

EVOLVING IN A PLACE CALLED EDEN
IS A PROMISING YOUNG CIVILIZATION.
WE GROW MORE DANGEROUS
YET WISER EACH DAY.

TEACHERS HAVE TAUGHT US
THROUGH THE AGES.
THEY ARE WATCHING US NOW.
THE COSMOS IS THEIR OCEAN
AND THEY HAVE BEEN MINDFUL
OF OUR NEED TO DEVELOP.

AT WHAT MOMENT IN HISTORY
WOULD THESE VISITORS WANT US TO JOIN THEM?
WHAT WILL WE BECOME WHEN WE DO?

WE SHALL MEET THEM
AS THE MEN AND WOMEN OF EARTH
AND ASK THEM FOR THEIR TRUTH.

THE TRUTH

THE TRUTH

CONDENSED EDITION

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PART I

EVOLVING IN A PLACE CALLED EDEN...

Who are you?

You read this as a wave of forces in dynamic equilibrium, calling yourself a "living homo sapiens animal". Clothed in manufactured fabrics, perhaps sipping a cup of chemistry, you are staring at a Microsoft Word document delivered to you through an electronic communications system called the Internet. The Internet touched large populations of animals for the first time approximately 2000 revolutions of the Earth about her Sun following the birth of a being named Jesus. You are a speck of dust of biology on a speck of dust of geology circling your Sun, within a revolving arm of the Milky Way. As far back in time as you have been able to peer through your Hubble Space Telescope, you have learned that the Milky Way is one of about 150 billion vast astrophysical cyclones you call galaxies, each with hundreds of billions of suns and planets.

A strange introduction to yourself, isn't it? Yet that is actually a more complete description of you in this moment from the eyes of the Cosmos and distant future history books of Earth.

Whenever we contemplate such abstract ideas, we all seek to answer the basic questions of life: Who am I? Why am I here? What is my purpose? What is my place? These are difficult questions to answer. Let us start by looking at what we're made of.

You are made of Milky Way galaxy. You are made of the Cosmos. The Cosmos includes everything you smell, taste, touch, hear, see, know, or do. It is everything that is.

Humans have been taught for millennia the tale of the origin of the Cosmos. Scientists in the discipline of cosmology call it "the Big Bang". Those faithful to the Western world's dominant religions call it "Genesis". In the beginning there was a special kind of energy, or light, a light that makes all things – a kind of temporal potential. Billions of galaxies, trillions of stars, and an uncountable number of worlds formed. On many of those worlds, when of just the right size, just the right distance from their suns, with just the right chemistry, as night parts with day in a rare ecological harmony, the spiral of life springs forth from their oceans and gardens.

The Earth upon which you stand and all of the chemistry within your body and in the air you breathe was formed from simpler matter as a star perhaps like our sun exploded in death over 6 billion years ago. It spat out atoms in forms suitable for the evolution of a wondrous place such as Earth, and a being such as you. Perhaps the first time we homo sapiens truly understood the majesty of Earth was when we could see a picture of her. She was the cover star of Life Magazine in January, 1969. For the first time in our recorded history of the planet, millions of her own children – human beings – saw her whole face, and understood that they were looking at the home creation has made for them.

It took a decade from those first Apollo images of Earth for a human to loudly proclaim that our planet is a living being. In James Lovelock's [Gaia](#), the evidence is as plain as ink on a page. There is life-like precision, care, and process across all the disciplines of "non-living" science -- physics, astronomy, chemistry, geology, meteorology -- not just biology, particularly as these disciplines interrelate in the definition of place suitable for human life. If we take a brief trip to visit the life on Earth, it becomes clear that our world simply must be categorized as an organism herself with a metabolism tuned by biology, *for the sake of biology itself*. And since biology clearly serves the purpose of evolving consciousness, it can now be said that *the Earth exists to advance consciousness*.

We live upon an amazing engine of life!

Life

"Of all the planets in the solar system, why is Earth the only one fit for life? Simple: because Earth has a surface that supports liquid water, the magic elixir required by all living beings."

-- James Kasting, Scientific American, 3rd Quarterly, 1998

Oceans cover over 70 percent of the Earth's surface. Scientists theorize that the oceans formed upon the Earth's crust through some combination of liquid and gas release from the interior of the planet and impact of ice-laden comets from the heavens. Whatever the source of the water, there is now 350 million cubic miles of it sloshing upon Earth's crust, reaching to a depth of 36,200 feet in the Pacific's Marianas Trench, where the pressure from the weight of the water is equivalent to over a thousand atmospheres.

