person *but* I am already married and won't think about acting on my attraction to him/her."

On the other hand, one may have an automatic defense mechanism that works on the presumption that "I am the sort of person who is never drawn to sinful activities that are forbidden by the Bible." However, the unacknowledged emotions and impulses are still there, they have registered, and they are attempting to force their way out of the darkness into consciousness and resolution. Sometimes they take strange pathways to become manifest. The person must use a good bit of his or her psychic energy just to keep the repressed material from surfacing. This requires still other defense mechanisms.

Science-fiction writer Douglas Adams ironically imagined a technical device to replace good old-fashioned repression in *The Restaurant at the End of the Universe:*

> He felt much more comfortable with the sunglasses on. They were a double pair of Joo Janta 200 Super-Chromatic Peril Sensitive Sunglasses, which had been specially designed to help people develop a relaxed attitude to danger. At the first hint of trouble they turn totally black and thus prevent you from seeing anything that might alarm you.

But, of course, we do not need any such invention to ignore, avoid, and distance ourselves from that which alarms or simply disturbs us. Our own defense mechanisms work quite well, thank you. In addition, avoidance can become an institution or an ideology, as in the attitude of privatism: "Do your own thing" or "What's that got to do with me?"

We could make an analogy between repression and the experience many of us have had in our slumbers, when some external noise or internal sensation threatens to wake us. Instead, something weaves the noise or sensation into our dreams in an attempt to keep us asleep. The sounds of thunder or barking dogs become a part of the nightly fantasy, perhaps turning into a battle scene or hunt. A woman with a stomachache dreams she is giving birth, or the sleeper with a full bladder wanders in his dream trying to find a bathroom. Eventually one may have to wake up and deal with the situation.

Denial is one very common way to deal with repressed feelings. It is the refusal even to admit the existence of what is repressed. This mechanism has a lot of consequences for the individual and for society. As they say, "Denial is not just a river in Africa."

When confronted with a threatening loss, when the doctor gives a grave prognosis, or the lover suddenly walks out, one's initial response is usually some form of denial: "This isn't happening. This *can't* be happening to me. It's a bad dream." Elizabeth Kubler-Ross identified denial as the first of five stages of grief, stages that everyone must work through when faced with

a great loss such as the death of someone we love. (The stages are Denial, Anger, Bargaining, Depression, and Acceptance.)

However, some people use the denial mechanism so regularly that it becomes a habit, and one that can harm their own health. According to cardiologists, ignoring or denying chest pain is a common behavior among heart disease victims. Researchers at a Yale clinic tested several hundred male students for their self-perceptions of anxiety and found three groups. The first group correctly identified themselves as having a low anxiety level. The second correctly identified themselves as having a high anxiety level. The third group said that they were not anxious but they were defensive about it—the researchers called them "repressers." Those who repressed their anxieties showed extreme physiological responses, often higher than those men who correctly perceived themselves as feeling high levels of anxiety.

The Yale researchers point out that the brain is capable of tricking itself, and that this self-deception appears to underlie a number of stress-related disorders such as asthma, heart disease, and 'essential' hypertension (high blood pressure without a demonstrated physical cause), a disorder that may afflict as many as one-quarter of American adults:

> By constantly denying feelings of anxiety, frustration, or anger, people may be gradually conditioned to raise their blood pressure in stressful situations. Messages from the arteries calling for lowered pressure would then be short-circuited in the cortex and ignored, until high blood pressure becomes habitual.

In addition to the denial involved in tuning out warnings from one's own body, the denial of basic emotions is in some research associated with the onset of cancer and arthritis. We see denial in many areas, every day. A marriage is in trouble and one of the partners denies that there are any problems. A child is depressed or failing in school and the parents deny it. Collectively, the larger community denies the existence of poverty, or racial discrimination, or family violence. (A worker at a battered-women's shelter reports that the question most commonly asked by the public is: what about battered men?) We not only ignore the dirt but we sweep it under the rug. What dirt? There's no dirt here. I'm a great housekeeper.

One example of denial is the 'quiet epidemic' of child sexual abuse, which is probably the most under-reported crime in this country. A middle-aged Oklahoma couple raised hundreds of thousands of dollars for disadvantaged youths in their state, but found out that raising funds for a home for sexually abused female children and teenagers was different. "You can go speak before the Lions Club or Rotary for some things, and they'll be glad to help you. But try to talk about sexual abuse of children, and *they don't want to hear it."* Perhaps this issue struck too close to home in a state where an estimated one out of three women experienced sexual abuse before the age of majority, with 85 percent of abuses committed by fathers, stepfathers, or family friends.

Sometimes we follow leaders who tell us that there are no problems: it's morning in America, and we can help save our country by going out shopping.

Humans may deny events or situations that have occurred in the past because they don't want to admit that they were fooled. As Carl Sagan said:

> One of the saddest lessons of history is this: If we've been bamboozled long enough, we tend to reject any evidence of the bamboozle. We're no longer interested in finding out the truth. The bamboozle has captivated us. It is simply too painful to acknowledge—even to ourselves—that we've been so credulous.

Reaction Formation is another way of dealing with repressed emotions. Here the impulse or feeling we do not want to acknowledge is converted into its conscious opposite. Thus the woman with many hidden resentments acts super-sweet, or the man unsure of his masculinity behaves in an overly macho manner, or the person with strong lustful inclinations becomes a puritan. People whose general behavior does not seem to jibe with their inner feelings—showing an inconsistency that may be expressed in body language—appear to be 'phony.' One can indeed transcend negative emotions and risky impulses, but one has to acknowledge them first, if only to one's self.

Projection: A different strategy for dealing with repressed feelings is to project them onto somebody else. Folks generally find it much easier to recognize their own undesirable characteristics in other people. Person A can clearly see the mote in B's eye; and many stones are cast by those who refuse to admit to their own imperfections. Projection is especially common during times of social and economic stress. It is the defense mechanism of choice for people with certain personality structures, described by T.W. Adorno and others in *The Authoritarian Personality*. These people tend to respect power. They idealize the in-group to which they belong and identify strongly with it. Authoritarian personalities have prejudices toward many sorts of people. They assign weakness, impulses, and deviant emotions to this large out-group, while disavowing such imperfections in themselves and their in-group, as psychologist Hans Toch describes:

> With varying degrees of self-righteousness and inflexibility, persons bred by conventionality and status-consciousness see society as a neatly ordered hierarchy, in which they and their in-group occupy a select place. To the extent to which this preferential position is endangered, there is a presumption of foul play.

While the authoritarian personality often sees evil forces at work, actual conspiracy beliefs tend to arise when "the urgency of the need to preserve one's self-image must be combined with the bitterness of experienced failure." Nazism grew out of an atmosphere of national defeat and economic insecurity. McCarthyism came at a time when setbacks in the Cold War were capped by a stalemate in the Korean Police Action, and when small businessmen were being crowded out of an increasingly centralized economy.

A related mechanism is ***displacement,*** or "Kick the Cat." To avoid dealing with one's own anxieties and perceived deficiencies, one takes it out on the nearest object or person. Boss yells at secretary, who snaps at husband, who blows up at child, who pushes down younger sibling, who kicks the cat (which later gets back at everybody by having an 'accident' in the middle of the carpet). The abuse may be either verbal or physical, and may be further displaced to parties not even present. For instance, a driver takes the wrong exit and upon realizing his mistake he begins to rail against women drivers, blacks, elderly people who drive too slowly, and so on. The 'cat' kicked here is a purely mental scapegoat, but for those who have poor control of their hostile impulses, the same mechanism could lead to barroom brawling, wife beating, or reckless driving.

Other displacements are more benign. Some 'take out their aggressions' while they chop wood, scrub the floor, throw darts at the dartboard, or work out at the gym. Emotions and impulses other than anger and aggression may be transferred to a new object, so that feelings of attraction to a remote or forbidden person may lend energy to one's sexual relationship with a

morally-sanctioned partner; or old disappointments and grief, repressed for years, arise to the surface as one cries at a 'tear-jerker' film.

It is easy to see how *scapegoats* are created either by projection or by displacement. Those who are prone to project their own disavowed traits or desires onto others—whether the projectors are gossips, bigots, witch-hunters, or just generally suspicious and punitive types—usually verbalize their reasons to mistrust, persecute, or punish the other person or group. They may set up a complete intellectual system or ideology to justify this. In displacement, on the other hand, the scapegoat appears to be merely a handy victim, perhaps sanctioned by local custom although not by society's professed principles. It is the difference between the Ku Klux Klan and middle-class adolescents who bash homeless men sleeping in the park.

Scapegoats may be ideas or objects, as well as people and creatures—anything you kick or cuss out or blame for a variety of evils.

A more socially constructive and often highly beneficial substitution occurs with the mechanism of *sublimation.* When forbidden sexual or aggressive impulses or other repressed feelings become channeled into socially acceptable activities, they can provide motive power for great works of art, scientific achievements, and philosophical insights. Much of the ordinary but necessary work of the world proceeds from the same energy source. Civilization itself is carried upon millions of daily sublimations, as people use stored-up impulsive energy to 'throw themselves into their work' or their leisure.

Civilization, like any culture no matter how technologically primitive, is based on the repression of many of our impulses. However, under the conditions of modern civilized life, much more is expected of us, under a wider variety of circumstances. Indeed, many thinkers say that too much is expected of modern humans; that we have come too far too fast from the natural biological animals that we were and are. Sigmund Freud's title says it all: *Civilization and Its Discontents*.

Be that as it may, the process of sublimation often seems to be incomplete, or contaminated with other ego defense mechanisms. For instance, many people are not so much sublimating sexual energy through their work as they are putting in their time and waiting for the paycheck. Only sometimes does an artist appear who can use the energy generated by the pressure of repressed emotions to achieve a creative and liberating release for the self and for the audience as well.

When sublimation is expected and also socially enforced, the process will often be distorted, as during periods in history when many healthy adults were forced into lifetime celibacy because families picked one child to be a nun or priest. An employer's expectation that his employee be totally dedicated to the company and give "150%" to his work is another kind of enforcement. Sublimation works better by free choice. Not everyone is ready, at all times, to convert repressed emotions into high art, great insights, selfless work, or worship. To be celibate, at certain times or always, of one's own choice is one thing; to be required to take a vow in youth for the rest of one's life is quite another. Becoming absorbed in one's chosen vocation is also different from dedicating one's life to tasks that someone else wants done, in order to survive economically.

Again, one may be the sort of person who is loving and forgiving on most occasions; but the expectation that one should always be a selfless saint (perhaps because one is a woman, or an idealist, or a man of the cloth) is an intolerable straitjacket.

At best, however, sublimation is responsible for most of what we value about our culture. It is obvious, therefore, that ego defense mechanisms are not necessarily neurotic—unless we regard the whole of civilization as neurotic (and there are some who do).

Suppression, or the conscious and often temporary decision not to think about something of emotional import, can be useful and healthy. For instance, suppose a couple starts to argue at the dinner table but then agrees to postpone the argument until a later time in order to spare other family members and their own digestive systems. In my own case, I deliberately try not to think about any sort of problem after, say, eight o'clock at night, knowing that morning energy after a good night's rest is much more likely to work out a constructive solution.

To continue with our lengthy list of human ego defenses, there is the numbness that occurs before grief, called *emotional insulation*. In its season, this insulation may protect one from an overwhelming and disintegrating sense of loss. On a lesser scale, something similar to this occurs when people claim 'donor fatigue' after a series of disasters or tragedies call for their help.

The results of *overcompensation* are often admired. Here an individual converts a minus to a plus. For instance, a person who seemed to have a weak constitution or who suffered a serious illness such as polio in childhood later works so hard to overcome physical handicaps that he or she becomes a world-class athlete. Or, as the ads illustrate, "I was a 97-pound weakling" who followed some physical regimen and later beat up the bully and got the girl. Or, the not particularly bright child studies extra hard and becomes class valedictorian.

Using the mechanism of *compensation*, the person does not strive so hard to overcome barriers and handicaps, but picks a different, achievable area in which to excel and make up for his inferiorities.

Rationalization is a very common defense mechanism, by which one protects the ego against awareness of anti-social motives by substituting socially acceptable reasons for what one does. ("I said those things not because I was angry but because she needed to hear the truth.")

One variety of rationalization is the *Sour Grapes* phenomenon, named after Aesop's fable about the fox who could not reach a bunch of juicy grapes. After the loss of some desired end, one scorns and belittles the lost objective—it wasn't much good, anyway. Another variety, *Sweet Lemons*, finds a silver lining in every possible cloud. ("That month I spent in traction in the hospital gave me a chance to catch up on my reading.")

Both Sour Grapes and Sweet Lemons serve to protect folks from feeling depressed and discouraged. As the saying goes, "When life hands you a lemon, make lemonade!" However, it is a different matter when Sweet Lemons becomes such a habit that the syrupy person finds a silver lining in all of *your* clouds, too, thus discounting what you consider to be real difficulties. No matter what happens—to other people or the world in general—Sweet Lemons looks on the bright side. She may also fail to work on resolving her own problems.

One often sees this mechanism of rationalization manipulated in the public sphere, for example when leaders say they support dictators because they are "anti-Communist" or "anti-terrorist;" or when they invade countries in order to bring them freedom, rather than for geopolitical reasons. Gil Bailie says

> There have been periods of history in which episodes of terrible violence occurred but for which the word violence was never used….Violence is shrouded in justifying myths that lend it moral

legitimacy…The people who burned witches at the stake never for one moment thought of their act as violence; rather they thought of is as an act of divinely mandated righteousness. The same can be said of most of the violence we humans have ever committed.

One unconscious reaction by which an individual attempts to satisfy his emotional needs is *regression* or returning to the earlier behavior and gratifications of childhood or infancy. I watched two men with foundering marriages as they quit their jobs and moved together to a cabin in the countryside to 'live off the land.' Except for a small, scraggly vegetable garden, they did little to provide for survival needs, spending most of their time at the swimming hole and smoking pot at the campfire. Except for the smoking, they appeared to be reverting to eleven-year-old Boy Scouts. Selling silverware and other possessions of their estranged wives supported them through summer, after which the idyll ended in a return to the 'rat race.'

Narcissism is an excessive degree of self-admiration and self-absorption which, say the psychologists, covers up feelings of inferiority. According to Christopher Lasch in *The Culture of Narcissism,* there's a lot of it going around. Lasch says we live in a period of general demoralization in Western culture and of "narcissistic anguish" in contemporary America. In a period of transition between ruling paradigms, individuals are more likely to feel the exhaustion of the old traditions than to envision the new. Lasch was not impressed with many cultural changes of the sixties and seventies:

> Strategies of narcissistic survival now present themselves as emancipation from the repressive conditions of the past, thus giving rise to a "cultural revolution" that reproduces the worst features of the collapsing civilization it claims to criticize.

Dependent on governmental, corporate, and other bureaucracies, adrift from moral certainties, and worried about social problems they have given up trying to understand or solve, many live for the moment and for the self. Lasch says they are aided by media which "give substance to and thus intensify narcissistic dreams of fame and glory [making] it more and more difficult for [the common man] to accept the banality of everyday existence."

The so-called "Me-Generation" of the 1970s expressed narcissistic traits insofar as some regarded themselves as special above all others in past history; or as they dramatized their individual personalities, amours, and constant changes of philosophical-spiritual orientation; or as their main preoccupation became diet, body/mind therapies, and fitness.

A more traditional narcissism was evident in Ismelda Marcos with her thousands of shoes, in perpetual partygoer Paris Hilton, and many overpaid, over-publicized, immature entertainers. Fictional narcissists include Emma Bovary and Dorian Gray, while around us are many who are "full of themselves"—perhaps shallow, vain, and pompous, yet depressed and anxious underneath the façade.

Although there are yet many more ego defenses which ingenious humanity has devised to protect our tender self-esteem, we will only mention two more. With *identification*, the individual seems to take on the admirable qualities of other persons, or of institutions or groups to which the person belongs. Early in life we tend to go through a period of strong identification with the parent of the same sex; and then with older siblings of the same sex, or with children who are slightly older or charismatic; then in early adolescence with an adult model whether teacher, neighborhood leader, or celebrity. In other words, identification is how we role model.

However, it is when such identification is carried into adulthood, not so much for modeling but for clothing one's feelings of inferiority, for shining in reflected glory, that it indicates one still lacks an identity of one's own. In some cases a person identifies so strongly with his club or group that his membership seems to define him. One example, whose name is famous although he is not, was Lt. Nicholas Chauvin, a soldier so devoted to Napoleon Bonaparte and to the glorification of his country that we borrowed his name to define any unreasoning attachment to one's group, or 'chauvinism.'

The last ego defense mechanism to consider here, and one of my personal favorites, is *fantasy*. With daydreaming or with vicarious participation in ready-made fictions, fantasy allows us to modify external reality according to our wishful thinking, and thus enjoy successes that elude us in actuality. We may enjoy the adventure right along with Harrison Ford; then again, we may make up our own, as did Thurber's character Walter Mitty. We might simply base our theme on a scene in which the Publisher's Clearinghouse team hands us our ten million dollars and we go on from there.

Some folks are pretty hard on fantasy. How can civilization go forward (they say) if dreamers are gazing out the window when we are supposed to be working? Practical people do not appreciate daydreaming, and even some spiritual teachers say, "Be here now." It is true that fantasy can become a substitute for action, and it may accompany denial, projection, narcissism, or other unhealthy habits. On the other hand, fantasy also has many valuable functions. In childhood, fantasy is an essential part of the way we learn. We try on adult roles for size, visualize unknown places such as the jungle or space station, or practice our emotions and new concepts. Fantasy of the woolgathering kind often gives rise to fantasy of the kinds that add to our collective life, such as art, adventure, Mythology, scientific speculation, and other artifacts of the imagination.

Fantasy may be an acceptable way to discharge emotions such as anger, as one visualizes one's adversary chased by a bear, or as one delivers the perfect rejoinder some hours after the encounter. Both psychology and ethics are divided about whether or under what circumstances a fantasy, fiction, or drama may purge one of socially unacceptable emotions; or when, on the other hand, the fantasies and fictions about lust or aggression or revenge will build upon themselves and spur one on to do something it were better not to do. The majority of psychiatrists say that watching violent television makes children more aggressive, although others claim that except for children already troubled, the fictional violence does no harm and may even provide a safe outlet.

Such disputes often go back to Aristotle's theory about how a tragic drama provides a "catharsis" for its audience. However, Aristotle based his theory on dramas that were seen about once a year, that dealt with the relation between gods and men—dramas that approached sacred ritual—not car chases and shoot-'em-ups, or melodramas designed to sell soap, that go on hour after hour, every day. It is a very scant possibility that poorly conceived, sensational dramas provide a catharsis for people who are unfamiliar with any other kind. It's an even barer possibility that such dramas can provide a healthy release for children.

In terms of the private fantasy, one may cite the statement by Jesus that if you lust after a woman in your heart, you have already committed adultery with her. This resonates with the beliefs of psychic people that thought-forms have a reality of their own, and with the experience of most of us that whatever you think about a lot, you are more prone to do. A flash of anger, a fleeting attraction, or a moment of envy is one thing, but choosing to nurse your impulse or emotion into an obsession is another.

Various ones of us draw the line at different places between 'OK fantasy' and 'not-OK fantasy'—a matter of individual capacity and psychology, of aesthetics and religious interpretations. For example, when should one worry, if at all, about the junior high boy who fills the margins of his notebooks with pictures of violence and monsters?

However, it is our public fantasies that can become most dangerous, backed up as they are by all our collective might and technological skills, turning desires and delusions into reality. While the child uses 'make-believe' to grow his imagination, the artist designs her next work, and the commuter mentally vacations from his dull job, it is the fantasizing generals and premiers and presidents who turn their dreams into death and destruction. Other dangerous fantasies come from scientists who are not even mad but only fanatically eager to do anything that can possibly be done, and from those producers of entertainment who structure our public fantasy life with cardboard characters and violent action for commercial gain. Exterminist fantasies demonstrate the pathological dimensions of this defense mechanism.

Before exploring some of the ways in which ego defense mechanisms propagate social myths, let us summarize this chapter. Myths, unlike Mythology, often serve to protect some particular group in society from threats to their self-esteem and security. Social myths resemble individual ego defense mechanisms such as *repression*, the master defense mechanism by which we ignore and forget anything that we do not want to deal with. Other defense mechanisms are *denial, reaction formation* (acting the opposite of our repressed feeling), *projection, displacement, finding scapegoats, sublimation, emotional insulation, compensation, overcompensation, rationalization, regression, narcissism, identification,* and *fantasy*.

While these defense mechanisms appear to be universal and apparently are necessary to our mental health, overusing them lands us in never-never land, out of touch with out own feelings, constantly striving, and afraid to face ourselves. (The foregoing is less true of sublimation and compensation.) In the public and political arena, leaders may deliberately manipulate our tendencies to use defense mechanisms rather than face difficult problems.

Chapter 19: Deep Assumptions

In all affairs it's a healthy thing to hang a question mark on the things you have long taken for granted.

Bertrand Russell, English philosopher

Underlying many modern myths are a number of unconscious assumptions that go back centuries or millennia. The ***Neolithic Illusion*** dates back ten thousand years or so, to the beginnings of human agriculture and the population growth that agriculture made possible. This idea that no matter how many of us there are, and how toxic our technologies, the Earth will nourish us and absorb our blows, is a ten-thousand-year-old mindset that we need to change ASAP. While the Neolithic Illusion is a very ancient habit that has lately become extremely dangerous, the long dependence on fossil fuels and the ingrained ideas of patriarchy and authoritarian rule have also given rise to a number of associated myths.

Ervin Laszlo devised the term "The Neolithic Illusion" to describe an attitude we humans have maintained for millennia, namely, that we live in an open ecological system. Back in the days when a few million people lived on Earth, resources seemed to be infinite and there was no problem with the garbage, bones, and broken pots of clay that we had to cast away. Now there are a thousand times as many people, our competing needs include many scarce resources and finite arable land and water sources, and we throw away millions of tons of refuse with chemical toxins and radioactive compounds that kill ocean life and poison our underground sources of water. It is just beginning to dawn on most people that we cannot continue very much longer with business as usual.

Something about this situation reminds me of the squirrel monkey that was once part of our household. Cicero's quick powers of observation attested to his intelligence (he was always trying to groom away extraneous things such as eyeglasses and earrings, or the mole on a visitor's chin), but one thing Cicero could not learn was toilet training. Even in his own cage he was quite likely to dirty his food and water dishes. His ancestors for many millions of years had lived in trees, and when you live in trees, you do not need to worry about what happens down below.

Cicero's innocence excused his careless ways; but what is the excuse for modern humans, whose powers of reasoning are supposed to distinguish us from all other creatures? What is our excuse for fouling our environment? There are some long-held, very deep assumptions here.

Laszlo says humans were able to maintain the Neolithic Illusion as long as there were unexploited resources and unfilled sinks in the immediate environment. The economic payoffs from modern technology and from colonization of the American West, Latin America, and Africa helped prolong the belief "that our environment is, if not an infinite source of resources and an infinite sink of wastes, at least a very large source and a very large sink" Laszlo gives a long list of obsolete beliefs that reflect the Neolithic Illusion, such as the following:

- Science can solve all problems and reveal all that can be known about humanity and the world.
- The wealth and power of one's own country must be assured no matter what this means for other peoples, for in this world it is not only each person for himself, but each country for itself.
- There are almost inexhaustible riches in the Earth if we only dare to use our technologies to extract them and put them on the market.

Here is an example of Neolithic Illusions. A century ago in 1902, Lord Kelvin, an eminent British scientist, visited the United States. He and the brilliant inventor Nikola Tesla agreed that nations should develop wind and solar power, while conserving fossil fuels and wood. Together Kelvin and Tesla envisioned rooftop windmills that could run elevators, pump water, and both heat and cool houses. However, Thomas Edison disagreed with them. Edison believed that there would be no shortages for "more than 50,000 years," arguing that the forests of South America alone would provide fuel for that length of time.

Today one can still read similar remarks in letters to editors, such as that energy sources will not run out for 500 years or that we poor puny humans have little effect on the planet. The writers cannot imagine that human numbers and technologies have turned us into a force of nature. Their assumptions feed into the myths of anti-environmentalism.. Wishful thinking, blind optimism, and denial are all part of an ideology that still supports the Neolithic Illusion.