The ocean is separated into its barren and fertile zones just like the land. Massive rivers within the ocean called currents carry water around the globe in huge circling patterns, influencing and influenced by global weather systems. Powered as forcefully as they are, currents move quickly only at the surface, for deep cold water takes about 1,000 years to recirculate with the surface. With the remarkable exception of the ocean floor itself, where perhaps millions of species of life remain undiscovered, the deep of the ocean is a desert compared to the dazzling garden of beings found inhabiting the more temperate, shallow zones. The upper two percent of the ocean's volume contains most biological organisms, at least those familiar to us. From the smallest single-celled amoeba to the largest blue whale, the ocean courses with simple, intelligent, and majestic life. It might surprise you to learn that the ocean supports a greater diversity of living body types than land. Indeed, of 33 animal phyla, 30 describe residents of the ocean. Only 16 describe residents of dry land or freshwater.

The tree of life grows swiftly in water. Indeed, the root of the tree of genetic biology spirals outward from the oceans, and has turned a pregnant clump of geology into a verdant garden on the land.

If ever there was a true Garden of Eden, its last superpower sprawls across our South American continent. No place on Earth is the majesty, power, and truth of the double helix of life more splendidly evident than in the depths of the jungle, across the plains, in the canopy, along the mountain peaks, and near the edges of this great labyrinthian river. Indeed, might not the river basin itself be alive, and thinking the thoughts thought by its many different cells -- the trillions of organic life forms among millions of species which it sustains and evolves?

We know of no other place like this in the universe, at least none most scientists believe we could ever hope to reach. All the more precious this last vast preserve of Eden would then have to be to the life of Earth, and to all humans. Certainly to any true scientist.

First, the obligatory numbers. The Amazon basin and adjacent regions in Central and South America represent 50% of the remaining rainforests on the planet. The basin delivers 20 percent of worldwide river water to the Atlantic ocean, from the reaches of 2.7 million square miles of rainforest. Its total water flow is greater than that of Earth's next eight largest rivers combined, with a mouth at the ocean 200 miles wide, containing an island larger than Switzerland. Oceangoing vessels can travel up the river for 2,300 miles, placing them much closer to the Pacific ocean than the Atlantic.

The rainforests contain 50% of living species of life on this world, yet they cover only 7% of the area of land. That 7% forms an indispensable segment of the branch of the tree of life upon which humanity stands at this moment.

Underlying these dry numbers rests a secret of incredible majesty: the rainforests are the most powerful and concentrated womb of life ever created on the land of Earth.

The most pervasively beautiful life form in this place is the tree. Trees of every possible variety, thousands and thousands of different species. Some individuals are older than the Bible, some stretch as high as the length of a football field, these mighty creatures shelter the biosphere of Amazonia. They shield most of the sun's light from reaching the forest floor, creating an enclosed womb for the dance of life below. At their roots, the life of the jungle is a product of the geology and chemistry of Earth, and at their highest leaves, they are home to the most fantastic winged life forms known to man. In between soil and canopy is an infinitely complex yet stable web of life, with millions of species of microorganisms, plants, and animals evolving at a breathless pace. Would it surprise you to learn that much of your DNA, the programming in the cells of your body, is the same as within the cells of these trees? It should surprise you, and it is true.

As you climb from the flood plains towards the mountainous peaks of the Andes, the temperature drops about 1°F for every 330 feet of elevation, which means that ambient temperature can drop below freezing at 16,400 feet at the equator. Hence the snowcapped peaks above the hot heart of the tropics.

In the steep mountains of the rainforest, the clouds themselves become the integral part of the fabric of life, rather than the rivers of the basin below. The clouds create an atmosphere rich in water, which accumulates on leaves through condensation and rainfall. In this place, the leaves themselves have evolved drip systems to gently convey condensed water to the soil below.

By shielding much of the sun's light, the clouds inhibit the pace of photosynthesis, thereby slowing the pace of life in the misty forests below the canopy. But among the clouds, whole new forms of life spring forward. The trees in this zone of our ecology are coated in thick ferns and mosses, and are inhabited by thousands of plants and animals of incredible variety.

At night, the forest does not sleep. It is often not even completely dark, as luminous fungi in the rotting leaves on the ground glow an eerie green light, covering the forest floor with a veil of light like a living Christmas decoration. And in this almost silent night, the luminous fireflies have their way too.