For a different and sobering perspective, read Alan Weisman's *The World Without Us.* It describes what would happen if a virus or the Rapture suddenly removed all the humans from Earth. As cities crumbled away, our most lasting gifts to the planet would be a "redesigned atmosphere;" a billion pounds of almost indestructible plastics—many of it as particles in ocean waters or part of floating islands of trash; mountains of old tires; some bronze statues; nuclear waste and other inorganic poisons, with man-made molecules such as plutonium, dioxins, and toxic PFOs and PFOAs; and radio waves sending "Gilligan's Island" into eternity.

Foresight, Anyone?

History teaches us that men and nations behave wisely once they have exhausted all other alternatives.
Abba Eban, Israeli scholar and diplomat, 1915-2002

One of the toughest lessons all kids must learn is that actions have consequences. Tomorrow actually exists, and what you do today will make a difference when tomorrow rolls around. However, the American consumer culture is not giving anybody that message. Advertisers and political leaders are passing out a different meme like lollipops: fly today, pay tomorrow…or let your grandkids pay. This may be the first culture in the history of the world where all socioeconomic classes are encouraged to act like some decadent aristocracy or like the upper crust in a gilded age. Of course, a lot of us are unable to indulge in so much conspicuous consumption even if we wanted to, but there are still plenty of takers.

It is a contagious meme for the rest of the world, too, China and Mexico and wherever else that new middle classes gather with their cell phones, scorning the majority of the population—those peasants who never had an opportunity to live it up like Americans. Together we are one big, noisy party on the sinking Titanic (ignore all those raggedy steerage passengers putting a damper on the fun).

So what about that day of reckoning? What about that global warming? What about that oil running out? All those nations armed to their nuclear teeth? The first reason that most of us are not thinking about survival issues is a failure of imagination from which people have always suffered. While the ability to see ahead is one of the defining characteristics of humans as compared with other animals, the capacity is not yet very well developed and it is unevenly distributed. Some cultures actively cultivate foresight, others do not. Ours, currently, does not.

Another reason for short-sightedness is that the nature of mass media is to bring us today's news—not that old, stale news from yesterday, although knowledge of history might prevent us from making the same mistake again—and certainly not the news of tomorrow. Media news is information from an ever-present now, today forever. But information is not knowledge, and knowledge is not wisdom.

A third reason is the pragmatic attitude that all one needs is common sense, and "we'll cross that bridge when we come to it." Laszlo says that this attitude comes from stable economic times in the 1950s and 1960s when expanding markets and apparently plentiful resources made almost any strategy successful. But in later decades economic growth slowed and problems appeared in the form of disasters such as Chernobyl, Bhopal, and oil spills, and problems such as acid rain and the hole in the ozone. Now global warming overshadows even these.

A number of people have a lot of dollars (or euros, or yen) invested in polluting and global warming technologies; and it is to their short-term advantage to keep doing what they are doing and to convince the rest of us that it is okay. They can buy advertising, politicians, radio stations, television networks, newspaper chains, and think tanks to present their point of view to the public. It is to their advantage to discredit scientists who point out what is happening, and activists who may act on the information.

Is Technology Neutral? Related to the Neolithic illusion is the widespread assumption that technology is neutral and it all depends on what people do with it. ("Guns don't kill people, people kill people.") This notion allows the development of any technology that is profitable for someone to develop, which often appears to promise benefits to humanity or some portion of it. But Jerry Mander refutes that idea of neutrality, by listing some of the preconditions and consequences of our current technologies:

> If you accept the existence of automobiles, you also accept the existence of roads laid upon the landscape, oil to run the cars, and huge institutions to find the oil, pump it and distribute it. In addition you accept a sped-up style of life and the movement of humans through the terrain at speeds that make it impossible to pay attention to whatever is growing there.
> If you accept nuclear power plants, you also accept a techno-scientific-industrial-military elite. The wastes, in turn, determine that future societies will have to maintain a technological capacity to deal with the problem, and the military capability to protect the wastes.
> If you accept mass production, you accept that a small number of people will supervise the daily existence of a much larger number of people [and that] the workers' behavior becomes subject to the machine.

Suppose we assumed the responsibility to look at every one of our technologies—current, developing, and proposed—to see the implications of the way it will be used, by whom, and to what ends. Then we would be truly technologically literate.

Another common assumption is that any law or procedure once set up, or any technology once invented must continue. Certain technologies are inevitable, and "What's done is done." Nevertheless, we actually undo things all the time. We pass new laws that supersede the old, and sometimes they contain 'sunset provisions' that the law will last only a specified number of years. We have banned some technological innovations or they have fallen into disuse because they were destructive. Francis Fukuyama says "The idea that it is impossible to stop or control the advance of technology is simply wrong….we in fact control all sorts of technologies and

types of scientific research." He gives the examples of restrictions on new biological warfare agents or the banning of human experimentation without informed consent.

Various levels of legal control have been imposed on tobacco, saccharin, certain uses of polycholorinated biphenyls, aerosols, fluoroscopes and X-rays, among other substances and procedures, notes Mander. Since he wrote, DDT, thalidomide, and many others have joined the list. Medical procedures may be widely used but later fall out of favor, or the FDA (and similar agencies abroad) may actually prohibit them. Just in my lifetime, tonsillectomies have gone in and out of style several times. A number of drugs have been abandoned or prohibited, as dangerous side-effects became evident.

Bill McKibben, in his critique of germline genetic engineering, says that GGE advocates are bluffing when they claim certain technologies are inevitable—likely, yes, but not inevitable. "Society at the moment has a primitive and superstitious belief that we must accept new technologies, that they are somehow more powerful than we are." Yet he points to the Amish, a group he calls technologically sophisticated because they select which innovations they will use, thinking ahead about the consequences.

A group of friends and I once held a brainstorming session to select inventions or social innovations we felt were ripe for un-doing. Besides abandoning television, an action Jerry Mander suggests by his title *Four Arguments for the Elimination of Television*, some of our individual choices included the internal combustion engine (the electric car using wind-produced electricity could replace it without the pollution), nuclear power, phenoxy herbicides such as 2,4,5-T and 2,4-D, corporate personhood, handguns, and various food additives and drugs such as aspartame, monosodium glutamate, and Ritalin. You might draw up a different or longer list.

The idea of deliberately disinventing problematic technologies and social innovations may sound too drastic and 'utopian' to some. It directly threatens individuals whose jobs or profits are tied to those problematic technologies. Many people assume we have no choice but our current set-up, no choice but technologies that cause climate change, no choice but waging wars. But we do have choices, and we need to exercise them.

Fossil Fuel Assumptions: Humans have used fossil fuels for a long time, with the use of coal as far back as the Bronze Age in China. The Industrial Revolution that began in 18th century Britain was based on the availability of coal to power steam engines. By 1905 the United States was the world's largest producer of coal. Now petroleum is what makes the world go round (and fuels the wars). Ways of living give rise to related ideas. For instance, our dependence on fossil fuels may itself be a sort of grand model or paradigm with a number of associated ideas, assumptions, or implications such as these:

- *We must mine the Earth for our sustenance.*
- *Combustion of matter is the natural source of energy for human use*. Our ancestors tamed fire about a million years ago. Although many pre-civilized people appear to have been sun-worshippers, only very recently did most people realize consciously that all life on earth is dependent on solar radiation.
- *We require large amounts of material substances* not only to maintain the style of living to which we have become accustomed, but *to survive. Competition and conflict are inevitable* given the fact that those necessary material substances are scarce and unevenly distributed.

- *Materialism* is a consistent philosophy for a civilization based on the use of very dead matter (remember that Catton described us as 'detrivores.')

Implications and consequences of these assumptions affect our survival and development as a species. They are intimately related to planetary destruction and wars. (One unintended side effect of coal mining is that in Britain and the United States, large numbers of men who worked at this dangerous job became the core of radical political-economic movements.)

Patriarchy Assumptions: Many subsidiary ideas are associated with the 3,000-year-old world tradition of patriarchy, which Fritjof Capra describes in *The Turning Point*:

> Western civilization and its precursors, as well as most other cultures, have been based on philosophical, social and political systems in which men—by force, direct pressure, or through ritual, tradition, law and language, customs, etiquette, education, and the division of labor—determine what part women shall or shall not play, and in which the female is everywhere subsumed under the male.

A second aspect of patriarchy is that male-dominated societies are led by authoritarian leaders and organized as hierarchies. Anthropologists seldom see the excessive degree of hierarchy in contemporary tribal populations that we see in modern civilizations. Part of the reason is undoubtedly their smaller size. It is likely that our hunting- gathering ancestors, who lived in quite small groups, were also more egalitarian. Some scholars see the origins of patriarchy in herding societies. By watching animals breed, men came to recognize their own part in the process of reproduction, so they no longer worshipped women for the miracle of childbearing. More generally, men might have transferred the attitudes of life and death control over herd animals to the physically weaker women and children of their own species.

Only recently, in the twentieth century, was patriarchy openly challenged. Some areas of the world such as Africa and the Middle East are still largely patriarchal. As feminist scholars have pointed out, these systems run by powerful males profoundly influenced our basic ideas—our models—of human nature, human society, and God. One can regard patriarchy as a paradigm as well as an actual system of human organization. Again, associated ideas go beyond the relationship of male to female, for instance:

- *Some humans are superior and others are inferior.* Qualities associated with the superior ones are valued; one must discount or reject qualities associated with the inferior ones.
- *There must always be a "boss" and a clear chain of command.*
- *Some humans or human entities are by nature intended to serve others, just as nature intends some to dominate others.*
- *As a woman to her husband, a child to its father, or a servant to its master, is our relationship to God.*

Again, a way of life turns into a paradigm. The assumed superiority/inferiority and dominant/submissive relation of male/female becomes a model for other sorts of relationships: between social classes, between races or ethnic groups; between home country and colonials; between humans and animals; between humans and Earth or God and humans. There is an implicit acceptance of force as well as of hierarchy in the government, not only of men over

women, and fathers over their children, but also of men over men. For instance, military organization is the human equivalent of the baboon troop's chain of command or the chicken's pecking order. Most people implicitly accept hierarchical arrangements in their work lives.

Patriarchy as a paradigm or model expanded along with the modern nation-state and its centralized power since the 17th century. This era was also the beginning of imperial colonies and of widespread slavery. Historically, capitalism, modern nationalism, colonialism, and racism all arose around the same time.

The decline of patriarchy today coincides with the urbanization of western societies, the entrance of women into the paid work force mostly from economic necessity, modern contraceptives, mass education and media, and the increasing mobility of people because of modern transportation and communication systems. Representative democracy is spreading. The patriarchy paradigm is also disappearing, but not quickly or smoothly, either with men and women or with other hierarchical relationships. For instance, the growth of fundamentalism in various religions is a direct reaction to modernity and its greater equality for women.

Do We Just Need More Logic? At this point it is possible that some readers, especially men who identify strongly with logic, reason, and science, are shaking their heads about 'participating consciousness.' "After all," they might say, "poetry, mysticism, and intuition are women's stuff [or sixties stuff]. To fix things, we simply need more logic, more reason, and more science." This 'hair of the dog' approach is an attachment to rationality that has been developing ever since Descartes and Bacon. It has become another deep assumption.

Yes, we critically do need better logic, more scientific literacy, a habit of reason. *But that is not all we need.* So let us look at this from another angle. In early July 2007, people in many lands were shocked to learn that several medical practitioners were part of the failed terror attacks in London and Glasgow. We think of doctors pledged to save lives, not to kill innocent people.

However, Debora MacKenzie (a writer for *New Scientist*) notes that behind the new transnational terrorist attacks are many university-trained professionals. One study of sixty-three persons involved with five major attacks showed that two-thirds of them had been to university, with one-third of them attending universities in the West. The most popular field of study was engineering, the second medicine. Another study of 400 al-Qaida operatives found about 300 of them professionals, most in science and engineering. Osama bin Laden was a civil engineer; his deputy, Ayman al-Zawahiri, practiced as a surgeon; and Ramzi Yousef, leader of the first World Trade Center bombing, had an electrical engineering degree from the UK.

MacKenzie suggests several hypotheses that might account for this unexpected development of terrorist/professionals. One possibility is that a scientific education actually predisposes to terrorism among people with a set of grievances. So argues a leading scholar of Islamic history, Malise Ruthven. According to Ruthven, scientifically trained people may be pulled into fundamentalist movements because they are *less* critical of simplistic religious messages than are people trained in other fields: Ruthven maintains that **"Technical specialization tends to discourage critical thinking."** He says that people who work with scientific principles at the same time they live a pre-scientific mindset experience a kind of "schizophrenia."

MacKenzie proposes an education that goes beyond technique, to include history, philosophy, ethics, and the deeper view of science which in many scientists develops a sense of awe and humility. Both MacKenzie and Ruthven suggest that along with technical skills, people

from less-developed countries need more exposure to the Enlightenment values that historically accompanied modern science-and-technology.

However neither writer acknowledges that to a lesser degree, scientifically-trained people in the developed world share a similar schizophrenia. While western scientists do not often become terrorists, many of them do devise weapons for their governments or environmentally destructive products for their corporations. Even in university departments, some scientists are apologists for those who grant funding for their research. There have been historical instances of significant ethical lapses. Nazi doctors conducted dreadful experiments on human beings and other Western scientists have conducted unethical experiments.

Currently many questions center on how health professionals directly or indirectly assist state terrorism and exploitation. A professor of medicine, Dr. Steven Miles, has written a book about one aspect of this: *Oath Betrayed: Torture, Medical Complicity, and the War on Terror*. He says that about 130 countries practice torture, and between 20% and 50% of the survivors report seeing a health professional directly involved in supervising the torture. Douglas Johnson, executive director of the Center for Victims of Torture in Minneapolis says "In today's world there are more health care professionals involved in the design and structuring of torture than are involved in providing care for survivors." There is an ongoing controversy in the American Psychological Association, which has not so far (2007) passed a ban on psychologist involvement in coercive interrogations.

In addition, Enlightenment values (as embodied, say, in the Declaration of Independence) may not be as widespread as proponents of democracy had once hoped, and they are under attack in the United States from religious fundamentalists and political authoritarians. Many Americans are not concerned about the human rights of people with whom their government is at war, of illegal immigrants, of people accused of crimes, and certain others (the list changes from time to time). A number of scientifically-trained Christian fundamentalists are science teachers who won't teach evolution or pharmacists who won't dispense certain legal prescriptions to women.

It is not only the world's two billion peasants but also most people in the West who actually live a "pre-scientific mindset." For instance, in a poll the great majority of Americans said that they believe in angels. Just because we use technologies does not mean we understand them. Even if someone can program or hack a computer, that does not give him a deep understanding of the principles of biology and astronomy, or awe and humility, or any ethics about scientific or technical applications of science. Thus we are a very long way from a universal scientific mindset—even assuming that such a perspective would be adequate by itself. And I have tried to show that it is not.

Critical thinking is vital, but it is not the whole story.

Part V: Muddles

Chapter 20: Muddles Defined

Well, if I called the wrong number, why did you answer the phone?
James Thurber, American author and cartoonist, 1894-1961

Third in our trio of tools for looking at our own intellects is the muddle, otherwise defined as miscommunication, confusion, disorder, jumble, and mess. The word may sound funny but its manifestations are not. In its most basic form the muddle is just a plain little old misunderstanding between two people (or more), not necessarily a matter for quarrel or hurt feelings, and sometimes not even noticed. It is simply that A does not get the same message that B thought she sent. Such misunderstandings are compounded by all the vagaries of language and by myriads of individual differences.

Various aspects of the act of communication are studied in fields such as general semantics, social psychology, animal behavior, learning theory, cognitive science, cybernetics, and others. One definition resulting from such studies is this: "Communication amounts to achieving a parallel in the structure of the internal meaning responses of both a source and a destination….The degree to which they are less than absolutely identical, element for element, is called *noise.*"

Communication is always less than perfect, for a number of reasons, but muddles contain more than their fair share of noise. People are talking at cross-purposes. They may even be non-verbally communicating at cross purposes. Gestures, body movements or dress are not communicating to B what A intended to say. A recent study indicates that in a casual conversation between a man and a woman, the woman may think she is just being friendly while the man is likely to think that she is flirting with him. Advice columns and whole books are written about what color of suit, and how much cuff to show past your jacket sleeve, and when may a woman wear a necklace or cross her legs, for business success.

When so much hinges on seemingly trivial matters such as cuffs and ties, it is evident that all the differences between cultures, or between genders or age-groups, between socioeconomic classes, ethnic groups, or religious groups, all these differences of experience and language and outlook will make it hard for human beings to get through to other human beings. The noise is deafening.

A shortcut to recognizing some of the current difficulties is the popular joke, which is a form of folk culture that finds fertile soil in misunderstandings between people. You might say that jokes grow out of the noise. They also release some of the individual tensions built up by muddles. However, by exaggerating and stereotyping the participants in common muddles, the joke may promote hostility and prejudice, irritating some people even while it makes others laugh. Undoubtedly the next ten jokes you hear will include some about missed communications and cross-purposes, including classics that hinge on national characteristics and ethnic membership. "Did you hear the one about the Scotsman, the Irishman, and the Turk?"

But muddles are not only a joking matter. Far from it, as muddles can lead to rape, murder, and war, as well as domestic misery and lost opportunities.

A great many muddles occur not so much because of cultural differences but rather because of the natural variability of the human species. We do not look alike and we also have differing temperaments, even from infancy. Some people are shy, some risk-takers; some are energetic, some laid-back; and so on. The problem is that each of us expects others to react as we do. Without some experience, tolerance, and empathy, we just don't know 'where' those other people 'are coming from.'

Not only do we differ in temperament but also in our perceptual abilities. One person is able to hear the high notes, another insists that she sees auras, and a third is relatively impervious to pain. Again, each of us tends to take our own range of perceptual abilities as the norm, and to consider others as abnormal, 'putting it on,' or just plain 'flaky.'

There are muddles that occur in the course of conducting one's own life because of simple ignorance of pertinent facts or perhaps a lack of literacy. A lot of us do not read very well. It does make a difference if maybe half the people we know can hardly read a daily newspaper and do not know where Iran is. It also makes a big difference in their lives if they cannot read the fine print on the contract and then somebody puts them in jail for it. "Ignorance of the law is no excuse," and "Let the buyer beware": those are the rules of the game.

Language Muddles: Multitudes of muddles result from the complexities of the language we use: the many connotations and implications of each word; the changes in a word's meaning over time, in different geographical areas, and in subgroups; and the assumption by some that a word means one thing and one thing only. Such literalism gives rise to a widespread cultural deafness to metaphor and poetry, so that A who is using language metaphorically is misunderstood by B, a practical sort who uses language more literally. B may even declare that A is talking nonsense. Satirist Roy DeLamotte says there is "a sane and sincere majority to whom irony, satire, and even mere analogy are not viable models of communication." Good luck to the teacher and his or her literalist students, who plow through some classic and pass tests on it, while never understanding more than *Masterplots* can offer.

Another sort of muddle arises when one partner in the communication is using language at a more abstract level than the other. The two are not aware that although they are talking about the same general subject, since it is at a different level of abstraction it is not truly the same topic. This one is talking about global economics and that one about the price of lettuce at the neighborhood XYZ. This one is expounding on juvenile delinquency and the other is thinking about her sister's two children. Generally, most people have a low tolerance level for abstract communication and want it brought 'closer to home.' At the same time, simply by using language and numbers, we are already several levels into the abstract and away from our senses.

It may be that most of us are already stretched to the limit from the degree of metaphor and abstraction used in modern societies. Certainly the ability to use abstraction takes some time to develop in childhood, and many people are never very comfortable with levels beyond their childhood learning. Paul Shepard notes that the schedule of language acquisition for each individual divides into the learning of literal meaning in childhood and then the literal-plus-metaphorical in adolescence and adulthood. "Abstract usage [of language] is preceded by ten years or so of vocabulary, cataloging and taxonomy [of animals and parts of the body]. It would be interesting to know how much abstraction people can stand without reference to creature images." Underpinning our models of coherence in every field, no matter how high-tech or far-out, is a childhood spent thinking about bodies and creatures.

Some appear more able than others to retain vivid imagery even when they learn to handle language in more complex ways. Speculative thinkers Tesla and Einstein had an unusual ability to visualize concepts that are several levels of abstraction beyond what most of us understand. As a freshman college student I was privileged to hear a class lecture by Enrico Fermi, the physicist who discovered much of what we know about the atom, yet who was well able to translate his abstruse knowledge for those with little background in physics. It has been said that you truly understand your subject if you can explain it to a six-year- old.

On the other hand, some people use abstraction to cover a fundamental lack of connection with the 'real world' of the senses, using words to replace images rather than to represent them. Then we got the 'gobbledygook' of official language such as the following from Alan Greenspan: "It is a tricky problem to find the particular calibration in timing that would be appropriate to stem the acceleration in risk premiums created by falling incomes without prematurely aborting the decline in the inflation-generated risk premiums."

Language as Authority: Mass literacy is only a few centuries old. Perhaps as a holdover from the time before most people could read, some people ascribe a magical or eternal meaning to certain combinations of words. An individual who picks out an isolated chapter and verse from the Old Testament and regards it as a timeless injunction about what should be done right now, is likely to come into disagreement with other individuals who quote other chapters and verses that seem to contradict the first, or which, at the least have a very different focus. The Bible can be and has been used to justify slavery, capital punishment, dress codes and hair styles, the existence of ancient astronauts, justification for exploiting the earth, spanking your children, and so on. Such muddles result from placing highest authority in human language, a medium notoriously subject to change and local interpretations.

Old proverbs are sometimes used the same way as Bible verses, to prove some point that a person already believes. In the late 1950s and 1960s when the Civil Rights Movement was making headway, more than one letter to the editor of a Southern newspaper quoted the old proverb, "Birds of a feather flock together" to argue for continued segregation. From the observed fact that birds are often seen flying or roosting in a flock of their own kind, these folks moved to the judgment that people should do the same thing—assuming that visible differences in skin color define kinds of people as feathers define bird species. However, one may observe at any bird feeder that birds are not constrained to mingle only with their own kind. I once witnessed a crowd of birds of several species that joined to mob a tree-climbing snake that was threatening their nests.

The tendency to make concepts absolute and to see them as ends rather than as tools of mind is a muddlesome by-product of using our intellectual faculties and a fertile source of fallacies. A fallacy, as we've already discussed, is a mistake in reasoning, or an argument that is logically unsound.

One muddle related to our use of intellect is *superstition*. It is a difficult word to define. As Austrian psychologist Gustav Jahoda says, "The label of 'superstition' merely shows that the user wishes to characterize given beliefs or opinions as false….One man's religion is another man's 'superstition'." In many cases, however, superstition consists of associating cause and effect without any evidence. One can find no scientific tests linking black cats or broken mirrors with bad luck. Part of the problem of setting up such an investigation would be how to define

'bad luck' and how to set the maximum length of time after the cat encounter or mirror-breaking that one could expect misfortunes.

I myself have been known to pick a penny off the sidewalk, hoping for good luck although, if pressed, I do not 'believe' in a cause/effect relationship. The action is really to psych myself up. (And I can use the penny for sales tax.) Yet sometimes fear and hope may intrude quite deeply into the realm of reason, and the credulous may believe it just because someone says it.

Some define superstition by content, including anything they consider 'supernatural,' whether it has to do with the occult, religion, or parapsychology. Yet one could be superstitious about anything, and the concept is better defined not by subject-matter but by the tendency and habit of believing by fear or blind faith instead of evidence. For example, if some person has blind faith in the power of 'Science' to solve all manner of grave problems, including those that are consequences of scientific technology, then he may be said to have a superstitious view of science.

Some muddles appear to arise from lack of a sense of proportion or ***not viewing the whole picture***. Muddled ideologies and fixed beliefs often cause people, groups of people, or whole nations to commit murders or massacres or other acts considered crimes in all cultures. Justifications are often paradoxical: "We had to destroy the town to save it." Or, "We had to burn the witch to save her soul." Or, "We need to shoot a Sasquatch if we find one in order to learn about it and thus protect its species." Even more lethally paradoxical are news reports that the United States "Defense" Department is researching a host of science-fictional weapons that would make warfare even more destructive than it already is, and that could conceivably kill just about everything, not to mention everybody. One wonders who or what would be left to defend.

Muddlers and De-muddlers: While we are personally responsible for making many of our own muddles, it is also true that some entities and institutions find it to their advantage to keep other people in a muddle. Advertising and propaganda are instruments for muddling on the large scale; they work best with people whose critical faculties are asleep. Television is an ideal medium to bypass thinking entirely, tailor-made for advertising and propaganda.

An easy way to exploit and manipulate other people is to give them double messages or distract them. Variations on this theme are brainwashing, the Big Lie, placating the public with bread and circuses (consumerism), news focused on the sensational or dominated by celebrities, burying the truth, large public spectacles (Hitler got a lot of mileage out of that one), scams such as double talk or pigeon drop, or simply saying one thing and doing another—since so many people are too busy or self-absorbed to notice.

Bureaucracy often displays muddles created by rigid categories, rigidly adhered to regardless of circumstances. There is some relationship to ideological thinking.

On the other hand, certain entities and institutions are supposed to prevent muddles, or to de-muddle. Education, religion, media, and psychiatry/psychology are four major institutions or professions that attempt to challenge ignorance and confusion. Education, besides imparting a body of traditional information, proposes to teach people how to think for themselves. Religion aims to help individuals achieve an integrated view of the world and cosmos. The professed goal of media is to keep the populace informed about changing conditions and events of relevance to their lives. Psychiatry and psychology exist to help individuals recognize and then abandon habitual muddles (neuroses) that interfere with their happiness.

All four de-muddling institutions accomplish their task to some degree, but are themselves vulnerable to muddles of various sorts. Power, profit, and ego, disagreements about the best approach or techniques, rigid bureaucracy, and dogmatic ideology can get in the way of educating, spiritual counsel, communication about significant events, and emotional healing. I will leave the examples to you and your own experiences.

We have seen that intellectual confusion often arises whenever humans try to communicate with other humans. Muddles lie in wait in our language and result from fixed ideologies. Misunderstandings also occur, one might say, with the Universe and God. One cannot claim anything definitive about this, of course; it is a matter of hunches and opinions. As Thomas Carlyle said, "I don't pretend to understand the Universe—it's a great deal bigger than I am."

Yet some of us human creatures aspire to know the Universe by measuring it piece by piece. One might suggest to them that the whole is greater than the sum of its parts. Others claim to have a direct line to God. My personal opinion is that anyone who *claims* to be a channel for the Almighty isn't one. I do not deny that some people are more deeply in touch with the wellsprings of heaven, at any given moment, than I am. But I doubt they would brag about it and I strongly doubt they would ask for money or blind obedience from their followers. According to Thomas Merton, "People who look like saints to us are very often not so, and those who do not look like saints very often are."

The mystery of the Universe, approached by indirection and metaphor, love and meditation, using telescopes and mathematics, through sacrament, and with humility, may still be ultimately unknowable but it is not a muddle. However, reduced to a formula or the projection of egos, the mystery fades from view and muddle reigns. In such cases, whatever true believers say, this is what they mean: "My knowledge of the unknowable is better than your knowledge of the unknowable." And like similar statements, it can lead to violence. When one's God is no bigger or better than oneself, with all the local prejudices, then we end up with Holy Wars, Inquisitions, Beirut, the Irish Troubles, al Qaeda, and a televangelist who preaches assassination. As Francis Bacon said, "It were better to have no opinion of God at all, than such an opinion as is unworthy of him."

As for a scientific universe that finds the cosmos to be a series of reflecting mirrors showing nothing but modern, industrial humanity ad infinitum, this appears to be the very same muddle. If we look at Mystery and see only ourselves, we are probably missing something.

Chapter 21: Loops, Quirks, Ploys, and Muddle Soup

Then the bowsprit got mixed with the rudder sometimes.
Lewis Carroll, "The Hunting of the Snark"

Muddle is frequently externalized in events or aggregations of objects that reflect the human confusions behind them. A great deal of human history can be explained only in terms of muddles, from the Persian King Darius's misinterpretation of the Delphic Oracle—when she prophesied that a great empire would be destroyed he assumed that it was the other one—to General George Custer's underestimate, through vanity, of his Siouan opponents. A few decades ago, historians Will and Ariel Durant pointed out that in 3,438 years of recorded history only 268 had seen no wars. That is certainly an indication of muddle.

The study of history, according to Mexican poet Octavio Paz, "is a theater of the fantastic. Defeats become victories, victories defeats. Ghosts win battles. The decrees of crowned philosophers are more despotic and cruel than the caprices of dissolute princes."

To look at two thousand years of Western history—of insane emperors, ten-year-old Popes or two rival Popes, the Children's Crusade, constant heresies and schisms, Columbus's discovery of India in the Caribbean, the French and Indian Wars in which colonials encouraged Indians to scalp other colonials, the slave trade, the aftermath of the French Revolution when the victors guillotined each other, destruction of primeval forests, the Trail of Tears, Prohibition, the Cold War, and countless other manifestations of people misunderstanding each other or misunderstanding the nature of things—is to agree with historian Arnold Toynbee that "There is an incongruity between our increasing human power and our perpetual human inability to carry out our purposes."

Things and More Things: For starters, we have trouble dealing with our own artifacts. Those of us in the rich countries are dependent every day on man-made objects that require specialists not only to design them but to repair them. Some folks "just don't get along with machines" and very few can program their own VCRs. It is a common joke that people who grew up before personal computers ask for technical help from their eight-year-olds. Electronic gadgets come with ever more "bells and whistles" to attract young male consumers, while the middle-aged and older look in vain for simple, easy-to-use, reliable tools that don't require telephoning a tech consultant in India.

Once upon a time, people built their own houses and made most of what was contained in them, with very few 'consumer goods' to clutter up the place. They knew how to feed their horse and mend its harness, so there was no need to master a complex technology just in order to get around. My grandparents still lived in this sort of world, although they had a Model T Ford instead of a horse. Grandpa had built their house; Grandma filled the root-cellar with home-canned vegetables from their large garden. They were much more in control of their subsistence than their descendants are. It could be that many of us are not truly comfortable and secure in our specialized, high-tech world, dependent as we are on instruction booklets, on the honesty and goodwill of manufacturers and repair people, the price of oil and gas, and on power lines that are never supposed to fail.

Another sort of muddle occurs when tools outrun the capability of human beings to operate them, as for instance the F-15 Superfighter jet plane which highly-trained, 'right-stuff' pilots

could barely operate because of the "biological barrier"—the demands of accelerating gravity forces, too much sensory input, life-or-death decisions needing to be made in seconds.

Meanwhile we ordinary mortals may live in what looks like a muddle of material objects although some of us claim to know where everything is. As the possessions accumulate, storage spaces have become smaller. Gone is the old-fashioned attic and basement, besides which, many of us rent apartments, and we move from time to time. Forget the scuba-diving gear and the quilt frame and Junior's 568 plastic dinosaurs and toy trucks; or stay put, come what may; or live in a clutter-muddle. Maybe this *stuff* is why our houses keep getting bigger although families are smaller.

The titans of commerce provide an answer: throw it all away and buy it again—we will make things cheap so that they can be thrown away. However, the throwaway approach leads to another of those externalized muddles—garbage. The sheer volume of *stuff* spills out of our dwelling-places, out of our cities, into the biosphere. Our collective trash builds mountains, washes up on beaches, kills wildlife, and adds its toxic flavor to our water supplies. Or trash is incinerated into the air we breathe. A drama of the garbage muddle a few years ago was a New York City garbage scow that stayed to sea like some legendary "Flying Dutchman," unable to reach port, rejected by one and all.

The inherent muddle in 'throw it away' is that there is no away. We tend to forget that we live on a planet of finite size.

Thee and Me: There are numerous manifestations of muddle on the personal scale. (And no, I don't regard myself as immune from them.) Many muddles seem to reflect a lack of communication between me, myself, and I. The individual's confusion may be a simple one, such as sleeping through the alarm clock, or accidentally locking oneself out of car or home. More seriously, it could involve forgetting one's own professed values and goals in the press of business. An all too common example of muddle is the person who doesn't understand himself very well, is unaware of his unconscious motivations, and who generally drifts through life, buffeted by circumstance and attempting to follow some leader or other, in a tragic waste of human potential.

There is ***multitasking*** and then again there is juggling too many oranges at the same time. According to a little squib in the newspaper, about 70 percent of adult Internet users watch television simultaneously, while 60 percent listen to the radio while online. (No mention is made of people who use the Internet, watch television, listen to the radio, and talk on their cell phone simultaneously.) Obviously these people don't "multitask" *all* of the time. The info bit says about 25 to 30 percent of media time is spent this way. However, either the human brain is getting better and better, or a lot of people are operating on bits and pieces of information out of context.

Here is something I call ***blowing***: Many of us are so articulate, with so much to say about what we're about to do or what should be done, that we never notice that we ourselves are not doing anything about any of it. It's all words. There are several variations on blowing: **A** has had a great insight or religious experience, perhaps with the aid of psychedelics, and proceeds to preach to you or try to convert you. But it often appears that those who spend the most energy trying to get you to believe the way they do spend the least energy in trying to live their own lives by the motive power of such revelations. Meanwhile, **B** tells you in great detail about his life plans and what he has decided is his best course. You are very happy for **B**, but it is just that he never follows his own plans. Talk replaces action

C analyzes a social problem or at least attaches the proper labels to it, and then seems to think that she has accomplished something just by figuring that out. **D** goes a little further, to teach *you* all about it, how to attach the proper ideological labels. There is, shall we say, no exchange of opinions, no dialogue. I have to say here that this last preaching-teaching mantle is more often worn by men.

Hypocrisy is a more deliberate sort of muddle: one pretends to emotions or beliefs that one does not really hold or intend to act upon. Sometimes this is unconscious. Our culture does force a certain degree of insincerity on us in the name of politeness. Then it presses other insincerities on us in the name of acquiring and keeping a job and getting ahead. But anytime we are going in two directions at once, there is potential for the muddle of insincerity.

Unresolved, unconscious conflicts lead to some degree of *neurosis*. Most of us do have some unresolved conflicts. Insofar as we act neurotically, we are not here and now but back there someplace when something else happened that we never quite got worked out. And when you act as though you're someplace else from where you really are; and it isn't very much fun; and you tend to go back there over and over; and when everything you meet looks like that old bad time, why that definitely is a muddle.

At the extreme, in the "*double-bind*" theory of schizophrenia developed by Gregory Bateson, a child who is constantly given contradictory messages by one or both parents becomes muddled to such a painful degree that he or she may escape into madness. There are other, systematic double-binds in society at large. For example, Joseph Heller's novel *Catch-22* expressed the idea that if participating in war was driving you crazy, that showed you were sane—but only the insane could be discharged from the military. The term 'catch-22' has come to stand for cultural double-binds in general. From time to time we all find ourselves in impossible, contradictory, 'damned if you do and damned if you don't' situations. If we are fortunate enough to meet them after a fairly healthy upbringing, and if they are not too persistent and excruciating, the double-bind may give rise to wry humor or a creative 'none of the above' solution.

If you have ever been depressed—and if you're human, you probably have—you know how your mind works in that condition. It runs through the same negative memories and worst-case scenarios, over and over. Your mind seems stuck. *Depression* is a muddle, even though it may have physical and other real-world causes.

The *loop* is a repetitive conversation in which nothing is ever resolved. It happens when two people (or groups) fall into the same framed interaction over and over. There isn't much real emotion in the loop itself—something else keeps it going. The same stereotypes meet the same tired arguments. Visualize film going through a projector, but some of the sprockets fail to catch, so the film backs up into a loop instead of going forward. Now on the screen you get to see the same little piece of action jumping around indefinitely. In its way the loop is a kind of time warp.

Something like this also occurs to an individual who is depressed. Thoughts go around in circles, never moving towards a solution or an insight. Wheels are spinning, but the vehicle doesn't gain traction. In both cases, the loop and the depression, the situation seems to require an infusion of energy, a creative alternative, different vistas or a new insight. You could regard any sort of neurosis as a loop because people are reacting in the *present* to situations that happened in the *past*.

Some people not only tend to get into conversation loops but also have a distinctive handling of material objects, relationships, time and space. They are always late; finances are in a tangle; appointments and social obligations coincide, are overscheduled, or are forgotten completely; relationships are multiple and confusing; and the household environment is cluttered. Such

looping may stem from a deep desire to slow down, to pattern the environment in a way more congenial with the person's temperament, to sabotage the assembly line of modern life in favor of a more natural pace or more social contacts. But in the world we live in, these loops can be energy drains on both loopers and others. Recognizing that you are in a loop is the first step to getting out of it.

The Spirit of Contradiction is what you might call a quirk. It may arise from the rebelliousness of toddlers or adolescents, from a parent or spouse seeking to maintain dominance, from an elderly person set in her beliefs, or from anybody who has somehow fallen into this method of establishing autonomy, authority, or individuality. Children play it as a game: "I did not!" You did!" "No, I didn't!" "You did so!" This loop can go on ad infinitum until they tire of it.

Adults play with a bit more subtlety: "It won't work"…."You don't know what you're doing"…."Why don't you do this [instead of what you are doing or planning to do]"….and all sorts of flat contradictions, rude interpositions of one's own point of view to supplant the other's, statements of opinion as if they were proven fact, and general contrariness. To some extent contradiction may be an attempt to express one's individuality, like the two-year-old phase of saying "No!" Or it simply becomes a pastime for those who evidently doesn't have anything better to do with their mind. However, when it becomes a reflex, this not only stops communications but can lose friends and influence people to avoid you and your constant put-downs.

This oppositional attitude has entered politics, too: If the Dems/Repubs are for it, I'm against it. If the previous president did it, this one feels obliged to undo it. It is political action based on "either-or" thinking.

I am not advocating that we stop arguing with each other, or that you never contradict another person. But the spirit of contradiction when it becomes a habit places one's remarkable mentality in the service of certain lesser emotions, such as the desire to push other people around in order to shore up one's own self-esteem.

Another, crazy-making form of contradiction is *denying other people's reality*. For instance, a kid falls, scrapes his knee, and an adult immediately says, "That didn't hurt." Or a child tries to avoid a person who teases her unmercifully, but adults laugh this off and insist she be polite to the sadist. When you say "That person doesn't like me," your spouse automatically answers: "You're just over-sensitive." People who have no problems with drinking coffee or eating swordfish or taking a certain medication may deny that somebody else's metabolism could work differently. As a political stance, one defines groups of individuals—quite often the poor or minorities, or perhaps whole countries—as self-indulgent whiners with a victim mentality.

Institutions and bureaucracies often operate the same way. As the government denied for decades that veterans might be suffering from exposure to Agent Orange, they now issue similar denials concerning exposure to DU (depleted uranium) and those sickened by mandatory anthrax vaccinations or the anti-malarial drug Lariam. Recently I experienced an adverse drug reaction to a widely prescribed antibiotic. Even though the news is currently full of drug recalls and actions against drug companies whose salespeople oversell their products, some of my friends as well as medical personnel tended to downplay my experience, and to discount similar experiences related on the Internet. We do tend to trust authority over our friends' experience (and even our own). Even those who do not trust political authorities will trust medical authorities.

When a society habitually overrides other people's beliefs about their own experiences, non-conformity and dissent may be the next target. There is little enough reality to go around as it is,

so let people have their own. Trust your own senses and intuition, too, unless you are prone to act on impulse.

Human Error: Hierarchical institutions such as the military can magnify individual preconceptions and the habit of jumping to conclusions, especially amid international tension and conflicts. In a tragic incident 20 years ago, a U.S. warship shot down an Iranian jetliner over the Persian Gulf, killing all 290 persons aboard. An inquiry by the Pentagon found "human error" to blame:

> The inquiry found that in the **stress** of battle, radar operators on the Vincennes **mistakenly convinced themselves** that the aircraft they had spotted taking off from the airport in Bandar Abbas, Iran, was hostile and intended to attack the Vincennes. With the **perceived threat** fast approaching, they **wrongly interpreted** what they saw on their radar screens in a way that reinforced this **preconceived notion**. These **misinterpretations were then passed on** to Capt. Will C. Rogers, the ship's commanding officer, and led him to conclude that his ship was in imminent danger [author's emphasis].

Some for various reasons will not believe this version of the event, but it is quite plausible. In the current wars in Afghanistan and Iraq, the tendency to human error has led to many 'friendly fire' incidents as well as massacres of wedding parties misperceived as assemblies of terrorists.

Some muddles are even more threatening, such as nuclear accidents. Katie Mounts points out some incidents that have occurred in the last five years. First, the United States mistakenly shipped nuclear weapon triggers to Taiwan, instead of helicopter batteries. In 2007, the military accidentally flew six armed nuclear cruise missiles from North Dakota to Louisiana, where they sat around outside unattended for some hours. Then British and French nuclear missile submarines collided in the Atlantic, and two U.S. Navy ships collided just south of Iran. Fortunately, they were not carrying nuclear weapons at the time.

Now let us move to muddles in particular, such as:

"Everybody could live in Texas." This notion is commonly expressed on the Internet and letters to the editor. As an example, here are excerpts from a blogger called "Pronatalist" who is defending the idea with whatever arguments he can dredge up. I have added some keys to what is missing from his analysis:

P: Yes, it is very possible to cram all 6 billion people into a single state. I have worked it out on a calculator…there is just enough room for everyone to have around 1000 square feet of housing per person.

[BUT—housing is not the only necessity or even the most basic. Pronatalist does not take into account the need for water sources, arable land for growing food, facilities for sewage and garbage disposal. How will apartments be heated, cooled, and receive electricity? P. does not subtract land that is currently unsuitable for human habitation because it is swampy or a chemical dump. He does not consider space for schools, churches, hospitals, other public buildings, playgrounds, athletic fields, warehouses, cemeteries, factories, stores, or roads.]

P: The only reason to populate Texas so densely would be if the world population was rising past a trillion people. [With that many people in the world] I think food, desalinated ocean water, and such, would likely be churned out by machines…much like how you would do for the long term on a space ship.

[BUT—on what does he base this expectation of machines making food and water—a near-future nanotechnology? or on Science as Magic? And can he visualize a trillion people? That is over 150 times as many people as now. Imagine 150 people every place you now see one.]

P: *My calculation does not assume that there would be all that much need for parks and backyards, which could of course be provided on other floors of buildings, but then being alive does seem much more important than having a backyard to mow.*

[BUT—is a life completely isolated from nature a fully human life? Do children in particular thrive living indoors, and is nature solely a lawn to mow or a "park" that exists in a building?

With a trillion people in high-rises covering the earth, what would take the place of biological services such as the oxygen/carbon dioxide cycle? Furthermore, if there were even one-hundredth of a trillion people, or ten billion, there would be very little left of any other species than humans. The Sixth Extinction was already underway when humans reached five billion. Should this make any difference to humans or to the Creator who presumably created all those species?]

P: "Overpopulation" is just another shaky liberal excuse for imposing communism, and telling everybody what to do....Who's to say how many people is too many to fill an entire planet, and not just Texas. Only God is qualified. And God has already told humans to "be fruitful and multiply and replenish (fill) the earth."

[BUT—'replenish' does not simply mean 'fill,' but suggests a completion or resupply of what is lacking or has been used up. How does Pronatalist know that God's command to multiply has not already been fulfilled? There are currently about a hundred times more people on Earth than there were in Old Testament times. Note that after creating the birds and the fish, God also told them to multiply in Genesis 1: 20-23 "And God saw that it was good. God blessed them and said, 'Be fruitful and increase in number and fill the water in the seas, and let the birds increase on the earth.'" How can animals 'fill' the Earth if the humans are also filling the Earth? Many species of birds, sea mammals, and fish are already declining because of human activity.]

P: It is actually more inhumane or radical to prevent births or eliminate future people [by contraception]. *All the people want to live....Countries should be proud to encourage their people to make large and growing contributions to world population so that more and more people can enjoy living....Even the utilitarian principle of doing the most good for the most people implies that to do the most good, the human population should be very large.*

[BUT—the utilitarian principle is the ethic of decisions based on the greatest good for the greatest number of people involved in the situation, not of somebody else halfway across the world or even less those who have not yet been conceived. Never before did anyone interpret this principle to mean that greater total numbers lead to greater total good.

Pronatalist does not take into account several billion people who currently are poverty-stricken, disease-ridden, and/or who live in war-torn areas, who probably do not truly enjoy living that much, although almost all of us humans will tenaciously hold on to life once we have it. Regarding the desires of people to live who are not yet even gleams in their father's' eye—who has the right to speak for these hypothetical people?]

It is not clear whether Pronatalist is most influenced by the ideology of Cornucopians, anti-abortion fundamentalists, or dogmatic Catholics. In any case his muddle seems based on common notions that food comes from the grocery store, that overpopulation is only a real estate problem, and that nature is a luxury. He reads the Bible 'literally,' yet interprets it his own way. Pronatalist knows very little about the circumstances in which people live in the ninety-five percent of the world that is not the United States. He has no understanding of his relationship in nature and is lost in words: a very good example of an ideologue.

Incidentally, the late science and science fiction writer Isaac Asimov said something relevant to this question. Asimov noted that so far, the largest human population increase occurred from 1800-2000, largely because of the industrial revolution of agriculture, control of disease, and

reductions in infant mortality. Population grew 6.6 times in those two centuries. If it continued to grow at the same rate, by the year 3000 there would be 75 trillion people on Earth. Asimov continues:

> Even the Solar System cannot hold an unlimited number of people….At the present rate of increase, the total mass of human flesh and blood in the universe would equal the total mass of the universe itself by the year 9000.

Make War on Nouns: Some people object to the slogan "The War Against Terror (or Terrorism) —which was first declared by Ronald Reagan—because this frame implies war against an emotion, noun, or tactic rather than against a nation. Historically, armed conflicts have been between two or more nations or they have been civil wars between two or more factions of the same country. A war that has an ill-defined enemy may not succeed, or it may be a propaganda cover for waging war against adversaries chosen for other reasons than the ones publicized.

Since World War II, a number of other governmental crusades have been framed as 'wars' such as Lyndon Johnson's war on poverty, Richard Nixon's wars on cancer and crime, or the war against drugs, also begun by Nixon. Their main resemblance to a traditional war of nation against nation is that they consume tremendous amounts of money. Johnny Holloway points out that the idea of going to war tends to perform a number of functions, such as closing political ranks, mobilizing citizens, discouraging dissent, and bringing out patriotism. Policymakers establish a "rally around the flag" atmosphere in order to foster conformity and discourage questions.

The Drug War has had a long run, about forty years, probably because it connects with so many interests. These include the police and the prison industry, which get technological upgrades and more funding. Foreign interventions against leftist rebels can be cloaked in terms of anti-drug campaigns. The Drug War helps assure white dominance and fewer voters for Democrats since people of color are incarcerated for drug offenses in disproportionate numbers. It also provides reality enforcement when directed towards use of marijuana and psychedelics.

The War on Drugs has been a successful *meme* although it has not itself been a successful crusade, spending about half a trillion tax-dollars without reducing the use of drugs in the United States. In fact, according to Radley Balko of the Cato Institute, a libertarian think tank, illicit drug sales in the U.S. are estimated to be worth $50 billion today compared to $1 billion in 1980 when the campaign began. Balko says "Illicit drugs are cheaper, more abundant, and of purer concentration than ever before." He also notes that the War on Drugs has brought some dubious side-effects such as the zero tolerance mindset, asset forfeiture laws, mandatory minimum sentences, and the highest incarceration rate in the world.

Malaria and DDT

I have yet to see any problem, however complicated, which, when you looked at it the right way, did not become still more complicated.
Poul Anderson, American science fiction writer, 1926-2001

An important debate has to do with whether the world should commit to a worldwide ban on DDT. This argument hinges on the persistence of malaria in about 100 countries, resulting in two to three million deaths a year, three-fourths of them African children under age five. Malaria also

afflicts places such as Sri Lanka, and poses a threat to 40 percent of the world's population. The mosquito-borne disease destroys families and economies especially in Africa, where more people die of malaria than of AIDS.

In many countries which used DDT in the 1960s, malaria deaths greatly decreased. Thus some people want to keep the use of DDT for mosquito control. There are ways to use DDT that do not involve wholesale spraying.

DDT carries its own grave dangers. The pesticide is an organochlorine with endocrine-disrupting properties. DDT concentrates at higher levels in the food chain (and humans are at the top of the food chain). It is very stable in the environment, persisting for many years while wind and water transport it across the globe and into the tissues of animals and humans. In the U.S., human blood and fat samples taken in the 1970s showed detectable levels of the pesticide in all samples. It is known to harm fish, other aquatic life, and various birds, but studies concerning human health are conflicting. In many areas DDT has lost effectiveness because mosquitoes have become resistant to it. Resistance may appear after only six or seven years of spraying.