In the rainforests you will find plants that eat only air, sun and soil, plants that eat plants, and plants that eat animals. You will find plants that can survive 50-foot floods and plants that withstand the harshest of droughts. You will find plants larger than airplanes and smaller than pinheads. You will find plants bearing all manner of fruits, undiscovered thousands with the most mysterious healing powers, some with fruit containing 30 times the Vitamin C of citrus, and a few with the most lethal toxins known to science.

Animals

The fruit of the kingdom of plants is the kingdom of animals, and it is yet more majestic. Animals are far more sophisticated creatures than plants. On Earth, there have been the smallest insects, and the largest dinosaurs. There have been the most curious beetles and the most frightening spiders; the slowest turtle and the fastest falcon; the florescent green frog, and the bright red snake; the sound-navigating bat and the electric eel; the homing pigeon and the childlike dolphin; the most gentle kitten and the fiercest tiger; the finest horse and the fattest cow.

Living today, the smallest animals are the chlamydia and rickettsia bacteria, and are only a few hundred atoms in diameter. The longest insect is the pharnacia serratipes of Indonesia, measuring up to 13 inches. The longest worm is the bootlace worm, and has been recorded at lengths up to 100 feet. The oldest form of animal on Earth are the deep-sea snails, which have not changed in 500 million years. The fastest land animal is the cheetah, reaching speeds up to 60 miles per hour. The largest animal is the blue whale, with one individual found to measure over 110 feet long. The world's largest carnivore – the sperm whale – also has the world's heaviest brain. At 20 pounds, it's four times heavier than the human brain. The only cold warm-blooded mammal is the Arctic ground squirrel, which can lower its body temperature below freezing.

What absolute cosmic majesty!

Animals live lives of wildly different durations. The longest authenticated human life in modern times is 120 years. For a housefly, the longest life has been about 2 months. The cat, 34 years. The goldfish, 41 years. The orca, 90 years. The tortoise, 150 years. Yet scientists do not yet know exactly why animals age the way they do.

There are some 10-30 million species of animal on planet Earth. Of these, we have catalogued only about 1.2 million. Each year, 10,000 new species are added to the list of forms not already included in zoological classifications. Thousands of these wondrous forms of creatures face extinction because of the environmental hubris of the human animal. We are not simply killing animals. We are burning the blueprints that made them.

As with the plant kingdom, the mecca for animal life is the rainforest. In the Amazon, there are animals that live in the sky, never to cross underneath the canopy below. There are animals that live only amongst the branches. There are animals that live on the ground, others only under the soil, and yet thousands of species that scurry all over. Some animals eat plants, others eat animals, and still others are omnivores. Some are day creatures, while many roam only unseen in the black of night.

There are 30 pound rodents with webbed feet. There are tapirs, distant relatives of rhinos, zebras and horses, with an aquatically adapted fused nose and lip system. This accommodates their penchant for swimming, and is used to spray water at attacking dogs. One remarkable creature is the basilisk lizard, also known as the Jesus Christ lizard because of its ability to literally run over water. It would be impossible for humans to emulate this action, because the size, shape, and power of our legs are not evolved to accommodate such a rapid-fire energy-consuming propulsion task.

Tending the garden's soil are the ants. A mature community of leaf-cutter ants can have as many as three million members. These animals are the gardeners of the forest because they carry leaves into underground chambers, not to eat, but to use as food for the fungus gardens they cultivate. These colonies play vital roles in returning plant nutrients into the deep soil, for the cycle of life to continue.

There are stunningly colored species of frogs, many mysteriously disappearing, whose biological powers are remarkable. Not only do their skin pigments warn predators of their extreme toxicity, but many species possess a potent antibacterial substance on their skins which may hold promise for human disease

prevention. And living in the land of these frogs are thousands of species of insects, spiders, scorpions, and other crawling creatures, many of which are colored and patterned so finely matched to their habitat that they are essentially invisible.

The snakes of the rainforest are as amazing as the frogs and lizards. Across Asia, Africa and America are the bushmasters, coral snakes, rattlesnakes, vipers, cobras, and mambas. Of course, we seem to know best the giants of them all, the boas, pythons, and anaconda, which kill by constriction and consume their prey whole. But one of the most striking snakes is the flying snake, which has no wings to fly, but has a body shape which allows it to glide as much as 165 feet with little loss in altitude. For millennia humans have feared the snakes of the jungle, but this fear is largely unfounded. Most scientific teams have adventured in the jungles for years without single instances of snake bites. The most common deaths resulting from snakebites occur on farms.