Reasonable people would balance present and potential dangers based on the best available scientific evidence. They may operate under two somewhat different philosophical approaches: risk/benefit analysis or the precautionary principle. In fact, there is a general compromise: most countries have agreed to tight control of DDT, while keeping it for strategic anti-malarial use. The World Health Organization (WHO) says that the use of DDT indoors to coat walls is acceptable.

However, muddles have crept into this controversy, based on misunderstandings or misinformation, either/or thinking, the involvement of libertarian think tanks promoting free market approaches, and promotion of DDT by two large South African mining companies.

One *misunderstanding* among the public is that there is currently a worldwide ban on DDT, because the United States banned its use in 1972. During the 1970s and 1980s, most developed nations banned the *agricultural* use of DDT; but it has never been banned for use against malaria in tropical countries. The Stockholm Convention, ratified in 2001 and signed by 98 countries, calls for the elimination of DDT and other persistent organic pollutants, except for public health crises. But malaria is still a health crisis, and DDT is still being used until better alternatives are available to control malaria—or until an area's mosquitoes are resistant to it.

Another muddle for decision-makers is *lack of information* about how cost-effective DDT is compared to other means of fighting malaria. For instance, Mexico successfully used a range of chemical and non-chemical strategies at less cost than DDT spraying, while research in Thailand found that bed-nets treated with another insecticide prevented malaria cases more cost-effectively than DDT spraying. However, a study in South Africa found it cost less there to spray DDT. According to NIH researchers, the "gross lack of information on the costs and effects of many interventions, the very small number of cost-effectiveness analyses available [and] the lack of evidence on the costs and effects of packages of measures" are barriers to decision-making.

Malaria had become rare in the United States and Europe 100 years ago because of draining swamps and filling in mill ponds. A 1972 article in *Environment* magazine presented data showing that the most effective and lasting cure for malaria was a general improvement in diet and health of the affected population. Before DDT was developed in the early 1940s, people in the tropics controlled malaria by filling in the mosquito's breeding places or by applying oil to standing water. But such methods have been little used in Africa in the sixty years since DDT was introduced.

The next malaria muddles were political, and resulted from the injection of ***ideology, propaganda*,** and ***private economic interests***. In 1999, the World Wildlife Fund began a campaign to get the UN to include in the Stockholm Convention a total ban of DDT by 2007. Their efforts were opposed by the Malaria Foundation International, concerned about unnecessary deaths from malaria. Then a network of libertarian think tanks took up the cause of the Malaria Foundation, lobbying against controls on DDT for the reason that they advocate free-market approaches to public health issues. At least twelve free-market think tanks entered the fray, including the influential American Enterprise Institute.

The free marketers needed to make the debate a more controversial, starker choice. The story from the think tanks is an "Eco-Imperialism narrative" that the West is hypocritically and selfishly depriving developing countries of the right to use DDT to protect their people. Along with this narrative are efforts to debunk Rachel Carson and her 1962 book, *Silent Spring*, which first gave public warning about the dangers of pesticides and greatly influenced the early growth of the environmental movement. Another strand of the narrative paints environmentalists as concerned only with wildlife or scenery, not with human beings; or as being obsessed with the "theoretical" dangers of DDT compared to the real-world dangers of malaria.

This brings us to the ***two philosophies*** in opposition here, the cost-benefit (or risk/benefit) analysis and the precautionary principle. Both have their uses, and in general, one is not 'better' than the other; it is not an either-or. For example, when faced with a major personal decision, I use a version of cost/benefit analysis to clarify my options, listing advantages and disadvantages of each possible course of action. But in the corporate bottom-line world, a frequent problem with cost/benefit accounting is that those who pay the costs are not the same people as those who receive the benefits. Thus we get business decisions about 'acceptable risks' to the public at large. If managers expect only a small or unknown number of people to die from their factory's emissions, then it is business as usual—because, after all, society needs those widgets they are making.

The precautionary principle is particularly valid when the potential danger of taking a certain course or using a particular technology is a very great one. Hormone-disrupting pesticides could conceivably wipe out even more of our species than malaria does. However, the scientific studies *so far* do not clearly show this degree of danger. Whether cost/benefit analysis or precautionary principle, complexities must be weighed against other complexities, and adequate data is essential. Propaganda only adds a wild card.

In Africa itself, where the malaria problem is most acute, it is interesting that South Africa is now "the largest government promoter of DDT for mosquito control" while the country it borders, Mozambique, prefers a precautionary approach. The mining industry in South Africa is its major single industry, and two large mining corporations, Anglo American and BHP Billiton, strongly promote DDT spraying because they find it a cost-effective way to reduce absenteeism in their work force.

The Malaria Foundation and its free-market supporters were successful in their lobbying, as the final treaty decided in 2000 omitted any commitment to a definite date for a ban on DDT. In time, a technological breakthrough could trump the ideological arguments. In 2005, two separate research groups found that fungal spores could kill adult mosquitoes. In early 2007, researchers announced they had genetically engineered a malaria-resistant mosquito. The resistant mosquitoes have a higher survival rate than the disease-carriers, and could eventually replace them. However, scientists cautioned that much more testing needs to be done.

Chapter 22: Terrorism as Muddle

It's not right to respond to terrorism by terrorizing other people. And furthermore, it's not going to help. Then you might say, "Yes, it's terrorizing people, but it's worth doing because it will end terrorism." But how much common sense does it take to know that you cannot end terrorism by indiscriminately dropping bombs?
Howard Zinn, historian, *Terrorism and War*

Some words desperately need a good definition. In an article in *Scientific American*, social scientist Rodger Doyle says there is no agreement on what constitutes terrorism, but he defines it as "the use or threat of violence to make a statement about ideological or cultural beliefs." By Doyle's definition, most terrorism occurs on home ground, often in the form of 'hate-crimes.'

The word 'terrorism' is commonly applied with a broad brush to very different situations such as insurgents in guerrilla warfare against foreign occupation; leftist rebels within a country; religious ideologues who use violence against civilians to warn or punish another country or culture; dissidents attacking a tyrannical regime; even radical environmentalist groups attacking property rather than persons. Doyle says that the State Department's list of foreign terrorist organizations includes "groups as diverse in structure and objectives as Peru's Shining Path, the Liberation Tigers of Tamil Eelam, Basque Fatherland and Liberty, the Communist Party of the Philippines, and Hamas." Thus do officials designate as terrorists any group that uses violent tactics for any reason—as long as it does not wear some government's uniform.

The concept of foreign terrorism became a fixation that has limited thought for decades. For example, take the summer of 1986 when, in fear of terrorists, large numbers of American tourists cancelled or changed their minds about trips to Europe. In vain did the media publish that the numbers of Americans killed by terrorists in the years just previous was approximately the same as the yearly toll from snakebite, fewer than those killed by falls in the bathtub, and far fewer than those killed in 'normal' homicides throughout the United States.

Especially since September 11, 2001, the American public links the word 'terrorism' with the Mideast. Meanwhile, the media tend to ignore domestic terrorism, which includes violent, ideologically-motivated crimes such as the Oklahoma City bombing. They also leave out 'hate crimes,' although by Rodger Doyle's definition, from 1982 to 2001, "the largest categories of terrorist offenses are racial/ethnic crimes (mostly against blacks), followed by religious (mostly anti-Semitic) and anti-gay crimes." Doyle says that solid data on U.S. terrorism only began with FBI listings of hate crimes in the early 1990s. Reliable data are still lacking on some kinds of terrorism such as student attacks on other students as at Columbine, attacks against abortion-services providers, and police violence against civilians.

As far back as 1984, a column in the *Wall Street Journal* drew attention to over 200 specific acts of violence in the previous two years, including bombings and arsons directed towards buildings associated with family planning, women's medical care, and abortion. However, the FBI described these as "non-terrorist," because they had not identified any organized group as being responsible. Daniel Levitas, author of *The Terrorist Next Door*, says "The government has a severe case of tunnel vision when it comes to domestic terrorism." An ABC report said the FBI lists right-wing extremists as less of a domestic terror threat than the Earth Liberation Front, which has not killed anyone. According to *Congressional Quarterly*, a list of internal threats from the Department of Homeland Security did not include any radical right-wing groups.

Meanwhile, the Southern Poverty Law Center claims that racist Skinheads in the United States have committed at least 40 murders since 1987.

U.S. law enforcement has foiled at least sixty domestic terror plots since the Oklahoma City bombing, including a 1997 incident in which four suspects allegedly conspired to blow up a natural gas processing plant, says Mark Potok, director of the Southern Poverty Law Center. In April of 2003, William Krar, an east Texas man connected to white supremacist groups, was arrested and pled guilty to collecting sodium cyanide and other ingredients in quantities sufficient to make enough cyanide gas to kill thousands. His rented storage space also contained a half-million rounds of ammunition, dozens of pipe bombs, and remote control bombs. At the time, national attention focused on the bombing and invasion of Iraq and the incident received very little media attention.

Are Muslim countries more pro-terrorist than others are? A December 2006 survey conducted by the University of Maryland's Program on International Attitudes found that less than half of Americans (46 percent) believe that "bombing and other attacks intentionally aimed at civilians [are] never justified." In other words, more than half believe that attacking civilians is sometimes justified. In comparison, major Muslim countries except for Nigeria are much less approving of terrorist attacks against civilians: 74 percent of respondents in Indonesia agreed that terrorist attacks are "never justified," 86 percent in Pakistan, and 81 percent in Bangladesh.

However, the wording of this survey is not clear from the article. Did Americans think they were asked to approve official military attacks against foreign civilians? That question brings up the largest ambiguity in current definitions of terrorism.

Government Terrorism: Terrorism is currently defined as the action of non-official groups, those who do not wear a government's uniform. However, the word originally was used to describe violence by the state, as in the French Revolutionary "reign of terror." It is historical fact that the greatest terrorism has been sponsored by nation-states, who perpetrated crimes against civilians on a vastly larger scale than small groups of terrorists have ever been able to do. In fact, twentieth-century *democides* (mass murder of their own people by governments) probably killed even more people than wars did. Hitler, Stalin, and Mao Zedong each murdered millions and terrorized many millions more in their own countries. For example, sending armed teenagers into remote villages, Mao executed educated people, persecuted their families, publicly shaved the heads of women who wore modern clothes, and otherwise terrified the people into submission. Pol Pot, Idi Amin, Suharto, and Rios Montt are among other dictators remembered for killing their own people on a large scale. Saddam Hussein may have been in the second tier of this list.

A nation's own secret police may impose the terror, for example SAVAK, a secret agency that existed for several decades in Iran. The CIA and Mossad helped train and finance SAVAK to consolidate the Shah's reign after a CIA-sponsored coup replaced Iran's democratically elected Prime Minister, Mohammed Mossadegh, in 1953. SAVAK repressed dissidents through exile, imprisonment, assassinations, and routine torture, and in 1979, fired on peaceful demonstrators in Tehran, killing hundreds. SAVAK agents spied on students abroad, and factions even carried out many operations against each other.

United States covert actions in foreign countries have led to terrorist activities, either directly or through "blowback." Zbigniew Brzezinski, National Security Advisor to President Carter, described how geopolitical maneuvering of the United States government actually created the al Qaeda menace. Officially, CIA aid to the Mujahadeen (Afghani fighters) began in 1980, after the

Soviet Army invaded Afghanistan. But Brzezinski said Americans actually began their involvement six months earlier, *before* the Russians invaded. He said "We didn't push the Russians to intervene, but we knowingly increased the probability that they would."

Journalists Joe Stephens and David B. Ottaway of the *Washington Post* tell how the United States then supplied textbooks for Afghani schoolchildren that were filled with violent images, pictures of weapons, and militant Islamic teachings in order to promote resistance to the Soviets:

> Published in the dominant Afghan languages of Dari and Pashtu, the textbooks were developed in the early 1980s under an AID grant to the University of Nebraska-Omaha and its Center for Afghanistan Studies. The agency spent $51 million on the university's education programs in Afghanistan from 1984 to 1994.

Osama bin Laden went to Afghanistan to fight the Soviets and eventually to head a front organization, MAK, which supplied money, weapons, and fighters to the Afghan war. He was regarded as a CIA asset for years afterward. Concerning the CIA's creation of bin Laden and the Taliban, South Asian expert Selig Harrison said at a 2001 conference, "I warned them that we were creating a monster….The CIA made a historic mistake in encouraging Islamic groups from all over the world to come to Afghanistan."

Terrorism as War on Civilians: Some make a subtle distinction between national forces who bomb civilians from airplanes as part of a war strategy, on one hand, and urban guerrillas who bomb civilians from ground level. But what is the crucial difference? Some would define targeted assaults on civilians during warfare as terrorism on a larger scale. Noting the Allied bombings of Cologne, Dresden, Tokyo, Hiroshima, and Nagasaki during World War II, David Choweller says, "Acts of terror that succeed are redefined by winners as *not* being acts of terror." Bombings of largely civilian populations ("Shock and Awe") are characteristic of modern warfare. Attackers may rationalize them as encouraging civilians to overthrow their dictator, or falsely claim such technological perfection for their weapons that they pinpoint only military targets.

Another form of state terrorism targets another nation's civilians with an embargo or 'sanctions' that remind one of medieval sieges of cities. The old sieges lasted for a year or more until inhabitants were starving and ready to take their chances with the brutality of their conquerors. Michael Albert and Stephen R. Shalom note modern analogies:

> If we are talking about terrorism of the sort exemplified by…food or medical embargoes affecting civilians [or] by hitting "soft targets" such as health clinics or agricultural cooperatives, or by funding and training death squads, then we would have a rather different list of culpable nations, including such professed opponents of terrorism as the United States, Britain, France, Russia, and Israel.

Terrorism appears to be in the eye of the beholder. It is something that other people do—crazy, criminal people—not governments, and certainly not *our* government.

Suicide Terrorism: Robert Pape, Professor of Political Science at the University of Chicago, is author of *Dying to Win: The Strategic Logic of Suicide Terrorism*. Suicide terrorism is rising around the world but Dr. Pape's book is the first to research it in detail with evidence to explain this trend. Pape has created a comprehensive database of suicide terrorist attacks throughout the

world since 1980 and studied the motivations of suicide bombers. His findings contradict many common preconceptions, as follows:

Pape says suicide terrorism is not as closely associated with Islamic Fundamentalism as most people think. The world leader in suicide terrorist attacks are the Tamil Tigers in Sri Lanka—a Marxist, secularist, Hindu group. The Tamil Tigers had perpetrated more suicide terrorist attacks than either Hamas or Islamic Jihad, before their defeat in 2009.

A foreign military presence appears to be a necessary condition for suicide terrorism, says Pape. Available information shows that most suicide terrorists in Iraq come from Saudi Arabia and the indigenous Sunni community. According to Pape, attacks of suicide terrorism tend to occur in organized, strategic campaigns with a clear secular, political goal: to compel a modern democracy to withdraw military forces from the territory regarded as the terrorists' homeland. (Democracies are viewed as especially vulnerable to coercive pressure.)

Al-Qaeda fits this pattern in that one of its major objectives is the expulsion of U.S. troops from the Persian Gulf region. As the number of U.S. troops in the area has grown, so have Al-Qaeda suicide attacks. Between 1995 and 2004, seventy-one people killed themselves for bin Laden, the majority of them from the Persian Gulf and especially from Saudi Arabia.

Ninety-five percent of suicide terrorist attacks are organized by large militant organizations with significant public support. With data from more than 460 individual suicide terrorist attackers, Pape says it is clear that many of them are well-educated, middle-class political activists.

Should we not study and try to understand just what motivates people to conduct suicide attacks?

Chapter 23: Grand Muddles

"If this were played upon a stage now
I could condemn it as an improbable fiction."
William Shakespeare, *Twelfth Night*

Grand muddles have numerous layers of secondary muddles, as well as myths and ideologies all tangled together like a ball of barbed wire. Wars are the main exemplars of grand muddles.

Since civilizations began, or even before, there have been thousands of armed conflicts between two or more groups of people. However, on the personal level, most modern adults do not get involved in physical conflicts with other adults, with the exceptions of family violence and of cultures or sub-cultures that tend to bar brawls or gang war. When adults do fight, alcohol is frequently involved. In my lifetime, I have witnessed only three actual physical fights between two adults. Each one was quite grotesque, in its own way.

One fight was between two somewhat intoxicated middle-aged writers, with a lot more feints and jabs than actual contact. The highpoint of the fight was when the bald one grabbed the other's pony-tail and yanked him around by it. Up to that point, I had accepted the conventional wisdom that hair-pulling was only performed by women. This combat took place in one writer's home and I was the only witness, a good thing because this ridiculous affair would not have enhanced the reputation of either.

The second battle took place in a bar. It was a very serious conflict between two Korean War veterans in wheelchairs. Although their legs were missing or paralyzed, they had brawny upper bodies and seemed to be among that minority of men who continue to use physical violence to settle arguments into adulthood and, in this case, despite their great handicap. Fortunately, somebody stopped this fight as one vet almost dragged the other out of his wheelchair.

The third fight I witnessed was between two black women on the sidewalk near a housing project. A circle had gathered around them to egg on the fighters. One woman was large, muscular, and eager for combat, while the other was much more slender and looked frightened. It was quite evident that she was trapped in the situation. I left before the fight began in earnest, spared from seeing what I feared would be a tragedy, because I didn't belong there.

Sometimes in movies, especially Westerns, a bar brawl is portrayed as a funny event, and in general fist-fights are shown on the large and small screen in a very unrealistic manner, with sound-amplified blows, or with repeated punches and kicks that somehow result in nothing more than a cut lip. The resulting perception is that human bodies are much more resilient than they really are—as though 'beating somebody up' could not involve skull fractures, broken ribs, kidney damage, and sometimes death.

Grotesque as fighting looks up close, wars are supposed to be quite different. They involve honor, patriotism, loyalty to leaders, flags, and noble causes. Afterwards, tales are told, songs are sung, and legends grow, built upon heroism in war. Even a pacifist may feel a thrill in the film *Henry V* when the great actor Laurence Olivier leads the charge with "Cry God for Harry, England, and St. George!" merged into the pounding of countless horses' hooves. But despite all the legends, songs, and cultural propaganda, wars up close are infinitely more grotesque than individual fights. Combat veterans know this, and film audiences can learn a little something of it from seeing realistic battle scenes in *Saving Private Ryan* or *Letters from Iwo Jima*.

Wars are incredibly ugly. Yet despite the trivial or venial nature of their causes and the pointless, gory death of thousands or millions of people caught up in this fatal attraction, the absurd wars continue. We begin this chapter with an assortment of bizarre yet typical military conflicts from history. Secondly, we look at a would-be war between two "civilizations" that is being urged by some of the spectators. Third is the grand muddle of fascism.

A Handful of Absurd Wars

In time of war, Murphy's Law went on steroids.
Eric Flint, alternate history novel *1635: The Eastern Front,* 2010

Matthew Wall lists a number of American wars with muddled beginnings in "The Bellicose Curve," saying "Iraq is only the latest episode in a century-long series of misinterpreted, misunderstood, misapplied, suppressed, and flat-out incorrect intelligence that has led the United States into war." One example is the Mayaguez Incident in 1975, when Cambodian troops seized an American merchant ship they claimed was in Cambodian waters, holding its 40 crew members on an island. President Ford sent Marines to rescue the crew, but faulty intelligence sent them to a different island. While the Khmer Rouge was actually returning the crew to U.S. custody, Marines invaded the wrong island and lost 41 lives.

Wall mentions the sinking of the USS Maine in 1898 in Havana from a sudden explosion that killed 266 crew members. A Navy board of inquiry too quickly decided that a mine caused this disaster, giving President McKinley, Hearst newspapers, and the public an excuse to blame Spain and go to war. However, careful investigations in 1976 and the 1990s showed that the explosion was most likely caused by bad coal-handling procedures and ammunition stored too close to the steamship's furnace.

The following sampling of armed conflicts includes the War of the Whiskers, the Thirty Years' War, Opium Wars, the War of the Triple Alliance, the Football War, and U.S. Invasion of Panama. By the way, absurd means senseless, not funny.

The War of the Whiskers occurred some centuries before the advent of the modern nation state, from 1152 to 1453. This long conflict between medieval France and England began with a quarrel between a married couple, who happened to be the King and Queen of France.

While King Louis VII was away fighting during the Crusades, he obeyed the dictates of the Pope and ecclesiastical authorities against long curly hair and beards, cropping his head like a monk and shaving off his beard. When he returned home, his Queen, the pleasure-loving Eleanor of Aquitaine, found him ugly in this guise and coldness grew between them. (One suspects there may have been other reasons as well.) Eleanor eventually had the marriage annulled and instead married Henry Duke of Normandy, later Henry II of England.

However, with the lady's hand went her dowry, the rich provinces of Guienne and Poitou. These English-owned territories in France led to the long and bloody wars between the two nations. The last third of this period was known as The Hundred Years' War, during which time the Black Death swept Europe. Epidemics and pandemics tend to worsen during or after the chaos of wars. So many millions of people died from bubonic plague in the fourteenth century that it is hard to determine how many died in battle, but estimates are that war directly killed an additional two or three million.

If you wonder why the Founding Fathers were so determined to keep religion out of the Constitution, it was probably because of their knowledge of the religious wars of the previous two centuries. Between 1560 and 1715, Europe had only three decades of peace. Much of the tension was caused by the spread of Lutheranism and Calvinism into Catholic lands. By 1609, the Holy Roman Empire was split into two hostile groups of allied countries, the Protestant Union and the Catholic League. This conflict led to wars that killed millions.

The Thirty Years' War (1618-1648), which we mentioned earlier, was the most destructive of those 16th and 17th century religious wars, although it became as much about national power as about religion. Ironically, the war began in relatively peaceful Bohemia, where Germans, Czechs, Lutherans, Calvinists, Catholics, and even Jews and Rosicrucians lived together without too much conflict until 1617 when a zealous Catholic, Ferdinand II, became king of Bohemia. Soon he closed some Protestant churches in Prague. Fearing that Ferdinand would make the country Catholic again, Bohemian Protestants threw his governors from the windows of Prague Castle. They deposed Ferdinand and offered the crown to Frederick V, and by this act involved the entire Holy Roman Empire in the fray.

Between 1618 and 1625, Spanish armies supporting Ferdinand defeated Protestant armies. The Catholic League crushed the Bohemians in 1620. The Czech landscape and economy were ruined, half the population was dead by war or plague, and Ferdinand (who was now Emperor) employed the Jesuits to re-catholicize what was left of the people of Bohemia.

This was just the beginning, however. The Thirty Years' War eventually involved Bavaria, Spain, German princes on both sides, Denmark, Norway, Sweden, France, Netherlands, Italy, and Portugal, although most of the fighting took place in Germany. The war also involved witch-burnings and pogroms against Jews. Steven Kreis says:

> The Thirty Years' War was a terrifying war whose destruction was only matched by the First and Second World Wars. The land was destroyed and cattle slaughtered—all of which was made worse by a revisitation of the plague. The Holy Roman Empire lost one quarter of its inhabitants and its fragmentation into hundreds of small states delayed economic recovery as well as any hope for a unified Germany.

By other estimates, the war reduced the population of Germany by at least a third, which would be six million people. Some estimates are as high as fourteen million dead.

And now we come to what historian Richard Hooker calls "the most sordid, base, and vicious event in European history" with the possible exception of excesses of the Third Reich. This was ***The Opium Wars*** between 1840 and 1860**.** The wars had roots in the 18th century when the British East India Company began to grow opium in India and ship tons of it into Canton, China, trading it for tea and manufactured goods. The seat of the Chinese government was in Beijing in the North, far from the southern port of Canton. Despite bans and decrees, the Chinese government was unable to stop this trade, and by the 1820s, an average 900 tons of opium poured into China from Bengal each year. As a result, China became filled with drug addicts, with terrible effects on Chinese society.

The Chinese government made opium illegal in 1836 and started to close down opium dens, but British traders bribed Cantonese officials to let the drug in. Then in 1839, an incorruptible Chinese official named Lin Zexu became Imperial Commissioner and in two months time had shut down all opium traffic. Lin also destroyed existing stores of opium and wrote a famous

letter to Queen Victoria asking Britain to stop the opium trade to China, as the only moral course since Britain had made opium illegal in England itself.

But besides the loss of this lucrative trade, and Zexu's destruction of about three million pounds of opium aboard British merchant ships or in their warehouses, England was angry that the Chinese insisted on trying foreigners who were accused of committing crimes on Chinese soil. Britain refused to stop the opium trade, and in 1840 sent warships and a large British army from India. The Chinese were unprepared for the technological superiority of British forces, and were soon compelled to sign the Treaty of Nanking which was entirely in Britain's favor, for instance giving Hong Kong to Britain. The opium trade doubled in the thirty years following this treaty.

A Second Opium War broke out in 1856, resulting in the Treaty of Tientsin with England imposing further humiliating provisions including the complete legalization of opium and allowing free and unrestricted propagation of Christianity throughout China. After these debilitating defeats, Chinese officials began a drive to modernize China so that they could defend their country against what they saw as the barbaric West.

The War of the Triple Alliance (1864-1872) cannot be understood without an acquaintance with Francisco Solano López, the second and final ruler of the López dynasty in Paraguay. Born in 1826, Solano López was pampered by his father, who made him a brigadier general when he was age eighteen. The younger López was a Don Juan who could be quite cruel to any woman brave enough to turn him down. But on a weapons-buying trip to Europe in 1853, Francisco fell in love with a strong-willed, bright, and charming Irish woman named Elisa Alicia Lynch. The controversial "La Lynch" became his mistress, bore him five sons, and was at one point the largest landowner in Paraguay after Solano López transferred most of the country to her name during the War.

After his father's death in 1862, Solano López consolidated power by imprisoning several hundred critics and would-be reformers, intimidating the Paraguayan congress which then unanimously elected him president. The ambitious Francisco greatly overrated Paraguay as a military power, and did not heed his father's dying advice to avoid an aggressive foreign policy. Unaware that neighboring countries had stabilized since his father's time, the younger López then provoked war with the much larger Brazil and her allies Argentina and Uruguay.

The ensuing War of the Triple Alliance killed half of Paraguay's population, including most of the adult men. Vast areas of its land were annexed by Argentina and Brazil according to secret prearrangements in their alliance. During this horrible war, Solano López ordered the executions of thousands of Paraguayans including his own brothers and many of his bravest soldiers and generals. He had his mother and sisters tortured because of suspected disloyalty. An English engineer who worked for Solano López and also fought gallantly in the war called his ex-employer "a monster without parallel." Some see him as a paranoid megalomaniac.

Yet revisionist historians in Paraguay have portrayed Francisco as a patriot, a tragic figure defending his country against the designs of Argentina and Brazil. For seventy years now, Paraguayans have considered Solano López as their nation's greatest hero.

Here is a small war, whose name is all that provides comic relief, since 2,000 died: the ***Football War of 1969*** between Honduras and El Salvador. Both countries had military governments and domestic unrest, with many landless peasants who wanted land reform. Military leaders preferred to sidestep domestic issues by provoking citizen hatred of the

neighboring country, and their respective media complied with this official desire. Tensions were further inflamed by riots during a qualifying round for the 1970 FIFA World Cup, after which the Salvadoran army attacked Honduras. The Organization of American States negotiated a cease-fire, which took effect five days after the war began.

The Football War is noteworthy as an example of how a country's domestic conflicts may be redirected against another country through propaganda; also how a military government looks for military solutions.

The United States Invasion of Panama took place in December, 1989, under the code name 'Operation Just Cause.' The invasion followed a year of diplomatic tension between the United States and Panama concerning actions by Panama's military leader, Manuel Noriega, who had worked for the CIA from the late 1950s to 1986. The George H. W. Bush administration gave the following reasons for the invasion: safeguarding U.S. lives in Panama; defending democracy in Panama (Noriega had nullified presidential elections won by opposition candidates); money laundering and drug trafficking; and protecting the neutrality of the Panama Canal.

Regarding the first reason, to safeguard lives, American and Panamanian civilians had a history of friendly relations. However, a few days before the invasion an incident between four American soldiers in a vehicle and Panamanian (PDF) soldiers at a roadblock took the life of an American soldier. The PDF claimed the Americans were armed, which the U.S. denied. The *Los Angeles Times* reported that the soldier who was killed belonged to a group called the "Hard Chargers" whose aim was to agitate the PDF. The Hard Chargers were known to U.S. officers but not officially sanctioned. Later the Pentagon denied such a group had ever existed.

As we will describe in the second book of this series, this was the first war in which the U.S. military restricted journalists and carefully managed what news came out. As a result, most Americans know little about the war or its effect on Panamanians.

The invasion involved 27,684 U.S. troops and more than 300 aircraft against the 3,000 members of the Panama Defense Force. An attack on the downtown headquarters of PDF started fires that destroyed most of the densely populated *El Chorrillo* neighborhood. As a result of the news blackout, there is a great deal of controversy about the number of civilian casualties, which according to official Pentagon figures was 516 but according to an Independent Commission of Inquiry was between 1,000 and 4,000 dead. Panamanian protestors put the number at 3,000.

Physicians for Human Rights reported that relief efforts were inadequate to meet the needs of at least 15,000 civilians made homeless by the invasion. The U.S. military provided support for 3,000. Nearly two weeks of widespread looting and law-breaking followed the chaos of the invasion, while American forces concentrated on the capture and extradition of Noriega. When the dictator found refuge in the Vatican diplomatic mission, American forces played loud rock-and-roll music at him (and everybody nearby) day and night until Noriega surrendered.

Many businesses were ruined by the looting and vandalism, and their insurers went bankrupt. The following year, 60 companies filed a lawsuit against the U.S. government charging that the invasion was carried out in a "careless and negligent manner with disregard for the property of innocent Panamanian residents."

The Organization of American States and the United Nations General Assembly passed resolutions condemning the invasion. So did many Latin American governments, including even Chile under its dictator Augusto Pinochet. In 1990, the new Panamanian government abolished Panama's armed forces and in 1994, a constitutional amendment permanently abolished the military.

Footnote to History: Former Defense Secretary Robert S. McNamara, the leading architect of the Vietnam War, published a memoir in 1995 in which he gave himself much of the blame for that war. In his book, *In Retrospect: The Tragedy and Lessons of Vietnam*, McNamara said the war could have been avoided, and that once started, it could and should have been stopped at any one of five key points. He and other senior advisors to President Lyndon Johnson, who were called "the best and the brightest" because they were smart, dedicated men, nevertheless failed to head off or stop the Vietnam War because "we, as a government, failed to address the fundamental issues."

The Dollar Costs of War: A 2007 report by the Congressional Budget Office estimates the wars in Iraq and Afghanistan will add up to $2.4 trillion. According to two economists, one of them a Nobel Prize winner, the Iraq War will cost the United States more than $3 trillion. Linda Bilmes and Joseph E. Stiglitz (former chairman of the Council of Economic Advisors) include future medical care and disability benefits for veterans in their estimate. Of the vets who served in the first Gulf War, 40 percent are now receiving disability pay. Many of the more than one million soldiers who have served in Iraq have suffered serious injuries and PTSD, and were exposed to the same DU weapons implicated in claims from the previous war. VA medical facilities are currently overwhelmed and beneficiary claims are backlogged.

Another cost in this estimate is rebuilding the post-Iraq military. Besides replacing equipment, this cost includes large sums that the Defense Department has been spending to recruit soldiers, such as recruiter bonuses up to $40,000 for new enlistees. Using private contractors has been very expensive. Another cost is interest payments on the money borrowed to pay for the war, which will add up to between $264 and $308 billion, according to the Congressional Budget Office.

Economic costs include the loss of productive capacity of soldiers killed or seriously wounded, the loss of civilian wages by called-up Reservists and National Guard, and "macroeconomic effects" such as the increasing price of oil.

A Clash of Civilizations

> *For what can war but endless war still breed?*
> John Milton, English poet, 1608-1674

Some spread the idea that there is a fated or predestined clash between the West—the United States and Europe—and Islamic countries. This meme is based on political, geopolitical, or religious ideology, or all three. Specifically, the notion gained currency in order to justify and rationalize the wars already underway in Afghanistan and Iraq, and others possibly planned by the Bush administration and/or military planners against countries such as Syria and Iran. The Iraq War/occupation which the West initiated, taken together with al Qaeda and other terrorist attacks on civilians in the United States and other countries, together become inflated into a 'clash of civilizations.'

However, we must note first that the Christian West and Islam are not two entirely separate civilizations. Mesopotamia, now Muslim Iraq, was the "cradle of civilization" for the West. Ancient Mediterranean peoples constantly sailed and traded around the edges of their small sea, borrowing ideas and stories from each other. From the Phoenicians, a people now Muslims, came the Western alphabet. Later, the Arabs passed on (from India) the numerals that we use

today and the idea of zero, without which we would not have our mathematics or the science based on it. About 350 BC when Alexander the Great conquered a vast territory to the edges of India, ideas spread back and forth between Greece, Eastern civilizations, and every place in between. This creative mixing-up of ideas might be one of the very few benefits of past wars.

A millennium ago, a brilliant Islamic civilization in Spain lived peaceably with Christians and Jews in its midst. All of Europe knew the finest steel came from Toledo in Spain, and kings had their Arab physicians, because they were the best at the time. Arab civilization had preserved documents from ancient Greece and Rome. One result of the Crusades was that Arabic learning entered Italy and stimulated the Renaissance. Islam and Christian Europe have been culturally interweaving ever since the birth of Islam, for about 1,300 years.

Even today, one may note that American business has no problem with Arab *money*, since state-owned Gulf oil companies have already bought major New York hotels, retail chains, and a couple of U.S. defense plants, while considering a leveraged buyout of Dow Chemical Company.

Christian fundamentalist leaders contribute to the frame of two clashing civilizations with pronouncements that the Muslim religion is 'evil.' They are prone to selective reading of violent passages in the Qur'an, while skipping over equally violent passages in the Old Testament. Also, they ignore the fact that Muslims accept the Old and New Testaments as part of their own religion. Christians, Jews, and Muslims all believe themselves to be descendants of Abraham, so theologically speaking, these three are one kin. What a dysfunctional family, though! Even within the same clan, sibling rivalry has so often turned fratricidal: Protestants vs. Catholics, Shiites vs. Sunni.

Examples of this 'clash' thinking, with its sweeping generalizations and gross oversimplifications, are the following excerpts from letters to the editor in 2004 and 2005:

> "The Muslims have vowed to kill all infidels….The Middle East has been fighting amongst themselves since before Christ. They aren't going to quit, and now that they've decided we are the enemy, it will be a protracted effort just to keep them at bay."
> "The Islamic world declared war on us back in the 1990s. These Islamic terrorists hate us and everything we stand for….they want to destroy Western civilization."
> "Does anyone know of any world conflict that the Muslims are not involved in? It's time we identified the enemy, and past time for the liberals to stop giving comfort to the enemy and help win this war."

The idea that everybody in the Middle East has always been fighting turns up quite frequently in newspaper letters and columns. It may be based on the Bible and all the wars described therein. People apparently do not know much about the history of other regions. Whether ancient, medieval, or modern, people everywhere have unfortunately fought amongst themselves for millennia. The British Isles are a good example. Or it may be that because Israel and the Palestinians have been at odds ever since the writers have been conscious that they assume that this has been the case "forever" for "everybody" in the Middle East.

Another reason for prejudice against Islam is the perception that the religion represses women, although the repression may be due more to local tradition than to religion, and despite the fact several Muslim countries have had women presidents or prime ministers. At a social event I was appalled when a medical doctor said he strongly approved of invading Iraq because of the way they suppressed and mistreated their women. But unlike Afghanistan, Iraq was in fact a secular country with a number of women professionals—including medical doctors. If an

educated person supports a war that will inevitably kill thousands of men, women, and children, he does have at least the responsibility to know something about the adversary.

One stereotypical accusation that was prevalent in newspaper opinion was that Muslims or Arabs in general had no interest in democratic rule. This one will surely be put to rest now that Tunisians, Egyptians, and others are demonstrating en masse against their authoritarian, corrupt, and incompetent rulers. It seems that Face Book and Twitter can help a people achieve democracy more readily than can troops from a foreign country.

Prejudice against Muslims is probably more noticeable in Europe, which has had a generation-long immigration of workers from North Africa and Turkey. However, with the wars in the Middle East, American Muslim leaders saw increasing prejudice, along with a measurable rise in hate crimes. At a conference of Muslim leaders with U.S. government officials in December, 2006, officials tended to downplay the Muslim concerns and advised them to avoid the word 'Islamophobia.' The term itself is controversial. Some Muslims are afraid it could be used against liberal Muslims interested in reform of the Muslim community, for instance, toward greater acceptance of women's rights and gay rights.

Some sociologists argue that in the last decade or so, prejudices based on culture and religion are replacing race-based prejudice. Jeremy Seabrook says: "Officially, all right-thinking people have forsworn racism [but] Islamophobia is the half-open door through which it makes its triumphal re-entry into respectable society." Jehanzeb Hasan, a research assistant at California State, says that the kind of anti-Islamic prejudice expressed by the letter-writers mentioned above is due to the conflation of "Osamaism" with all of Islam.

A lot of this prejudice is due to simple ignorance. In the United States, much anti-Muslim prejudice rests on confusion between three things: 1) the Islamic religion; 2) a part of the world described as Arab; and 3) minority ideological/religious sects associated with extremist beliefs and violent actions. First, one should realize that there are well over one billion Muslims, with many cultural differences amongst them. Most of those who profess belief in Islam live in several large countries quite apart from the Arab world, including Indonesia, which has the fourth largest population in the world at 225 million; Pakistan, which is seventh at 142 million; and Bangladesh, eighth at 130 million.

Arabs, on the other hand, are a heterogeneous ethnic group that originated in the Arabian Peninsula. An estimated 200 to 300 million Arabs now live throughout the Middle East and in North Africa. Most Arabs identify themselves as such because they speak Arabic; others because they can trace their ancestry back to the Arabian Peninsula; and still others because they live in a country that is officially Arabic. But less than one-third of Muslims are Arabs. Also, some Arabs are not Muslim. Most Arabs who have emigrated to North and South America are Arab Christians, especially from Syria (which is 10 to 15 percent Christian), Lebanon (39 percent Christian), and Palestine (four percent Christian).

Two of the three largest nations in the Middle East are Turkey and Iran. Both are predominantly Muslim, but Turkey is not an Arab country and its official language is Turkish. Turkey identifies in many ways with Europe. Iranians regard themselves as Persians, not Arabs, and they speak Farsi.

There are also several myths about al Qaeda. First, it appears to be more of an ideology than an actual organization. British journalist Jason Burke says that although bin Laden forged links among already existing Islamic militant groups, "they never created a coherent terrorist network in the way commonly conceived." There is instead a radical internationalist ideology, "sustained

by anti-Western, anti-Zionist, and anti-Semitic rhetoric" with adherents who may follow bin Laden's models and methods but which are not linked to him in any major way.

Burke also says that Islamic militants are primarily trying to push back against what they perceive as aggressive Westernization and foreign control, with a secondary aim to re-establish the caliphate or single Islamic state of the 7th and 8th centuries in the lands it originally covered. This is often inflated in Western accounts as an attempt to impose a global Islamic state. Also, most people greatly overestimate the numbers of al Qaeda militants. According to Greg Grant at Defense Tech, reporting on a 2010 conference:

> Michael Leiter, director of the National Counterterrorism Center, estimated that there were somewhat "more than 300" Al Qaeda leaders and fighters hiding in Pakistan's lawless tribal region that borders Afghanistan. Combining that figure with a recent estimate given by CIA director Leon Panetta that fewer than 100 Al Qaeda operatives are currently in Afghanistan…500 appears to be the number of hard-core Qaeda operatives [that] intelligence officials believe are in the area that is now the focus of major U.S. military and intelligence operations

> Extremist, violent groups such as al Qaeda—associated with a small minority sect of Islam active in Saudi Arabia, and with Arab nationalism—may be no more representative of Islam than the Ku Klux Klan, militias, survivalists, white supremacists, or violent anti-legal abortionists are representative of Christianity. Few people of any ethnic group or religion are violent ideologues.

On the other hand, many Arabs deeply resent continuing interventions by Western powers in their region, and the War in Iraq disillusioned many more. Although militant Islamic groups command a tiny fraction of the population (according to Wikipedia there are an estimated 20,000 *active* al-Qaeda members world-wide, not including those who once simply passed through a training camp), they attract those young males who in every time and place are the ones most easily recruited for military and violent activities.

A "Frontline" program April 25, 2006, reported that the Iraqi insurgency has consistently fielded an estimated 15,000 to 20,000 men. Adding together active al-Qaeda members and Iraqi insurgents we obtain the number of an estimated 35,000 to 40,000 active U.S. adversaries, in Iraq and around the world. For perspective, if these numbers are at all accurate, the world's sole superpower is challenged by two groups which added together are equivalent to the total population of Springdale, Arkansas; Bountiful, Utah; or Chippewa, Michigan.

Does this not suggest something altogether different from 'a clash of civilizations'?

Fascism is a particularly muddlesome ideology and form of government because it mixes barbarism and modern idioms, mythology and technology, violence and noble-sounding ideals; and it makes such heavy use of propaganda that it actually drives people crazy and makes them incapable of thinking straight. But first we need to define fascism. Then, is there such a thing as Islamofascism?

Defining Fascism

Fascism should more properly be called corporatism because it is the merger of state and corporate power.

Benito Mussolini, fascist dictator of Italy

A fascist is one whose lust for money or power is combined with such an intensity of intolerance toward those of other races, parties, classes, religions, cultures, regions, or nations as to make him ruthless in his use of deceit or violence to attain his ends.
Henry Wallace, *New York Times*, April 9, 1944

The word 'fascist' is an overused label, often hurled as a personal insult. But fascism is no trivial matter, nor is it something just for the history books.

An Oxford professor, Roger Griffin, says that most believe they know what fascism is and can recognize it when they see it, yet most find the word very hard to define. A few believe that fascism existed only in Mussolini's Italy but not elsewhere. Or they see 1930s Italy as the role model. For others, the term is quite elastic and includes most Latin American, African, Middle Eastern, and Asian dictatorships. Griffin says that the Russian parliament tried to frame legislation to ban fascism but legislators could not agree about how to describe exactly what was being made illegal.

According to Griffin, a common academic definition is that fascism is a revolutionary movement that grows from populist ultra-nationalism. Fascism is revolutionary in assaulting liberal society because of that society's alleged decadence. In this definition, the core of fascism is the archetypal *myth of rebirth*. The common denominator of fascist regimes "is the bid to cleanse, regenerate, renew, [and] rejuvenate society" along nationalist and ethnic lines. Griffin's point is that fascism has its own ideology, and is not just a reaction by feudal and capitalist interests against the threats posed by socialism—which is the Marxist view.

Another definition is that fascism is a *terror-based dictatorship.* It is *reactionary* in the sense that it bases policy on reactions to current circumstances rather than on preventing future problems; it *persecutes or denies rights* to one or more segments of the population based on ethnic or religious differences; and it seeks to extend national authority by acquiring territories or establishing economic and political domination over other countries (*imperialism*).

A third definition, from political scientist Andrew Bosworth, says that full-blown fascism has economic, political, and cultural dimensions. Economic fascism is based on a *merger of big business and big government*. Political fascism usually includes a retreat from previous democratic practices, with power increasingly centered on the executive branch. "Political fascism is based on *militant nationalism*, pseudo-populism, and an adoration of military power." Cultural fascism involves a *reaction against science, modernity, the arts, intellectuals, and foreigners.*

Rather than define fascism, Dr. Laurence W. Britt analyzed seven regimes, now overthrown, that are commonly regarded as fascist or proto-fascist. Then he looked for the characteristics that they shared. His models were Nazi Germany, Fascist Italy, Franco's Spain, Salazar's Portugal, Papadopoulos' Greece, Pinochet's Chile, and Suharto's Indonesia. Britt found fourteen traits common to these regimes, which I have adapted as *Fourteen Traits of Fascist Regimes:*

1. *Powerful expressions of nationalism*. Common themes are pride in the military, and demands for unity. There was suspicion of things foreign and sometimes downright xenophobia.

2. *Disdain for human rights*. Through propaganda that marginalized and even demonized certain groups, the public was brought to accept human rights abuses.

3. Identification of *enemies/scapegoats* as a unifying cause to divert attention from other problems, to shift blame for failures, and to channel frustration.

4. Supremacy of the military and *militarism.* Ruling elites identified closely with the military and its industrial infrastructure. A disproportionate share of national resources was allocated to the military. Military action was used whenever possible.

5. Rampant *sexism.* Women under fascist regimes were second-class citizens. Anti-abortion and homophobic attitudes tended to be codified in harsh laws.

6. A *controlled mass media.* In some of the regimes, the media were directly controlled by the government. In others, control was more subtle through licensing, access to resources, economic pressure, and implied threats.

7. *Obsession with national security*. "Inevitably, a national security apparatus was under direct control of the ruling elite [and] was usually an instrument of oppression." Active opponents of these regimes were labeled as terrorists.

8. *Religion and ruling elite tied together.* Most of these regimes attached themselves to the country's predominant religion and positioned themselves as defenders of the faith. Although their actions were incompatible with the precepts of the religion, propaganda manufactured the idea that opposing the power elite was also an attack on religion.
9. *Power of corporations protected*. Large corporations were much freer to operate than ordinary citizens were. The ruling elite saw that the corporate structure could ensure military production and that the economic elite and political elite might have a mutual interest in repressing working-class citizens.

10. *Organized labor suppressed* or eliminated. Since the ruling elite saw organized labor as the one power center that could challenge them, they inevitably crushed it.

11. Disdain for and *suppression of intellectuals and the arts*. Intellectuals and academic freedom were considered subversive, so these fascist regimes tightly controlled universities and harassed faculty members they regarded as politically unreliable. "To these regimes, art and literature should serve the national interest or they had no right to exist."

12. *Obsession with crime and punishment*. Most of these regimes had harsh systems of criminal justice and maintained large prison populations. Leaders promoted fear and hatred of criminals or "traitors" among the population to justify greater police power.

13. Rampant *cronyism and corruption*. "The power elite would receive financial gifts and property from the economic elite, who in turn would gain the benefit of government favoritism. Members of the power elite were in a position [to steal] national resources."

14. *Fraudulent elections*. Common methods were keeping control of the election machinery, intimidating and disenfranchising opposition voters, and destroying or disallowing legal votes.

Fascist regimes of the 20th and 21st centuries somewhat resemble older forms of governance. They look like a sort of throwback or devolution to pre-Enlightenment values, Machiavellian methods, and the divine rights of ancient kings—but with the addition of modern technology and propaganda techniques. Naomi Wolf points out that "it is very difficult and arduous to create and

sustain a democracy—but history shows that closing one down is much simpler." Perhaps that is because it is an old model,

Since fascist dictatorships occur so regularly, we might be wise to regard fascism not as a sudden aberration, but as a common form of national regression we need to study and actively prevent.

Islamofascism

A whole mini-industry has grown up in the wake of the 9/11 atrocity dedicated to the proposition that Islam is the root of all evil in the world.
Justin Raimondo, anti-war, libertarian writer

Islamofascism is a political epithet or propaganda term that has been applied to very different Islamist movements such as Al-Qaeda, Iran's current government, the Taliban, Hezbollah, Hamas, Sunni insurgents, and Syria's secular government. But according to social critic and feminist writer Katha Pollitt, Islamofascism is an emotional term that clouds situations we need to see more clearly. She says that Saddam Hussein and the Baathists of Syria had no common ground with "shadowy, stateless, fundamentalist Al Qaeda" or with the Taliban, "who want to return Afghanistan to the seventh century." Nor are the Taliban like Iran, or Iran like Saudi Arabia.

A second problem with this model is that none of the Middle Eastern states mentioned whether theocratic or secular, nor the paramilitary groups described as terrorist, have any resemblance to the classical fascist regimes of Mussolini, Hitler, Franco, Pinochet, and others which took place in countries with capitalist economies and previous experience of democracy. The historical fascist regimes were secular and modern, not motivated by religion. Daniel Benjamin, a security expert at the Center for Strategic and International Studies, says that "Islamofascism" is a meaningless term. "There is no sense in which jihadists embrace fascist ideology as it was developed by Mussolini or anyone else who was associated with the term."

There are less muddling words to use. Wikipedia says that *Islamist* is a more commonly used term to describe politicized movements in Islam that seek to put Sharia law in place in Muslim countries. Violent groups are called militant Islamism.