There is the giant anteater, which forages for food in the form of termites exclusively on the forest floor, while its lesser cousins exploit both the floor and the canopy. Then there are the slow-moving sloths with what you'd swear are permanent smiles on their faces, looking like they're just fine with an other-than-A-type lifestyle. They really don't need to move all that much, because they can turn their heads in a 270 degree radius.

Of the exceptional large mammals of the Amazon, the jaguar is the king cat. The jaguar climbs among the trees and swims among the rivers, feeding upon the fish, alligators, and primates of the jungle. These carnivores hunt either through stalking or ambush, and they will take almost anything on. Indeed, large cats dominate the tops of food chains in all major rainforests in the world.

The primates – the closest large classification of animals to the human – live at all strata of the rainforests of Earth. These creatures are stunningly beautiful and remarkably human-like. The face-painted mandrill, the scarlet-faced uakari. The swinging orangutan. The howling monkey. The macaque. The gibbon. The striking black and white diurnal lemur. The stunning red-haired tamarin, being rescued from the brink of extinction by biologists in Brazil. The tiny, one-pount marmoset. The nectar drinking, white-faced capuchin monkey. The cousin to the human, the chimpanzee, often seen clutching, grooming, feeding, playing with, and generally loving their children. And we find the largest ape, the gorilla, threatened of extinction by civil war among homo sapiens animals in Rwanda.

To the cloud forests large mammals rarely go. But in this elevated paradise, countless animals flourish. Tree-dwelling monkeys with hauntingly-human looking faces stare at us through our camera film. Hundreds of variety of scurrying mammals inhabit the holes, nooks, and knots of the trees. Scores of species of bats navigate through the dusk, like the vampire bat, which consumes only the blood of other animals. And at night, as we shine flashlights into the dark, we see thousands of pairs of reflecting retinas staring back at us from the deep, indicating that the forest remains very much awake. The most frightening ocular reflections are those of the caiman crocodiles, peering back from the surface of the dark flowing waters.

Up in the canopy, the birds are the most beautiful creatures. The resplendent quetzals. A stunning variety of hummingbirds hover amongst the flowering plants of the forests. The toucans, macaws, eagles, parrots, cotingas, and cacique birds live among the emergent trees where hawks and vultures also land to perch. The vulture's large cousin, the Andean condor, gracefully glides above the trees, with a wingspan of over 10 feet. Under the canopy fly the woodpeckers, trogons, jacamars, and puffbirds. At eye level you will see ant birds, tanagers, flycatchers, and manakins, and on the forest floor, tinamous, ground doves and wrens.

All of these animals live within and contribute to an incredibly harmonious symphony of biology. Every animal in Amazonia is a basic part of the ecosystem we call life.

Perhaps the most remarkable thing for modern humans to learn from the biota of Earth is that the human may be the most sophisticated Earth-based life form in terms of its collection of capabilities, but it is far

from the most sophisticated in terms of its specialized capabilities. Plants directly convert inorganic chemistry into the food of life. We do not. Some plants can live for thousands of years. We cannot. Hawks can spot a mouse from hundreds of feet away. We cannot. Cheetahs can outrun an automobile. We cannot. Pigeons can home. Some snakes can see infrared light. Electric eels can shock. Bats use sonar to see a vivid image in a pitch black night. Some sea life can smell across their entire bodies. Some animals can see in many places at once. Some animals can fly with wings. Some animals can exist in water. Some animals can walk on water. Some animals can biologically clone themselves.

We can do none of these things... yet.

These are truly majestic, awe-inspiring creatures, with kinds of abilities we would ascribe to science fiction if possessed by a human. What symphony is life! It is the music of time, the music of creation.

We are just as remarkable, for the human is the only animal presently native to Earth that can read and write, and even then only in the last few thousand years. We have just begun the process of learning about our Cosmos.

There are some 6 billion individual homo sapiens animals presently living on Earth. Human animals have evolved to communicate through physical gestures and vocal sounds, organized in temporal patterns called speech, and have learned to record these communications through the process of reading and writing. A human's brain is sufficiently advanced for it to be able to correlate observations of itself and its surroundings. Possessed with remembered senses and the ability to interpret time -- periodicity, duration, and precision -- the human has evolved a way to manipulate its future. Homo sapiens animals refer to themselves individually as "me" and collectively as "we".

We have become a flower, long since evolved from seed of the plant that created us.