Andrew Bosworth reminds people that the term "Islamo-Fascism" is historically inaccurate and that "the main ingredients of classical fascism—1) monopoly capitalism; 2) erosion of democracy; and 3) militant nationalism—are coming together in the United States like a Perfect Storm."

Part VI: Food for Thought

Chapter 24:   You Can't Get There from Here
(Popular Fallacies and Bad Arguments)

"Contrariwise," continued Tweedledee, "if it was so, it might be; and if it were so, it would be: but as it isn't, it ain't. That's Logic."
Lewis Carroll, *Through the Looking-Glass*

Our chapter title comes from the old joke about a Vermonter's answer to a tourist asking directions. Here it refers to the fact that you can't get to the truth by using fallacies and fraudulent arguments. Bad arguments are so ancient that many of them have Latin names (although the Greeks discovered them first). Thousands of years later, they are still alive and kicking. However, if you can identify fallacious arguments, you can combat them.

A fallacy is an error in reasoning. We will not be concerned here with formal fallacies, classical logic, syllogisms, and deductive arguments in which the premises provide (or should provide) complete support for the conclusion. Instead, our focus is on the sorts of informal fallacies, bad arguments, and just plain dirty tricks that are in popular use, especially in our public life. We use these bad arguments to defend our egos, prejudices, ideologies, and personal interests.

Not precisely a fallacy, the constant use of loaded language or emotional arguments tends to obscure the logic. One example of loaded language and exaggeration is the argument that to criticize a war in which your nation has engaged "gives aid and comfort to the enemy." If one may not criticize a war or the conduct of it without accusations of treason, then freedom of speech is a meaningless right.

The following list describes thirty-one bad arguments or bad styles of arguing.

1. **Asserting without evidence.** The Latin phrase that applies is *Ipse dixit,* which means, 'he himself said it.' Constantly asserting opinions without any supporting facts is usually the person's habit of argumentation. Either the individual does not know any better or else has the egotistic notion that he or she knows it all. Ask the dogmatic one, what is your evidence? You may need to ask this more than once.

2. *Ad hominem* or attacking the person rather than his argument. This often consists of labeling or name-calling. Another form of *ad hominem* is bringing up personal information about your opponent when it is irrelevant to the ideas he is putting forth. For instance, if he is arguing with you about nuclear disarmament, it is irrelevant that he has been twice divorced, or dropped out of college, or once filed for bankruptcy. However, if he set herself up as an expert on marriage, college, or financial management, the information would be relevant to establishing his expertise.

    After the U.S. election in November 2006, when it became clear that California Representative Nancy Pelosi would become the new Speaker of the House, conservative columnist George Will called her "the most left-wing speaker in U.S. history." The term 'left-wing' connotes an orientation left of liberal, but Will and others using this talking point did not support it with any evidence regarding Pelosi's actual positions on issues.

Another common ploy of *ad hominem* is to impugn the other person's motives. On a conservative blog, several posters repeated an argument that those scientists who warned about global warming made money or gained publicity from doing so. Accusers never gave any evidence. They did not spell out who would be funding global warming research when the U.S. government did not want to hear about it, or why climate scientists in contrast to most scientists were publicity-seekers.

3. **Abuse** may consist of shouting the other person down. Other forms of abuse are constantly interrupting, withdrawing attention and refusing to listen, or needling the other person. Sometimes it is just an unrelentingly hostile tone of voice. Of course abuse is something up with which you should not put.

4. **Poisoning the Well.** This tactic is used to discredit anything a person may say later by presenting unfavorable information about him or her ahead of time. "I doubt my opponent will have anything to add, since he has followed the party line on this issue for 25 years."

5. **Either/or,** or Excluded Middle. We mentioned this very common fallacy in the section about dualism. The person assumes that there is no ground between two extremes.

6. **Bad analogy.** We constantly use analogies. They are very useful, but we must be careful not to mistake similarity for equivalence. For instance, the human body is not really a machine and the human mind is not exactly like a computer. Personalizing (described earlier) is often a false analogy, for example, treating nations as if they were equivalent to individuals. (Among the differences, nations can mint their own money, they can stay in debt indefinitely, and they can call up armies!)

7. **Argument from authority**. First, the speaker may claim to be the most expert person in the room, implying that the audience should trust his every word. However, we need evidence of his expertise, and as we have seen, even experts disagree.

   Secondly, the speaker may appeal to anonymous authority, as in "Scientists say…" However, there is no way to verify this. Even the appeal to a known authority is hard to verify. The speaker should at least provide an exact quote and some context for it. Thirdly, the speaker may appeal to a false authority, somebody who is outside his field of expertise. Lawyers are not often experts in science, nor are scientists experts in law.

8. **Appeal to ignorance,** or *Ad Ignorantiam***.** One claims that something is true only because no one has proved it false. Or else one may claim that it is false because no one has yet proved it true. However, by itself, "absence of evidence is not evidence of absence." It cannot be proved that the Universe was designed by an Intelligent Creator, but that does not prove that it was not. On the other hand, it cannot be proved that it was *not* designed by an Intelligent Creator—but that doesn't prove that it was. Commonly someone may say or imply, "Well, since *I* never heard of anything like that, it couldn't be true." The person assumes that she is globally knowledgeable therefore anything out of her range of information could not exist.

9. **Slippery Slope or Camel's Nose** is sometimes a valid argument, sometimes a fallacious one. The idea is, once you start sliding down it is hard to stop. In the case of a camel trying to get into the tent—if you let in his nose, it will be hard to keep the rest of him out. In other words, any change leads to greater change. But moderate positions do not always lead to extremes. People often use this argument against any kind of compromise or diplomatic concession. "If you give them an inch, they'll take a mile." On the other hand, in some situations, once a precedent is established, it does make similar events more likely. In the field of law, a precedent adds to authority.

10 *Reductio ad absurdum* is carrying your opponent's argument to a ridiculous extreme. "So you want to raise the minimum wage to $8/hour—why not raise it to $100/hour, while you're at it." It is a fallacy only when it misrepresents the other person's argument and forces an absurd conclusion that does not use the actual train of reasoning of the original argument.

11 *Post hoc, ergo propter hoc* *literally* means "Afterward, therefore because of." A happened after B, therefore B must have caused A. The *post hoc* fallacy is often used by those who would blame all the current ills of society on certain past legislation, court verdicts, or presidents. *Post hoc* often obsesses about monoistic causes. Satirizing this tendency to look for single causes in the past, an essay purported to prove the cause of modern crime was increased road building—because without roads, criminals could not get to the crime scene. Another satirical theory is that since all drug addicts began life drinking milk, drinking milk causes drug addiction.

12 **Confusing correlation with causation.** Just because two events or situations occur about the same time, does not mean that one of them causes the other or even that they are related. The fact that there are floods in China at the same time I come down with the flu means nothing. Repeated strong correlations point to some kind of relationship, but not necessarily direct causation—several correlated events may be caused by something else.

13 **Guilt by Association.** This is a favorite of demagogues including Senator Joseph McCarthy. "I wouldn't trust him because his cousin was convicted of theft and served a prison term." "He once belonged to an organization that appeared on a list with a Communist organization."

14 **Weasel Words** are words or short phrases often used in business documents and politics that tend to confuse the reader and to stop his emotional involvement. Theodore Roosevelt spoke out against weasel words in 1916: "You can have universal training or you can have voluntary training, but when you use the word 'voluntary' to qualify the word 'universal,' you are using a weasel word. It has sucked all the meaning out of 'universal'" [as the weasel sucks the contents of eggs]. Peter Donnelly notes that in the phrase "potential danger" the word 'potential' only weakens the term, and he complains about "the careless discarding of words that are clear and truthful in favor of those that obfuscate and deceive." See the comic strip "Dilbert" for humorous comment on many weasel words used in business.

15 **Equivocation.** This is the confusion, often deliberate, between two different meanings or connotations of the same word. For instance, since the 9/11 attacks many conservative columnists and other pundits have confused two meanings of 'understanding' by insisting that any attempt to understand the motives of Osama bin laden or other opponents of the United states is the same thing as excusing them. But the first dictionary meaning of 'understanding' has to do with comprehending, mental grasp, and "the power to make experience intelligible by applying concepts or categories." Another meaning of the word is sympathy and tolerance. Obviously, the Pentagon and policy makers seek mental understanding of their enemy in the first sense, and so should citizens.

16 **Straw Man.** In this ploy, a person sets up a phony argument that his opponent never suggested, and then knocks it down. He is arguing against his own creation, a misrepresentation of the other person's argument. The Straw man distraction might fool someone outside of the two who are arguing, if the third party is not familiar with the original argument. This distortion is common in political propaganda. For instance, someone asks for a phased withdrawal from the war in Iraq but political opponents answer as if he suggested an immediate withdrawal.

17 *Non sequitur,* "it does not follow." The logic falls down. All the reasons you give to support your conclusion are irrelevant. There is a comic strip with this name which sometimes presents actual *non sequiturs*, usually in the form of justifications by a little girl trying to manipulate her father. *Non sequiturs* are not always so trivial. The idea that if you criticize the Israeli government you are expressing anti-Semitism is an example of this fallacy. If criticizing the Israeli government is anti-Semitic, a number of Jewish Israelis who oppose some of their government's policies are also anti-Semites.

18 **Loaded Question.** The classic loaded question is of course "Have you stopped beating your wife? Yes or no." The question presupposes something is true that the respondent never agreed to. Watch out for any insistence to answer only yes or no. There is also an implied form of the loaded question as in the following example: During Detroit's Mayoral race in 2005, incumbent Mayor Kwame Kilpatrick said: "I have never been arrested. I have never come in contact with anybody in the criminal justice process, me or my family. And I just want to know, can Mr. Hendrix say the same thing?" The loaded question is particularly unfair if asked in a public context such as an editorial or broadcast that does not allow the respondent to answer.

19 **Red Herring (also known as Smoke Screen).** This is a distraction tactic. The arguer presents an irrelevant topic to divert attention away from the issue under discussion. He 'wins' the argument by abandoning the subject of discussion. In political life, people use certain issues or non-issues such as gay marriage to divert attention from those more relevant to the public such as war or economic conditions.

20 Hasty Generalization, Spotlight, Biased Sample, and Misleading Vividness are four related fallacies described by Labossiere. We earlier described **Hasty Generalization** as assuming too quickly that there is a pattern, based on only a few cases. In **Spotlight**, a person assumes that anything receiving a lot of coverage in the media is typical or represents the whole population.

21 **Biased Sample** refers to the fact that in making a generalization or survey, a minimum number of cases are necessary for the results to be statistically valid. A nation-wide poll of 300 people would not be valid because the number is too small to represent a cross-section of 300 million people. (However, Marilyn Vos Savant claims in her column that a representative sampling of 1500 is adequate for a national poll.)

22 The **Misleading Vividness** fallacy occurs when a few, very dramatic events outweigh a significant amount of statistical and other evidence. This accounts for the fact that people are more afraid of terrorists than of automobile accidents or of smoking tobacco that cause far more deaths.

23 **Misunderstanding of Statistics.** President Eisenhower supposedly expressed alarm after finding out that half of American citizens have below average intelligence. (His political enemies may have made this up.) This reminds one of Garrison Keillor's tagline about Lake Wobegon, where "all the children are above average." Of course, some can and often will present statistics in misleading ways so that people misunderstand them.

24 **Two Wrongs Make a Right.** According to this fallacy, one is justified in committing an action against another person because one claims that the other person would do the same thing to oneself. One may note that preemptive war relates to this fallacy.

25 **Appeal to Popularity,** or *Ad Populum***.** This is the idea that a claim is true because most people view it favorably. This fallacy obviously fits in with the strong desire of human beings to conform to others—the 'herd instinct.' It is hard to disagree with the majority. *Ad*

Populum is common in advertising and propaganda. It is very similar to the **Bandwagon** effect, which ignores truth and more explicitly appeals to the desire to conform—"Get on the bandwagon along with the rest of us!" If 'everybody' is using a product or voting for a candidate, then you will want to also. (This could be a meme for propagating memes.)

26 **Peer Pressure** is the negative form of *Ad Populum,* in which the threat of rejection by one's peer-group takes the place of evidence. You may have been in the difficult position of being a minority of one, or the holdout juror. In many cases, a person is not only intimidated but actually changes his mind when it seems that everybody around him disagrees with him.

27 **Selecting facts**—counting hits, forgetting misses. Shipwrecked sailors are always rescued, if you ignore the ones who aren't.

28 **Inconsistency**. One cannot fully compare short-term and long-term, or small-scale and large-scale. Short-term profits based on non-renewable resources obviously are not the same as long-term profits while resources are depleted. What works on the small-scale will not necessarily work on the large-scale and the reverse is also true.
Another inconsistency is comparing the worst aspect of one thing with the ideal aspect of another thing. For example, you might compare the weakest player on the first team with the strongest player on the second team. Or you compare the worst aspects of capitalism with the best aspects of socialism (or vice versa).

29 **Begging the Question, Circular Argument**, or **Vicious Circle** is assuming an answer in the way you phrase the question. "Surely he must be guilty, or else why would the police arrest him?" Begging the question need not be an actual question; for instance, look at the common argument against critics of a war, that they do not support the troops. One can support the troops in several ways, for instance by prodding Congress to make sure that they get proper equipment and medical care, by keeping a job open for them, or by sending letters and care packages directly to individuals. However, the argument simply assumes that supporting the troops is the same thing as supporting the war.

30 **Quoting out of Context.** It is usually quite easy to find a few phrases or sentences in a speech or article that seem to say something different from what the speaker intended. Sometimes it is the opposite of what the speaker intended. For instance: "I would say that he is the most cheerful person I ever met" was originally "If I didn't know better, *I would say that he is the most cheerful person I ever met*. But I have seen him in the depths of his depressions." Quoting out of context and even actual misquoting are very widespread in U.S. political controversies. This can take the form of edited videos, such as those associated with the conservative blogger Andrew Breitbart.

31 **Sunk-cost fallacy.** This is the idea that you already have so much invested in a hopeless project that you cannot stop now. You are afraid to lose all that you have already invested, but the relevant consideration is whether there is any hope for success in the future from this investment. If not, it would be more rational to cut your losses and withdraw. People also call this the Concorde fallacy because France and England kept investing in the Concorde supersonic transport jet long after it was clear that it was not going to be profitable.

There are even more named fallacies, but these are most of the major ones.

Chapter 25: Literacies

To educate a man is to unfit him to be a slave.
> Frederick Douglass, 1818-1895, escaped slave, author, and editor

Critical thinking is a method developed over the last 2,500 years to help individuals clarify their thoughts and improve their reasoning abilities. Not limited to intellectuals, scientists, and scholars, it is available to anyone who will learn and practice it. Compare this to athletic prowess. There are few athletes at the level of Lance Armstrong and Tiger Woods, but just about anyone can improve his or her physical fitness. Similarly, there are few thinkers at the level of Buckminster Fuller or Noam Chomsky, but all varieties of people can improve their mental fitness. The habit of thinking critically is not only essential for good citizenship, it also helps one survive and succeed in daily life.

Good thinking requires an *infrastructure* of literacy, access to reliable information, and institutions that encourage discussion and participation.

In this chapter we review the decline in reading in this country, possible causes of the decline, and possible remedies. There are also other kinds of literacy, including numeracy, historical literacy, geographical literacy, and scientific literacy.

Then we consider general attitudes in the United States towards thinking and towards intellectuals. A strain of anti-intellectualism has been exploited by politicians for a number of years. Next, we look at ways to overcome various psychological blocks that prevent individuals from developing their minds and joining discussions, and ways to cultivate the habit of reason. We then survey the history of critical thinking, some definitions, and some basic principles of this skill.

See Jane and Spot

Average number of words in the written vocabulary of a 6-14-year-old child in 1945: 25,000
Average number today: 10,000
> Harper's Index, *Harper's Magazine*, August 2000

To start with, many of us do not read very well. There is a tendency to think that once you learn to read, that is the end of it, although learning to read is actually a lifelong process.

My family members were all readers, so entering college I supposed that I had nothing more to learn in that area. However, my university focused on the Great Books, and I recall an hour or so poring over just one page written by that great, medieval philosopher-theologian, Thomas Aquinas. Without context, I never did understand what he was saying. The same thing could happen to anyone reading in an unfamiliar field.

A great deal of college learning has to do with the particular vocabulary, concepts, and methods of each discipline. That gives you the context which is an important part of learning to read. Most of us, whether college-educated or not, continue to learn new words and concepts throughout life. My grandmother, with a sixth-grade education, kept popping up with new words she had picked up from her college-student grandchildren. How could we not keep learning, in a world that changes so fast?

Most incoming college students have not read much outside of school, especially not much non-fiction. They often make comprehension errors such as thinking that an author's paraphrase of somebody else's ideas is his own opinion. They may get lost in complex sentences, unfamiliar because their high school textbooks used a simple style with short sentences, bold headings, and topic words to make comprehension as easy as possible.

College freshmen may have a small reading vocabulary. The complexity and subtleties of the subject matter itself may confuse them, if they are used to predigested material. They need practice in how to use ideas, not just to memorize them for the next test. Discussion is a good way to try on ideas, but many contemporary college students seem to be allergic to class discussions, and who knows if back at the dorm students still have long bull-sessions about the nature of the universe and everything.

According to a recent study of literacy among college students and graduates, the national reading situation is quite dire. Early in January 2006, the U.S. government released the findings of a study conducted by the National Center for Education Statistics. The Center reported that sixty-nine percent of college graduates could not read a complex book and extrapolate from it, that is to say, they could not apply what they had read to some other situation; they could not use the ideas they read. These were people who had graduated after four years of college.

Even among graduate students, the report classified only forty-one percent as "proficient" in reading prose such as prescription labels or comparing the viewpoints in two newspaper editorials. One would have hoped that the vast majority of high school graduates, let alone college graduates, could compare two editorial viewpoints, since that ability relates closely to the political skills needed for citizenship.

In fact, college reading abilities had declined noticeably since a similar study in 1992. Even so, the average literacy of college students is much higher than that of adults generally. Only thirteen percent of adults could perform "complex tasks" such as interpreting a table about exercise and blood pressure, comparing credit card offers with different interest rates, or understanding the arguments of newspaper editorials.

If most people cannot follow issues in print, they are unlikely to be able to do so orally either. This information suggests that a small fraction of the American public (perhaps less than twenty percent? This is just a guess) do the heavy lifting of actually trying to understand and discuss social, political, and environmental issues in a rational way. The other eighty plus percent may choose up sides and pick somebody to do the thinking for them.

Presumably, those in the latter group receive most of their information and opinions from visual images and the spoken word, from television and radio talk shows, their neighbors, friends, co-workers, and their minister's Sunday sermon. However, such sources are by nature biased and partial, difficult to document or to remember without distortion, and they do not allow time or space to reflect. In addition, people who are dependent mainly on fleeting images and oral sources tend to select those sources that agree with what they already believe.

Now in a nation as large as ours, twenty percent of adults would translate to about forty-five million people who read well enough to follow an argument. That does not guarantee that they are critical thinkers as well. And it leaves one hundred eighty million people who can hardly think for themselves. What kind of democracy can result from this? What can we do about it?

John Gatto, an award-winning teacher who strongly criticizes the American system of education, claims that this country's population used to be more literate, before compulsory mass education.

There are some studies that suggest literacy at the time of the American Revolution, at least for non-slaves on the eastern seaboard, was close to total. Thomas Paine's *Common Sense* sold 600,000 copies to a population of three million, twenty percent of whom were slaves and fifty percent indentured servants. [*Note that would be the equivalent of 60 million copies sold today! The American Revolution might not have occurred without this book.*]

I strongly suspect that most of our national reading deficiency is because television and videogames and electronic gadgets have replaced reading. You have to read in order to improve your reading: as they say, use it or lose it.

Even with games and the Internet, television is still the electronic monster in the room. The problem is not only the content of television shows but also the nature of the human/machine interface. Jerry Mander carefully researched the negative physical and cognitive effects of television viewing a few decades ago and concluded:

Television seems to be addictive. Because of the way the visual signal is processed in the mind, it inhibits cognitive processes. Television qualifies more as an instrument of brain-washing, sleep induction and/or hypnosis than anything that stimulates conscious learning processes. [It] is a form of sense-deprivation, causing disorientation and confusion. It leaves viewers less able to tell the real from the not-real, the internal from the external, the personally experienced from the externally planted. It disorients a sense of time, place, history, and nature.

Mander interviewed Dr. Erik Peper, a widely published researcher on brainwave testing, who said that people watching television record a decrease in the faster beta waves and an increase in slower alpha waves. Television seems to suppress active attention. Peper said, "When they are watching television they're being trained not to react….the information goes in, but we don't react to it….so later on, you're doing things without knowing why you're doing them or where they came from." Reading produces a much higher amount of beta waves.

Another brainwave researcher, Herbert Krugman, compared the modes of response to television and print. "The response to print may be fairly described as active [while] the response to television may be fairly described as passive….Television is a communication medium that effortlessly transmits huge quantities of information not thought about at the time of exposure." Does that sound like brainwashing to you? It does to me.

The grocery store racks hold a variety of magazines, and there are free libraries in every city and town, filled with books and friendly librarians, but something has gone wrong. People may know how to read, but they are not reading. Many young people are uninterested in reading; they never got into the habit of reading for fun. Perhaps some of the eighty percent of adults who are not proficient in reading facts or ideas can follow a simple story, such as a romance novel or spy thriller, or even a political or religious tract with which they totally agree. This is a start but still does not do much for the survival of the species.

Various commentators list possible causes contributing to the decline in reading that include early elementary classes that are too large; lack of emphasis on phonics; problems with teacher's education, qualifications, working conditions, and/or pay; social promotion; students who work too many hours at jobs; and schools and parents who overemphasize sports at the expense of academics. But criticizing public education still does not explain why adults who can read are not reading.

Leaving aside public education, contributing causes may include the longer hours that adults are working, especially women whose time and energy are stretched by multiple roles. These

busy and exhausted adults may not be able to provide a role model of reading nor encourage their children to read. However, my unscientific hunch is that the inroads of television and videogames accounts for at least two-thirds of the decline, and there is where we must begin. If it were my young children, I would not let them near a television set until they were school age and preferably over eight, when children begin to distinguish fact from fantasy. Of course, it would be best to have agreements with the neighbors who still have these attractive nuisances blaring day and night.

We adults might go on a television diet. If you currently watch three hours a day, try two. If you watch one hour a day, see if you could get by with three days a week. And so on. Instead of channel surfing or leaving the set going to "see what's on," pick out a few favorite programs from a schedule ahead of time. Try substituting from PBS, which not only carries some good programs, but also saves you from the constant commercials. Find other ways to wind down from work at night. Your dream images may improve, too.

Families that have weaned themselves from TV dependence report that they are having more fun, going places together, playing board games, and enjoying real conversations with each other. It is not named the idiot-box for nothing. Keeping our television sets and electronic games turned off most of the time could go far to cure two great social ills at once: the obesity epidemic and creeping fat-headedness.

"Read, Read Read. Do, Do, Do." (Louis L'Amour, well-known writer of westerns): As L'Amour suggests, there is no conflict between reading and doing. Some people make such a false dichotomy and look down on readers as escapists or 'nerds' but this is a high-schoolish idea that adults should leave behind. Famous bookworms include Malcolm X, who educated and transformed himself from a prison library. "The ability to read awoke inside me some long dormant craving to be mentally alive."

There are ways to get everybody reading again without playing the blame-game against our public school system. Let us start with the adults, because if the adults are reading, the children will get interested too. Many adults are functionally illiterate, with quite limited reading skills. How many? That depends on how you define that term. By one estimate 27 million or 9 percent of the U.S. population are functionally illiterate, a similar percent in France, and 17 percent in Canada. A 2006 article in the Daily Telegraph claims that one in six (16 percent) of British adults lack the literacy skills of an eleven-year-old. In a wider interpretation of the term, based on the National Center for Education Statistics above, the 87 percent of U.S. adults who cannot follow newspaper editorials or compare two competing credit-card offers might be regarded as functionally illiterate.

Next we consider those who are for all purposes illiterate, at least in English, many of whom are Spanish-speaking. Others are older adults from poor backgrounds. Last, we say a few words about the children.

Our first focus is adults who were once reasonably proficient readers but are out of practice. They can read but do not read very much. The rule of thumb here is, if you become aware of a skill you are not using, then use it every chance you can.