Human beings are undergoing evolution of the mind as the ability to observe is enhanced through technology and perhaps biology of our own imagination. The rapid rise in our ability to acquire truth through observation has, in the past 100 years, given us a most remarkable and I believe physically significant new sense, what you might call a sixth sense: the ability to see into time -- both the past and the future. This sense of *prediction* exists in the mind alone, as the synthesis of the perception of the past and the imagination of the future. The human is now made even more remarkably unique because of its rapidly growing ability to learn history and predict the future from knowledge drawn from dramatically enhanced skills and tools of observation -- skills such as science and tools such as telescopes. The more truth we perceive, the better we predict change.

What wondrous revolutions in the history of worlds must occur when its most advanced beings come into such power? How powerful and sacred must evolution be, to have created such beings as we? As you and I evolve to be able to know more through greater and greater powers of observation, what secrets of time will we be able to predict, or even at some point "see" in our mind's eye? Might we someday be able to reverse this power of observation and "make" reality with imagination alone?

Whatever we may see or do in the future, we must pause now and look upon the history that I have just briefly described, all 15 billion years that we know of.

What an incredibly precious legacy of creation are we! Even though I've known and studied it for years, my jaw still drops whenever I consider the majesty of our history.

The Cosmos has labored for billions of years to produce us. Regardless of what life may exist outside of Earth, we know that we are unique and special, for whatever life outer space may hold for us to find, we know that we are rare in time. Our gestation just to the point of reaching homo sapiens has been one of incredible majesty, through hundreds of millions of human generations worth of time. And the combination of all human mechanical or electrical technology ever invented pales in comparison to the simple beauty of

a single fish in the sea, let alone a human being. The Cosmos simply must have wanted to create beings like us.

What other forms of animal are we likely to meet one day as we venture into the Cosmos? What capabilities might they possess which perhaps lay undeveloped or nonexistent in homo sapiens? And how might we acquire such powers? Will it be a natural process, or a derivative technology? Both?

As we prepare to ask yet the most important questions of our future, we must ask ourselves a deeply profound question: what from this *distant* past of creation do we wish to take with us, as a species, into the *distant* future? We often ask this question for knowledge recently acquired to be reused soon, but almost never do we ask this question with an eye for eternity. Evolution has taught us that only the most robust and stable creations will survive over time. If we wish to make our distant future the brightest it can be, what are the core principles we must learn from our past in order to flourish in the crucible of billions of years of future evolution?

I and my co-authors address that question in this book.

EVOLVING IN A PLACE CALLED EDEN IS A PROMISING YOUNG CIVILIZATION...

Look at the headlines seriously this past week. Observe the magnitude of the issues in play, in the history of civilization. In mid January, 1999...

The White House and Congress are locked in battle over the significance of the President's lies about his sex life told while under the oath of truth. Vindictive congressmen attempt to remove from office a man whose personal qualities are quite typical of American life today.

The first "city in space" is under construction. Spacecraft are heading out to survey asteroids and physically examine the polar caps of Mars. A single European currency has begun its life. Uneasy truce remains between Catholic and Protestant in Ireland. Peace or war between Arab and Jew is to be determined by election. Confrontation of superpower and dictator has the world watching. And the Balkans continue to boil.

Preparations are underway for an unprecedented test of computing technology at Year 2000. The rise and fall of modern national economies abroad troubles the world. Brutal weather patterns and systems continue to circle the globe.

You are participating in all of this. You are part of every concept, person, event, headline, and consequence as the Cosmos unfolds time.

Richard P. McBrien, in his book Catholicism, has related in striking metaphor the radical degree to which human history has changed in the last tiny fraction of our human existence. He notes that if the last fifty thousand years were divided into periods of sixty-two year life spans, we've enjoyed eight hundred lifetimes. "Six-hundred and fifty were spent in caves. Only during the last seventy lifetimes has it been possible to communicate through the written word, and only during the last six lifetimes has the human community had access to the printed word."

We traveled by camel caravan before the Christian era, at about eight miles per hour. This form of travel was common for just under eight thousand years, until the chariot, which pushed human travel to 20 mph. Steam locomotion of the early nineteenth century allowed speed of only thirteen miles per hour, and the sailing ships, before and after, were slower still. By the latter part of the nineteenth century, with improvements in the steam engine, we reached speeds of 100 mph. As McBrien notes, it had taken this hominid species millions of years to be able to communicate with each other and travel to each other. Then, in a revolution during the last part of the *last one* of our eight hundred lives of the last fifty thousand years, we have seen planes, jets, rockets, and space travel with astronauts and space capsules and the capacity to reach Neptune and one of its moons, and send back computer-enhanced photographs from celestial bodies at the edge of our solar system.