Steve Leveen promotes one way to turn people into "born-again readers." He discovered that listening to unabridged audiobooks changed his own life, getting him newly interested in ideas. Listening to books also brought him back to reading in the traditional way. People who are good candidates to 'read' books on tape are busy folks who spend a lot of time on the road, including

commuters, long-haul truckers and letter carriers. Leveen claims that such listening can even calm one against road rage.

Steve Allen suggests that those who commute by train or bus use a portable cassette player with earphones. Audio-reading could be something to do at the Laundromat instead of watching the clothes go round. There are ways to rig up a system for listening while a person washes dishes or uses exercise equipment or irons clothes (if anybody still does that).

Another way to get back into reading is to join or organize a book club. Such reading groups have a venerable history—they first began in colonial America, very likely contributing to the high level of literacy around the time of the American Revolution. In the early 1800s women's "reading parties" were quite popular. The custom persisted. By Leveen's estimate there may be 750,000 book groups currently active in the United States.

Marginal Readers: In contrast to those who know how to read reasonably well but are out of the habit of reading for pleasure and edification—should we call them Lapsed Readers?—others are functionally illiterate. They can barely read and write, not well enough to function effectively in a modern society that depends so heavily on written text. As mentioned above, this group may comprise anything from about 10 percent to 80 percent of the population, depending on one's definition. Some of the functionally illiterate may be dyslexic, a condition affecting 10 to 15 percent of the population. This vision problem was often unrecognized or untreated in the past, with dyslexic individuals labeled "lazy" or "dumb." It may be that many are still not being helped.

Poor literacy skills affect the economy. By one report, 75 percent of Fortune 500 companies have remedial training for workers; by another study, businesses lose billions of dollars yearly because of low productivity, errors, and accidents due to functional illiteracy. From a more personal point of view, one may suffer greatly from the reading mistakes of those confused about traffic signs or who incorrectly fill prescriptions, and from our own reading mistakes in misunderstanding a contract or taking medicine.

One estimate is that in the early 2000s, about 60 percent of adults in U.S. prisons were functionally illiterate, and 85 percent of juvenile offenders had problems with reading, writing, and basic arithmetic. UNESCO attributes functional illiteracy to the high rate of high school drop-outs in some industrialized countries, especially among ethnic minorities and other disadvantaged groups.

A plan put forward by Jonathan Kozol over 20 years ago (in *Illiterate America*) is still worth considering. Based on the experiences of Cuba and Nicaragua in mobilizing the literate to teach the illiterate, Kozol offered a plan for doing the same thing here with five million teachers, some volunteer and some paid, drawn from retired people, students, and literate poor people. The idea is not only to provide the illiterate with job-training and work-readiness, but also self-confidence and empowerment.

Then there are people who may be literate in a foreign language but not in English. A library in Georgia stopped buying adult books in Spanish after a few residents complained, but the president-elect of the American Library Association says that libraries across the country are increasingly buying best-sellers in other languages because they attract patrons to the library and make them more likely to get English instruction. Thus, the punitive attitude may be counter-productive, *if* the goal is to spread English literacy.

Other Literacies

> *Today, American adults know less about biology than their counterparts 200 years ago.*
> Elizabeth Gettelman, managing editor of *Mother Jones*

Simply being able to read general magazines or short novels is one sort of literacy, but there are other important kinds. *Numeracy* is the ability to understand and deal with numbers. For instance, most of us get a glazed look at constantly hearing large numbers in the billions or trillions as the national debt, or the cost of the Iraq War, or the annual income of Wal-Mart or something of the sort. I like to cut some of these numbers down to size by dividing them by either 300,000,000 (roughly the number of people in the United States) or else 7,000,000,000 (the current number of people in the world). That way I know how much the Iraq War is costing me or (indirectly) costing some peasant who lives on less than $1 a day. I can see how much each of my grandsons owes on the national debt. It is a start, anyway.

Most of the literacies depend on acquaintance with basic concepts of a particular field. There is, for instance, *scientific literacy*. In a culture so based on science and technology, and in such constant change, it is imperative that just about all of us know something about science. Elizabeth Gettelman (paraphrasing Natalie Angier, whose book she is reviewing) says, "Debates about stem cells, global warming, and alternative energy might be less contentious if the scientific issues behind them were better understood." That is undoubtedly true although overly optimistic, since propaganda based on economic interest or religious ideology has deliberately muddled the scientific understanding in these very cases.

Also, some other issues such as genome genetic engineering or toxic chemicals or nanotech might be *more* contentious if people understood them better—or thought about them at all. But contentious discussion, if it is informed debate, is all to the good. It is uninformed and biased debate that takes us nowhere or someplace even worse.

The concepts of evolution underlie the whole field of biology, and it is a tragedy that those who read the Bible literally have already influenced public schools in many places to avoid teaching evolution. A growing number of people don't know what evolution is all about, so it is easy for them to be against it. In addition to the literalist doctrine, many have the idea (expressed in letters to the editor) that by subscribing to evolution, people believe they are "nothing but animals," and that this belief destroys human values. But we can be animals of a very special and highly developed sort; we don't have to be 'nothing but' animals. Those of many mainstream Christian beliefs, who do not read the Bible literally, accept that God could manifest through evolution.

Such beliefs opposing evolutionary theory also go back to old assumptions that animals lack intelligence, culture, and emotions. Ironically, many orthodox scientists discount animals in a way that reminds one of Descartes' belief that animals are automatons. They resist the idea that animals have 'higher' abilities and are anything at all like ourselves. But I would be happy if all my friends and acquaintances were as empathic as porpoises, as forthright as Koko the gorilla, and as loyal and unconditionally loving as dogs.

Scientific literacy would above all include understanding the scientific method, one of the two main ways that humans have devised to overcome individual limitations in thinking. It would also include the basic concepts of scientific fields especially those most related to daily life and to human crises in progress, such as energy issues. In general, people are much more knowledgeable about the latest technologies than the basic principles that make them possible.

Another kind of literacy is *bioregional literacy*. The idea is to know something about the place where you live. Here a lot of us urbanites undoubtedly fall far behind our counterparts of 200 years ago, most of whom were farmers in close touch with nature. Do you know the average rainfall in your area? When are the first and last killing frosts? What kinds of animals are native there? What kinds of trees? What are the main bodies of water, and how do they flow to each other (watersheds)? What are the main crops? Avid gardeners and bird-watchers may have a headstart on such knowledge.

Geographical literacy is basic knowledge of the rest of the world's bioregions, as well as of the populations that live there. We know relatively little about other people in other places and in fact rarely think about them except when a disaster hits them or they somehow get in the way of what the United States power elite wants. One way to get a lot of geographical information at once is to use interactive charts that compare countries on various scales.

Historical literacy has to do not so much with the kings and battles emphasized in school (such things are easy to test), but rather with broader trends, the history of 99 percent of mankind, which does repeat itself if people pay no attention to it.

Last, *cultural literacy* includes acquaintance with our own culture, its classic art, music, and literature, including folk songs and jazz, its famous people, well-known sayings, landmarks, and so on. This provides a community of knowledge that unifies people of one culture and helps them to communicate with each other. To a great extent in the United States today this function has been taken over by pop culture, celebrities, sports, the news of the day, and consumerism. These more ephemeral bits of knowledge, that often appeal to specific subcultures and demographics, do not unify a culture at a very deep level.

The felt loss of an authentic, unifying culture drives some cultural conservatives to blame liberals or "multiculturalism." But conservatives and liberals both lose when the culture is trivialized and commodified. Conservatives and liberals share a broader culture, and there are alternatives better suited to a diverse society than insisting that everybody speak English or that the public schools propagate Christian teachings.

One special aspect of cultural literacy has to do with a children's culture that has lasted for numerous generations. Games such as tag or hopscotch can be recognized in Brueghel's paintings from the sixteenth century. Children taught each other the games; older taught younger ones. There are classic children's books and illustrations with which most children were once familiar. Common nursery rhymes often refer to actual events in the 18th or 19th centuries and have been repeated for many generations since—but less so today, when many mothers work outside the home and television or videos may replace storybooks and nursery rhymes in daycare centers.

Now suburbia lacks sidewalks and parents worry about various dangers outside, so that many children stay indoors or play organized sports, and never learn the old games. Children's classics are replaced by books based on characters from animated movies, and everything for children from clothes to bedding to toys seems to be in ugly cartoon-style. Most day care facilities don't provide the individual attention that used to include nursery rhymes and lullabies. This new cultural illiteracy constricts children's mental horizons from the start. Videos and other canned, electronic entertainment cannot replace an old-fashioned childhood.

Chapter 26: Critical Thinking

A simple man believes every word he hears; a clever man understands the need for proof.
Proverbs 14, 15 (NEB)

What, who, and where are intellectuals? Are they nerds, geeks, and sissies? Do they solely inhabit the East and West coasts except for various ivory towers in between? On the other hand, who are anti-intellectuals, and why? After all, everybody thinks—and needs to—so why would anybody be against that?

Ignorabimus: The Roman word *ignorabimus* means: "We shall be ignorant." It does seem that some folks deliberately choose to be ignorant (and often opinionated at the same time). As the saying goes, "Don't bother me with the facts; my mind is made up."

Many observers of the American scene have commented that there seems to be a strain of anti-intellectualism running through our history. It did not begin with Henry Ford's statement that "History is bunk" and it certainly did not end there. Some of this anti-intellectualism links with an opposition to 'Eastern elites,' connected with sectionalist competition that has lasted at least 200 years. The Republican "Southern Strategy" that began under Nixon manipulates this sectional anti-elitism/intellectualism.

First, however, we need to define our terms. People have differing notions about intellectuals and who they are. The dictionary says an intellectual is a person given to study, reflection, and speculation; or one who engages in activity requiring creative use of the intellect. Both of these definitions seem to refer to people who are interested in ideas, who do a lot of thinking, and who make use of their minds. Ideally, intellectuals take ideas seriously and care about the truth.

Many people assume that intellectuals are academics and professionals. That is not my definition, as I have known a number of self-educated people whom I would consider intellectuals. In some parts of the country, notably the industrialized Midwest, there is a recurring type known as the working class intellectual. I count my parents among this group, although my father did finish college in later life and became a professional. I have also known academics and professionals whom I would *not* call intellectuals, because they were not interested in ideas in general, that is, they were not in the habit of applying their intelligence outside of their own specialized field.

Writer Albert Camus said "An intellectual is someone whose mind watches itself." This suggests that an intellectual is concerned with *how* she thinks, with being as objective, fair, and reasonable as possible, in other words, a critical thinker.

Those Americans who are both anti-intellectual and politically conservative often assert that intellectuals are elitists, snobs, liberals, and live mainly on the country's coasts. However, there are intellectuals in all fifty states including many in the South; some of them are political conservatives; and words such as "elitist" and "snobs" are pejoratives for the purpose of political propaganda.

Spiro Agnew, Vice-President under Richard Nixon, helped anti-intellectualism along by calling intellectuals "nattering nabobs of negativism." This was partly a slam at Adlai Stevenson, twice a presidential candidate and one of the most intelligent and learned men ever to run for that position. However, Agnew knew, and many politicians since him have known that they could appeal to a segment of the public that distrusts intellectuals. Certainly this dislike was exploited

during the presidential campaign in 2000, when Al Gore was framed as an elitist out of touch with ordinary people. He had written a best-selling book—about the environment, of all things.

In many other countries, the man (or woman) of letters may be a candidate for high elective office, diplomatic appointment, or cabinet-level positions. For example, after the former Czechoslovakia won its freedom, her first president was Vaclav Havel, a famous playwright. It is hard to imagine a similar situation in the United States, where we do not honor intellectuals as public leaders. In fact, we have had the national role models of two unusually ignorant presidents and a vice president during eighteen of the last twenty-six years (President Ronald Reagan, Vice-President Dan Quayle, and President George W. Bush). While the Forrest Gump character in the film of the same name had a natural wisdom along with his limited intellectual capacities, I still don't think he is a good model for the 'leader of the free world.'

In the 2004 presidential campaign, Republican propagandists again manipulated this strain of anti-intellectualism, not so much against Kerry himself but against his followers, framed as liberal elites in the Northeast and California. This framing usually ignores "blue states" in the Midwest, because the combination of "liberal elites" and "Midwest" creates cognitive dissonance. The accusation of elitism has also been made against Obama because of his Ivy League education.

To understand this anti-intellectualism in terms of sectional differences requires a bit of history. The borderers who comprised the largest group of English immigrants to the colonies in the eighteenth century came from an area in northern England and lowland Scotland that had experienced constant warfare over seven centuries and had developed a patriarchal, warrior culture adapted to those circumstances. They settled in the highlands and backwoods areas of the original colonies and eventually their culture spread throughout the southern states and west to southern California.

According to historian David Hackett Fischer in *Albion's Seed*, many aspects of the borderer culture persisted through the move to America and also through the two centuries since. Fischer says this is also true of the three other early groups, who came from different parts of Britain and were quite different in culture and religion—the New England Puritans, the Pennsylvania Quakers, and the Virginia Cavaliers. In fact, none of the four much liked any of the others. It was only when Great Britain tried to take over the reins, micro-manage colonial governments, and forcibly return everybody to the Church of England, that the shared threat brought the four sections together in a mutual struggle for freedom.

Fischer suggests that the early sectionalism persists to this day, even despite all the added immigration of other ethnic groups (those claiming British heritage now comprise only about one-fifth of the population). I believe this sectionalism explains much about the 'red state-blue state' dichotomies. Here it might be enough to say that the New England colonies and those they influenced westward (such as Ohio, Michigan, Wisconsin, the northern plains, and the Pacific northwest) had and have the most years of schooling of the four groups, while the original borderer areas and the areas they settled had and have the least. They are respectively also the richest and poorest sections.

These two sections seem to have retained the most pronounced of the ancient antagonisms, primarily hostility from the Southern Highlands toward the Northern Tier ("damn Yankees"). Much of it dates back to old economic conflicts and to the Civil War. These antagonisms can easily be channeled by strategists into political anti-intellectualism, especially if northern-based candidates are well-educated and if they run on platforms emphasizing competence or long-range policy.

More directly, the culture that spread from the Southern Highlands is itself somewhat inhospitable to the intellectual life. Although members of this culture strongly value personal liberty and will fight hard for freedom, their intellectual style tends to be more authoritarian. Also, the leading religious denominations are Southern Baptist and other fundamentalist groups which pit Faith against Reason and which read the Bible 'literally' so that they are in competition with the sciences of biology and geology.

This borderer culture is very patriotic, and the teaching of history is often under fire from the kind of patriotism that will not brook any suggestion of past mistakes or national imperfections. In July 2006, the Florida legislature passed a measure that outlawed historical interpretation in public schools. The law states: "American history shall be viewed as factual, not as constructed [and] shall be viewed as knowable, teachable, and testable." One specific command in the law is to teach students about "the nature and importance of free enterprise to the United States economy."

Robert Jensen, a journalism professor at the University of Texas, points out that history is *always* constructed. Interpreting factual assertions about the past (after selecting which 'facts' to examine) is exactly what historians do. Jensen says that basic to the scientific revolution and the Enlightenment—"two movements that, to date, have not been repealed by the Florida Legislature"—is the idea that no one interpretation or theory is beyond challenge; all must be open to examination. Jensen says "As the gap between how Americans see themselves and how the world sees us grows, the instinct for many is to eliminate intellectual challenges at home." Jensen points out that the legislators undoubtedly had patriotism as motivation, but he adds:

> The irony is that such a law is precisely what one would expect in a totalitarian society, where governments claim the right to declare certain things to be true, no matter what the debates over evidence and interpretations. The preferred adjective in the United States for this is "Stalinist," a system to which U.S. policymakers were opposed during the Cold War. At least, that's what I learned in history class.

One possible contributor to this push-able button of anti-intellectualism is overly competitive attitudes at school. Some people assume that our schools do not encourage enough competition. However, younger children in particular learn more when they are self-motivated and when teaching stimulates their own curiosity. As a school librarian, I noticed that around the third grade, many children who had previously been excited and eager to learn now seemed to lose their curiosity, and some of them began to talk about disliking school. Real learning is not something that can you can accomplish by force or psychological pressure, or even the reward of gold stars.

Nor are schools assembly lines to produce finished products. Even at college level, students are not necessarily better educated because they read six books a week, and write more and more themes, and stay up to two a.m. studying. People need to assimilate what they learn and make it their own. There is a limit to what you can stuff in your head or into somebody else's head. The sort of approach mandated by the No Child Left Behind legislation encourages teaching to the test, and for the child, learning to the test. Learning by formulas is exactly the sort of thing that prevents him from being able to transfer his knowledge and skills to other situations.

By competing for grades and teacher recognition, children often learn to envy and resent the high achieving students ("curve-raisers," "nerds" "geeks") as well as to scorn and scapegoat the slowest learners. These childhood feelings often persist, and were in play during the political campaigns of Adlai Stevenson and Al Gore.

Unthinking: A number of social customs, beliefs, or persuasive techniques have the direct effect of reducing people's ability to think. I do not include actual brainwashing or interrogation methods, but only customs chosen more or less voluntarily, such as:

- Blind obedience to authority
- The idea that thinking is something that intellectuals do, not ordinary people like you and me
- Fears of looking dumb or of standing out in the crowd
- Being overwhelmed by to ego-motivated people who use their knowledge or intellectual status to try to make other people look dumb
- The notion that disagreeing with people intellectually is being disagreeable
- Euphemisms, glittering generalities, and doublethink, for if you get in the habit of listening to these, or assume that they actually mean something, they will eventually eat your brain.
- Ignoring contradictions, for instance, belief in Bible inerrancy is a kind of brainwashing since contradictions do exist in the Bible and you can find them if you look for them. If the public ignores contradictions in official stories, this further encourages leaders and media to treat the public like a bunch of sheep.
- Letting others do your thinking. Other people may be sources of information or of arguments for opinions, but nobody can make up your own mind except you.
- Faith versus Reason is a false dilemma, and leads people into an untenable position in which the only way to believe in God is to give up their (god-given) ability to think. No one should have to make this choice.
- The adolescent notion that learning and reading are not 'cool' is a self-destructive attitude especially widespread among urban black teens. If students realize that school is not the only place to learn and read, their resentments and rebellions focused on the school system need not extend to reading, and they wouldn't lose a basic means for self-realization and self-protection.

Qualities of Mind and Spirit: A surprisingly large number of words exist to describe positive mental qualities and attitudes. For instance, one can be *open-minded* and *observant,* have *foresight*, exhibit *commonsense*, show *resourcefulness*, display *insight*, develop *discrimination* and *discernment*, and exercise *good judgment.*

In addition there are other qualities not always thought of as being mental such as c*ompassion.* Philosopher Mary Midgley notes in *Animals and Why They Matter* that "Compassion [is not] a rare and irreplaceable fluid, usable only for exceptionally impressive cases. It is a habit or power of the mind, which grows and develops with use. Such powers (as is obvious in cases like intelligence) are magic fluids which increase with pouring. Effective users do not economize on them."

*Intuition, empathy, imagination***,** and a *sense of humor* are yet more mental qualities. *Wisdom* combines insight, good sense, judgment, and knowledge.

One can develop all of these qualities without formal education or training, as often demonstrated by people with not much more than motherwit, an open mind, and a habit of watching and listening carefully. In general we could encourage such attitudes and abilities by

making them models, by finding them in our family members, friends and associates, by naming them and aiming for them. We should certainly expect them of our leaders and authority figures.

A Habit of Reason

>   *When I get new information, I change my position. What, sir, do you do with new information?*
>   John Maynard Keynes (accused of being inconsistent)

A person may let his intellectual sins add up until he is virtually "lost to reason." On the other hand, he could develop the brain he was born with and truly become *Homo sapiens sapient* (the wise human). There are many ways to develop the habit of reason.

To begin with, people need a better understanding of the word 'argument.' People know that it is unacceptable to conduct a quarrel in public, but an argument in many of its senses is not a quarrel at all. The dictionary has these definitions of the word 'argument':

- Discourse [talk] intended to persuade
- A reason given in proof or rebuttal   :
- A coherent series of statements leading from a premise to a conclusion

For hundreds of years people have talked about the argument of a speech or a piece of writing, or an argument as a civil and reasonable exchange of differing viewpoints, so let us not confuse it with a loud exchange of insults we hear coming from the sidewalks late at night.

While we are at it, a discussion is "consideration of a question in open and usually informal debate" while a debate is "a regulated discussion of a proposition between two matched pairs."

The Town Hall is an excellent institution for sharing views of people in the community, although recently some politicians have degraded it into an artificial, partisan presentation made for television. Symposiums and panel discussions are also good ways to exchange ideas, although sometimes so polite and academic that they do not attract a wide spectrum of the community. Sometimes institutions advertise a high school or college debate to the public—more should be. Public meetings may allow public expression of opinions about specific environmental or development issues. The point is that we all need lots of models of interactive discussions, reasoned argumentation, and real debates based on evidence.

On the personal and community scale, even in college classrooms, people are often afraid to speak out and especially afraid to disagree. There are several reasons for this, including the popular confusions mentioned above between a reasonable argument and an emotional dispute. Those who come from or live in a more authoritarian or conformist community will be especially afraid to 'make waves.' Some people—especially women and others who are in less favorable social positions because they are not well-educated, are working-class or minority—are intellectually insecure and afraid to look too assertive or as if they are showing-off. They are especially afraid to look dumb. And there is always the male/female thing. As Wendy McElroy says:

> Men tend to approach conversations about ideas, not as a way to explore and enjoy the terrain, but as the intellectual equivalent of an athletic event in which there is a winner and a loser. And men don't like to lose.

From personal experience, I know that while some men want women in discussion groups as audience, décor, laugh track, and inspiration, it threatens them to have intellectual parity with

women. They may try to marginalize women who are as outspoken as men or who have a large knowledge base.

In her book *The Reasonable Woman*, McElroy is concerned with psychological problems that block people's intellectual potential. McElroy says the belief that college is the only path to intellectual achievement is one of many destructive beliefs that keep people from developing their intellects. She herself was once a runaway and has only a high school education; she points out that many famous intellects were self-educated and often came from working-class families.

I too have known self-educated people who intellectually surpassed many others with college degrees. A family friend, an immigrant from Hungary with six grades of formal schooling, educated himself using Little Blue Books—paper books that cost a nickel during the Depression—as well as public libraries. Working as a skilled machinist in a factory, Ralph was eloquent about the writings of philosophers such as Schopenhauer and Nietzsche. My own mother, from a very small town, had only one semester of teacher's college—then called 'Normal School'—but inspired by an exceptional teacher who had taught her in high school, she read widely. Her knowledge of literature surpassed that of many people, including me, who had a major in literature.

Another common obstacle is the fear of looking stupid, but McElroy says "Everyone has the right not to understand…Don't apologize, ask for clarification." She says the fear of making a mistake is "the most powerful fear that stands as a barrier to thinking clearly." McElroy notes that some people express their fear of making mistakes by becoming know-it-alls or intellectual bullies, while others turn into perfectionist nit-pickers or avoid ideas entirely. Yet it is no shame to admit mistakes. McElroy says:

> Indeed, there is great strength in being willing to acknowledge your errors and to learn from them. This one trait alone, if developed as a habit, will give you an amazing advantage over most of the people you deal with intellectually.

Another set of fears and inhibitions interfere with reasoning especially for women, who McElroy says "have an exaggerated fear of other people's anger," especially of male authority figures. They need techniques for dealing with hostility—learning how to disagree with others without giving offense and how to stand up to overly competitive people or intellectual bullies.

While suggesting ways to overcome self-destructive emotions that hamper people's intellectual lives, McElroy holds out the ideal, which is the habit of reasonableness. This is "the intellectual tendency to base your conclusions and actions on evidence." A reasonable person cares more about what is true than she cares about being right.

Steve Allen includes a hundred and one suggestions for better thinking in his book, and the first one is this: "Decide that in the future you will reason more effectively." That might not be a bad place to start for all of us.

Build a Thinking Infrastructure. Let us summarize previous suggestions to expand and clarify our individual and collective patterns of thinking, while adding a few more suggestions. These are major aims:

- Improve literacy rates among the English-illiterate and the functionally illiterate in the U.S.; support literacy everywhere in the world. Veteran teacher John Gatto insists that it takes only about 100 hours to transmit the basics of reading, writing, and arithmetic "as long as the audience is eager and willing to learn." Let us put this to the test.

- Encourage people who *can* read, to read more. "Use it or lose it."
- Encourage people to upgrade some of their reading from the purely recreational to classics, non-fiction, and other books that will stimulate them to think.
- Increase the number of book clubs, discussion groups, public debates, authentic town halls, and other models of how to conduct a rational argument. Especially encourage discussion and debate about survival concerns.
- Help people to understand important issues by widely communicating just a few basic concepts from each field of learning or each position. For instance, anyone who talks about 'environmentalism' should know the meanings of 'biodiversity,' 'ecosystem,' 'carrying capacity,' and 'sustainability.'
- Organize intellectual therapy groups, on the model presented by Wendy McElroy, to overcome psychological barriers to an individual's full participation in the life of the intellect. This especially applies to women but not only to them. In groups you belong to, remain aware of any dynamics that marginalize some members of the group who are a different gender, age, class, or cultural background, or are not as assertive as others.
- Promote low-television diets for adults and especially for children; the very youngest should not be watching at all. Keep television sets and computers out of bedrooms.
- Teach critical thinking as a school subject at every level, including adult evening courses and a PBS series for all ages. Please don't say, "Oh, we teach critical thinking in science classes," thinking that you have covered the topic. Every citizen needs to know how to analyze propaganda and to counter bad arguments in general.

Broader social measures also relate to these aims, such as assuring that high quality day care—that does not simply plop toddlers and pre-school children in front of a television set for hours—is affordable to all. Raising the minimum wage can release some people from working a second job, thus freeing up their time and energy for reading, thinking, or interacting with their children in ways that will ultimately aid the next generation's mental abilities and mental health.

Many in the United States could use a civics refresher course, maybe a short power-point video that is widely accessible as a rental from public libraries. This would refresh people's memories about the three equal branches of government, checks and balances, the Bill of Rights, and the basics of our legal system that go back to the Magna Charta. Many people treat the Constitution as if it were another book of the Bible, but they don't seem to know what it actually says. Periodically, somebody sets out the Declaration of Independence as a petition and asks people to sign it—most of them refuse to do so, not recognizing this 'radical' document for what it is.

A book by Cathy Travis, *Constitution Translated for Kids*, is set at the fifth grade level and could be a quick refresher for adults. Since Americans are also noted for a lack of geographical knowledge, why not put globes and maps in public places, especially for people waiting in line or in lobbies and waiting rooms? These could include a variety of map projections, such as the Robinson projection that shows the Southern Hemisphere at the top instead of the bottom. Since people generally have a tendency to privilege what is on top, this map can shake up preconceptions. Of course, locating countries on a map is only one small part of geographical knowledge, but it's a start.

Film-makers: please make more films, thoughtful films, about little-known but dramatic events and fascinating personalities of world history. Not only would these be entertaining, but

the more that people know about their collective past, the less likely they are to repeat *those* particular mistakes.

A number of organizations across the United States are devoted to reducing illiteracy or to encouraging reading, for example, the National Education Association's (NEA) "Read Across America" program. Public libraries proactively create more readers through children's programs, sponsored book clubs, lectures, and other activities. My own city library has become a sort of community center involving people of all ages from babyhood on. It was one of 72 across the nation which received grants from the National Endowment for the Arts to present a week-long Big Read, including a day of 17 discussion groups across the city. This library focused on the book *Fahrenheit 451*, by Ray Bradbury.

Libraries and other organizations are accomplishing a great deal. An expanded, concerted, effort especially for adults and focused on the challenges to our species could be organized by an alliance of groups and people who recognize that without wider participation in thinking activities such as reading and discussion, we are likely to lose the whole ball-game: first, democracy; second, the living planet.

Critical Thinking, What Is It? There are quite a few definitions of critical thinking, and here is a sampling of them. Critical thinking is:

- *Thinking about your thinking while you're thinking in order to make your thinking better*.
- *A systematic process for separating truth from fiction. It bears many resemblances to the scientific method, but is more applicable to the vague and incomplete information one faces in daily life*.
- *The use of rational skills, worldviews, and values to get as close as possible to the truth*.

Vital aspects of critical thinking are that it is *systematic*, *disciplined* activity, it *involves self-improvement*, and it uses certain *intellectual standards* by which to assess thinking. The nearest comparison might be to an athlete or an athletic team trying to improve performance through practice and feedback. However, unlike athleticism, critical thinking is a life-long activity that does not end with achieving your personal best, winning tournaments, or breaking records. Nobody ever gets there 100 percent, either. We all have our sub-rational moments and sometimes that is just as well, since we are emotional beings and not thinking machines. We don't want to be like the proverbial centipede that became so self-conscious of his many legs in motion that he could no longer walk.

If you would be a critical thinker, listen. Watch. Use your own senses and powers of observation instead of immediately putting your experience into categories and making value judgments based on what 'They' say. 'They' are media, political leaders, religious authorities, neighbors, or the people you hang out with. Basic critical thinking skills include the ability to separate facts (that can be verified) from opinion (beliefs or attitudes that cannot be proved or disproved). Another is the ability to evaluate sources of information. Still another is to consider the *context* of any statement.

Dr. Linda Elder and Dr. Richard Paul make the following suggestions: First, summarize in your own words what others say. Then ask them if you understand them correctly. You should neither agree nor disagree with what anyone says until you clearly understand them. (This would also be a good technique to prevent conflicts among family members and friends.)

Good thinkers routinely ask questions and question the status quo. They know that things are often different from the way they are presented.

Good thinkers want to change their thinking when they discover better thinking. They can be moved by reason. Unfortunately, few people are willing to suspend their beliefs to fully hear the views of those with whom they disagree. Elder and Paul ask, how would you rate yourself on actually hearing the other person's argument?

A mid-career college student who took a course in critical thinking passed on what she had just learned:

> If there is one basic rule to critical thinking that I, as a novice, have learned it is: **don't be afraid!** Don't be afraid to ask questions and test ideas, ponder and wonder….Don't be afraid to have a voice and use it!...Don't be afraid to consider other perspectives….Don't be afraid to utilize help…Above all, approach life as an explorer looking to capture all the information possible about the well known, little known and unknown and keep an open mind to what you uncover.

We live in a time-pressured society, but it is very important to practice *reflection*. Instead of jumping to conclusions, pigeonholing other people, or forming instant opinions, reflection takes the time to consider an issue and perhaps "sleep on it." Reflection replaces gullibility and also its flip side, cynical skepticism. "To doubt everything or to believe everything are two equally convenient solutions: both dispense with the necessity of reflection," according to the famed mathematician Jules Henri Poincaré.

Without reflection, there is no real 'thinking,' only the amusement of moving around game pieces labeled as ideas.

The History of Critical Thinking

> *Do not believe in anything simply because you have heard it.*
> *Do not believe in anything simply because it is spoken and rumored by many.*
> *Do not believe in anything simply because it is found written in your religious books.*
> *Do not believe in anything merely on the authority of your teachers and elders.*
> *Do not believe in traditions because they have been handed down for many generations.*
> *But after observation and analysis, when you find that anything agrees with reason and is conducive to the good and benefit of one and all, then accept it and live up to it.*
> Gautama Buddha, c. 563-483 B.C.

Critical thinking is hardly a new idea. The first signs we have of people who examined their own thought processes appeared about 2,500 years ago with Buddha's counsel above and in Greece, where Socrates (c. 469-399 B.C.) began the Western tradition of critical thinking. Socrates developed a method that used probing questions to demonstrate to people that they did not have rational justification for their claims to knowledge—that in fact most people, even if their rhetoric sounded good, did not know what they were talking about. (Is it surprising that he was eventually condemned to death for his disruption of society?) His method of questioning is called the Socratic Method and is still a basic way to teach critical thinking.

Socrates also believed in self-examination, understanding one's own mental tendencies, strengths, and weaknesses. Accordingly, "The unexamined life is not worth living." He influenced a number of Greek thinkers who included his student Plato and Plato's student

Aristotle. The Greek skeptics emphasized the need to train the mind to look beneath the deceptive surface of things and to think systematically.

Aristotle's writings continued to be extremely influential in the Middle Ages, for instance on the great thirteenth century theologian Thomas Aquinas. Aquinas made sure that his own ideas met the standard of critical thinking by systematically stating, considering, and answering all criticisms of them as part of his presentation. Aquinas demonstrated how reasoning should be systematically cultivated and 'cross-examined.'

During the Renaissance, rediscovery of ancient texts as well as the inflow of new ideas from contact with Constantinople and Arab cultures stimulated European thought. Medieval universities began in the eleventh and twelfth centuries and sometimes developed into hotbeds of intellectual disagreement. A number of scholars such as Erasmus and More began to analyze and question accepted beliefs about everything, while Nicolo Machiavelli cast a critical eye on the real agendas of politicians.

In England, Sir Francis Bacon advised: "Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider." Bacon viewed the parade of human folly as due to the mind's enslavement to intellectual idolatry. He famously described the "four classes of idols which beset men's minds" and which interfere with our true understanding of things. The human mind, he said, is like a distorting mirror. These are the four classes of idols:

First, the Idols of the Tribe "have their foundation in human nature itself," in our social prejudices and preconceptions. These are universal human errors similar to those we describe as recipes and jumping to conclusions. Next, the Idols of the Cave are "common errors" of the individual because of his conditioning and egotism. Idols of the Marketplace are based on false ideas that develop from the nature of human communication (including, perhaps, names and frames). Idols of the Theater are ideologies and traditional philosophical systems that were never subjected to a test by experience.

Critical thinking and freedom of thought have a close relationship. In 1644, English poet John Milton wrote *Areopagitica* in response to an order of Parliament that required government approval and licensing of all published books to prevent dissemination of error. Milton said that to try to prevent falsehood is to underestimate the power of truth itself: "Who ever knew Truth put to the worse, in a free and open encounter?"

In seventeenth century France, Rêne Descartes encouraged systematic doubt, while Sir Thomas More, Thomas Hobbes, and John Locke subjected every area of social life to critical analysis. Scientists, philosophers, and social critics extended this analytical approach through succeeding centuries. Scottish philosopher David Hume (1711-1776) counseled "A wise man proportions his belief to the evidence."

In the early 20th Century, anthropologist William Graham Sumner made an explicit formulation of critical thinking as part of his classic book *Folkways* about the basis of sociology and anthropology. Sumner showed how humans tend to think through the lens of their own society, while schools serve the function of social indoctrination:

> School education, unless it is regulated by the best knowledge and good sense, will produce men and women who are all of one pattern, as if turned in a lathe…An orthodoxy is produced in regard to all the great doctrines of life. It consists of the most worn and commonplace opinions which are common in the masses….Education is good just so far as it produces a well-developed critical faculty.

A century later, new technologies and circumstances have greatly expanded the need for "a well-developed critical faculty" to defend ourselves from advertising, spin, and propaganda. It is pretty crucial for the nation and for species survival that children learn to think critically in school. It also keeps them from being at the mercy of those who would manipulate them to buy or vote. But according to Grace Llewellyn and Amy Silver in *Guerrilla Learning*, "Higher-level skills such as critical thinking are neither taught nor tested in most schools." Instead, the 'Standards' movement and its high-stakes testing currently dominate public education through federal legislation.

One can teach critical thinking in many subject fields in school or university, or as a separate subject. It could be taught online, over PBS, or in a discussion group. But whether or not critical thinking is taught in school or elsewhere, people of every age and walk of life can also become more aware of their thinking habits, assumptions, and habitual points of view.

Know Thyself (Inscription on a temple to Apollo, 343 B.C.): It helps, at the beginning, to understand yourself and your predispositions. Do you by temperament tend to be impulsive and to jump to conclusions? Do you depend a lot on your intuition? Do you get defensive when somebody disagrees with you? Are you highly competitive and argue as if exchanging ideas is a blood sport? Are you afraid to defend your own opinions? Get to know yourself. Look for the personal motivations behind your intellectual positions. Look for the programming.

One very simple thing to do is to start watching your own thought processes on the wing. When you become aware of the inner stream of consciousness, it may surprise you. Perhaps you overhear yourself thinking something you don't like, such as blaming another for your own mistakes; or you are running negative mental scenarios about 'he said' and 'she said' that turn out to mean simply that you are thirsty or need a sweater, the noise level is too high, or your toe hurts.

You may find that some basic fear is at the bottom of your dislike of a group or idea. You may discover the origins of your oldest and most definite beliefs in the repeated remarks of some person in your early life, or perhaps just one unpleasant event. Spiritual teacher Eckhart Tolle says: "To see the conditioning in oneself is to begin to get free of it….And that is a new level of consciousness arising." Tolle notes that close identification with one's own mental constructs leads to a lot of conflict and confusion. He suggests that you, in your new awareness, watch yourself in the midst of an argument:

> [The] witnessing presence can sense the implicit violence behind your defense of your position….because there is an identification with a thought, with a mental construct that gives you your feeling of who you are. You attack other people's positions because you are defending a fictitious sense of self….The need to be right and to make the other wrong is the source of continuous conflict, in relationships and in the world.

The "witnessing presence," once you locate and cultivate it, can counter the ongoing conditioning from social opinions and media. We pick up memes like a dog does fleas, without realizing it, from their constant repetition. Then we repeat them to each other as if this was an idea we thought up all by ourselves. It is essential to keep a wary eye on the combined might of technology, industry, government officialdom, and advertising/propaganda. We need to watch out for those ideas that are 'in the air'—because some PR person or propagandist put them there. In a media-saturated society the conventional wisdom is no wisdom at all.

Some meme theorists such as Susan Blackmore appear to conceptualize memes in such a mechanistic way that we are not in control of our own mental lives. It is true that to some degree all of us are at the mercy of the mental habits, concepts, and ideologies of our own cultural conditioning. But the point of this book (and the two to follow) is that one *can* attain a different perspective, that we have a Self or witnessing presence within, that actual thinking is possible.

Chapter 27: Conclusion

All theory, dear friend, is grey, but the golden tree of actual life springs ever green.
Johann Wolfgang von Goethe, 1749-1832

The greatest thing in the world is to know how to be one's own.
Montaigne, essayist, 1533-1592

If you turn off the TV, you might discover a new and interesting person—yourself. We are flesh and blood creatures, with exquisitely tuned senses, so let us use them. Good thinking begins with an authentic self, participating directly in the unfolding world. Before science, before machines, before ideologies, before critical thinking there was participating consciousness. This is the way of a human being, mind and body with all sensing systems intact, without preconceptions, unfettered even by consensus reality. Children, poets, indigenous peoples, and mystics experience the world in this way: more directly, as a part of the whole and not separated from it by categories and thought systems imposed from without.

At one time I lived alone in the woods in a remote cabin without electricity and became more attuned to the natural world. One day, a coyote crossed my path some fifteen feet ahead. We stopped and looked at each other for several minutes; then it loped away. Nothing dramatic or supernatural happened: we simply *grokked* each other. Coyotes are not exotic beasts—they are even settling our cities. But here we met in the wild. Such direct awareness of the wild is so rare for most adults today that for me it became an experience to remember. Now that I have encountered coyote, I wonder, can we coexist with these animals, without killing them or making pets of them? Maybe *their* god told *them* to overspread the Earth, too.

It is not only the natural world. One can also experience other people more directly, without intervening ego, categories, and conditions. This is love of the deep, unconditional kind, seldom seen outside of the family circle and rare friendships, but something that spiritual seekers may dedicate their lives to achieve.

The self-in-the-world, the participating consciousness is not separate from our bodies. Our nerve cells and sinews know more than we do consciously, as tacit knowing and more. Eckhart Tolle points out that the vast intelligence found in our body organs and DNA, that runs and coordinates all the functions of the body, could not be duplicated by the world's computers all put together. Tolle says "There is so much more to a human being than thought activity. There is so much more intelligence beyond the world of thought, in the realm where intuition, creativity, and sudden realizations come from."

The original human consciousness does not separate us from our bodies, from nature, and from other kinds of people as modern consciousness tends to do. And this original, part-of-the-whole awareness is the first step towards species consciousness, planetary consciousness, and even what some have called cosmic consciousness.

A Great River of Knowledge: In a recent article David Brooks quotes an anonymous (perhaps fictional) neuroscientist who presents the following wisdom:

I believe we inherit a great river of knowledge, a flow of patterns coming from many sources. The information that comes from deep in the evolutionary past we call genetics. The information passed along from hundreds of years ago we call culture. The information passed along from decades ago we call family, and the information offered months ago we call education. But it is all information that

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flows through us….Our thoughts are profoundly molded by this long historic flow, and none of us exists, self-made, in isolation from it.

Brooks goes on to say that that while our species has developed self-consciousness in order to help our survival, "we still have deep impulses to…become immersed directly in the river." In other words: to participate consciousness. "Flourishing consists of putting yourself in situations in which you lose self-consciousness and become fused with other people, experiences, or tasks." Some psychologists have called these situations 'peak experiences.'

To help one think outside the box I recommend two books that take us beyond the usual categories and stretch minds of any age. *The View from the Oak: the Private Worlds of Other Creatures*, by Herbert and Judith Kohl is based on the concept of Jacob von Uexkull that every sort of creature has its own sense-world or *umwelt,* built around its evolved senses and way of life. A raptor's world hinges on its keen eyesight. A bird or butterfly may migrate for hundreds of miles navigating by an inborn star map, or with a special magnetic sense. No one can say that a smell-world is superior to a sonar world, or that the way I sense the world is superior to yours—for in fact, each of us humans also has a slightly different sense world. Some of us have 20/20 vision, others see auras, while yet others are blind but have an incredibly accurate sense of touch. With the concept of the *umwelt* one can enter and respect all the different ways to see and hear and smell and taste and touch, and thus to participate consciousness.

The second book, by Kees Boeke, is *The Cosmic View: the World in Forty Jumps*, first published by John Day in 1957 but now hard to find except online. *The Cosmic View* goes beyond the individual's senses to the technically-aided senses and concepts of modern science, and yet it also induces humility and awe at the whole of which we are part, from invisibly small bits of matter to unfathomably enormous objects in the sky.

We need to be able to view our conditioned thinking from outside—Learning 3. The idea is to see what is really there, not what you have been taught to see. Spiritual teachers advise you to still your mind and stop the constant chatter through practicing meditation. Meditation may be a formal practice or something you do while walking or listening to music. Various spiritual practices have devised methods such as the Zen *koan*. With paradoxical questions like, "What is the sound of one hand clapping?" Zen teachers try to break the hold of categorical thinking. The aim is to achieve Zen mind or 'beginner's mind.' They would recreate the wise and innocent outlook of a child not yet restricted by conventional categories and meme recipes. Thomas Moore says that re-enchantment "asks us to search for the lost childhood of the human race and discover, in a larger social sense, what we have forgotten."

While emphasizing our original, intuitive, and holistic awareness, let us also be clear about what participating consciousness is *not*. It is *not* the consciousness of some mythical 'noble savage.' It is *not* some form of pagan worship, or a literal belief in magic. It is *not* the bandying around of New Age terms by people who have no actual experience of the consciousness they glibly talk about. It may or may not be achievable by ingesting or smoking certain substances, but most likely these short-cuts won't work, or not for long.

While participating consciousness involves intuition, it is *not* the 'gut feeling' of a man with a gun in his hand that the person in the line of fire is threatening him or deserves to die. Nor is it similar 'gut feelings' of the leader of a military empire with a modern army in his hand, or in fact any intuitive hunches that predispose one to violent action or to any other action based on self-interest and ego.

Participating consciousness is *not* the substitution of ideologies based on books, holy or not, for science. It is *not* directly related to organized religion. Part-of-the-whole awareness is at the

mystical core of most religions, but it withers in the presence of theologies and dogmas. Thomas Moore distinguishes what he calls 'natural religion' from religion that involves an intellectual commitment and is part of an institution like a church or tradition. He defines it as "an appreciation of the sacred and the holy in every aspect of life: nature, work, home, business, and public affairs."

Part-of-the-whole awareness is *not* in opposition to science in the broadest sense. But, says Thomas Moore, "We may have to stretch the borders of our scientific assumptions and insist that the moon is not dirt and rocks, the human body is not a machine or a gene factory, and the earth is neither inert nor without a personality." The original holistic consciousness has been weakened by Cartesian dualism, and by the institutions of applied science for profit. Science, while it is modern humanity's largest reservoir of objective thinking, and essential now to our survival, also has its ideologies. Historically, science-and-technology developed along with the desires of capitalism to make profits and the desires of national powers to win their wars. Thus it has contributed greatly to those problems that we now need its help to solve.

 What then shall we do about all those mental strategies that served us reasonably well in the Stone Age but have now bought us to the brink of multiple disasters? The first way to improve our thinking is to recognize what we are actually doing and what does not work. This book provides plenty of such bad examples. Now we need to look for the seeds of change within the darkness. We cannot remake our human nature overnight. Some thinking habits are very old and deeply rooted, or even hard-wired.

One course would be to deny that a natural tendency exists, another to fight against our nature, but the wisest course might be to recognize and build on who we are. For instance, if we are wired to prefer 'supernormal stimuli,' let us be aware of that fact. Then we consciously see how advertising makes use of this human tendency in order to manipulate us into buying something because it is "bigger and better than ever." By looking within and seeing who we are, we are no longer controlled by our ingrained tendencies. In less crucial matters we can accept our attraction to big-bosomed women or well-muscled men but watch out for the tendency when, for instance, it leads us to look for bigger than life, authoritarian leaders, or to give automatic approval to enormous dams that displace a million peasants as "progress."

With our very old disposition to fear the stranger, let us look at that part of ourselves individually and historically. Remember that our species developed for hundreds of thousands of years in small bands of people; and even today our family, closest friends and colleagues still probably number no more than twenty-five or so. We have taken to living in towns and cities, but our psyches may not be entirely ready for this crowded way of life. It is historical fact that demagogues and dictators take advantage of fear of the stranger to deflect their citizens' attention from economic and other problems towards a scapegoat of a different nationality, color, or religion. Let us always be aware of this tendency.

Here are some tools and perspectives mentioned so far that could help us "think toward survival." First is part-of-the-whole consciousness that puts you in your body and in your world, a position from which you can apprehend everything else more clearly. Insofar as one can recover this innocent observer or fair witness within, one is fortified against the false starts and recurrent hysterias of the greater society.

Second is literacy, both the ability to receive information in print and an acquaintance with the basic knowledge systems accumulated by civilization so far. This second kind of literacy

does not require a college education as long as there are books, lending libraries, and the Internet.

Third, in critical thinking one remains skeptical or reserves judgment until convinced by the evidence. The critical thinker is aware of his or her own thinking programs and can upgrade them. Critical thinking in addition to participating consciousness brings one very close to something that might be called 'wisdom.'

We need to be "as wise as serpents." There are many, many meme complexes out there competing with each other, surrounding us with idea-systems or ideologies that fix and freeze experiences. Without realizing it, one's daily thinking may simply range within these dualistic ideologies. Once we accept an ideology deliberately, or simply because such ideas surround us, this partial view crystallizes thinking. It stops the participating consciousness and discourages critical thinking.

The second book of this series, *Swimming in a Sea of Ideology*, will explore a number of idea systems that rule our lives such as nationalism, various economic theories, and religious fundamentalism. We take a look at the culture wars and their favorite battleground, the public schools. Also on this magical mystery tour are a number of dead old myths that haunt us still such as Manifest Destiny and Social Darwinism. Along the way, *Swimming* analyzes conspiracy theories and describes one of the oldest, least recognized, and most influential ethnic groups in the United States, along with certain ideologies and myths associated with this group.

Swimming takes a deeper look at several fields of knowledge and a few ideologies that all wear the cloak of Science. The scientific method is one of the greatest achievements of human history. How can we make sure that science as a whole works towards our survival?

To be as wise as serpents, we need good information and reliable media sources. What we often get instead is misinformation, disinformation, and no information, along with outright propaganda. 'They say' we now live in an Information Society, but there is too much of it—and how can we be sure it's true, relevant, and adequate information? Ownership of the mass media is increasingly concentrated, newspapers are in trouble, and television has a number of basic flaws, some already mentioned. Media literacy and media reform are life preservers to rescue us from the sea of ideology.

We desperately need as many constructive suggestions as possible. The third book, *Thinking Toward Survival*, will present a variety of perspectives and old/new ideas directed to saving ourselves from our self-created problems. While no 'Plan B' exists, there are a lot of people across the globe with a piece of the answer, possibilities C through Z. Along with a number of practical proposals. *Thinking Toward Survival* will also explore the domains of creative thinking and wisdom traditions for answers to our dilemmas.

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