And during just the last lifetime, we have seen the rise of literacy, telegraph, telephones, radio, television, transistors; and computers, microchips, and the Internet; and radio telescopes and space probes with the capacity to send and receive messages to the outer reaches of space. Perhaps the most haunting and emotive of all advancements in communications recorded in our lifetime are the images from the Hubble Space Telescope -- humanity's first clear-vision eye peering into the secret places of the history of the heavens.

Clearly we live in an important time.

But what knowledge of history has the culture of the United States, the bastion of Western idealism, left in the minds of its children? Instead of McBrien's yardstick of time at 800 lifetimes in 62 year units, let us resolve further to human generations, for simplicity's sake let's say averaging just over 20 years from time

one gives birth to the next. By that reckoning, what is the state of mind of our newest generation, the last in 2400 human generations over 50,000 years?

Circling recently on the Internet was a simplistic but wonderful answer to this question, adapted below.

The people who left high school last spring across the U.S. were born in 1980. They have no meaningful recollection of the Reagan era and did not know he had ever been shot. They were prepubescent when the Persian Gulf War was waged. Black Monday 1987 is as significant to them as the Great Depression. There has only been one Pope.

They can only really remember reading about one president. They were 11 when the Soviet Union broke apart and do not remember the Cold War. They have never feared a nuclear war. "The Day After" is a pill to them, not a movie. CCCP is just a bunch of letters. They have only known one Germany. They are too young to remember the Space shuttle blowing up, and Tianamin Square means nothing to them. They do not know who Momar Qadafi is. The New Deal is most likely a rebate on a new VW Beetle.

Their lifetime has always included AIDS. They never had a Polio shot and likely do not know what it is. Bottle caps have not only always been screw off, but have always been plastic. They have no idea what a pull top can looks like. Atari pre-dates them, as do vinyl albums. The expression "you sound like a broken record" means nothing to them. They have never owned a record player. They don't enjoy playing Pac Man and have never heard of Pong. Star Wars looks very fake, and the special effects are pathetic. There have always been red M&M's, and blue ones are not new. What do you mean there used to be beige ones?

They may have heard of an 8-track, but chances are they probably have never actually seen or heard one. The Compact Disc was introduced when they were 1 year old. As far as they know, stamps have always cost about 32 cents. Zip codes have always had a dash in them. They have always had an answering machine. Most have never seen a TV set with only 13 channels, nor have they seen a black and white TV. They have always had cable. There have always been VCR's, but they have no idea what Beta is. They cannot fathom not having a remote control. They were born the year that the Walkman was introduced by Sony.

Rollerskating has always meant inline for them. They have never heard of King Cola, Burger Chef, The Globe Democrat, Pan AM or Ozark Airlines. The Tonight Show has always been hosted by Jay Leno. They have no idea when or why Jordache jeans were cool. Popcorn has always been cooked in a microwave. They have never seen and remember a game that included the St. Louis Football Cardinals, the Baltimore Colts, the Minnesota North Stars, the Kansas City Kings, the New Orleans Jazz, the Minnesota Lakers, the Atlanta Flames, or the Denver Rockies (NHL hockey, that is). They do not consider the Colorado Rockies, the Florida Marlins, the Florida Panthers, the Ottawa Senators, the San Jose Sharks, or the Tampa Bay Lightning "expansion teams."

They have never seen Larry Bird play, and Kareem Abdul-Jabbar is a football player. They never took a swim petrified by the idea of Jaws. The Vietnam War is as ancient history to them as WWI, WWII or even the Civil War. They have no idea that Americans were ever held hostage in Iran. They can't imagine what hard contact lenses are. They don't know who Mork was or where he was from. They never heard the terms "Where's the beef?", "I'd walk a mile for Camel", or "de plane, de plane!". They do not care who shot J.R. and have no idea who J.R. is. M.A.S.H., The Cosby Show, The Facts of Life, Silver Spoons, The Love Boat, Miami Vice, WKRP in Cincinnati, and Taxi are shows they have likely never seen.

The Titanic was found? They didn't know it was lost. Michael Jackson has always been white. They cannot remember the Cardinals ever winning a World Series, or even being in one. Kansas, Chicago, Boston, America and Alabama are places, not groups. McDonalds never came in Styrofoam containers.

Very few have felt the deep emotion from the hand-me-down memories of World War II and the Holocaust. Fewer still have any recollection of the basis for the Cold War. Almost none can personally

relate the two World Wars together, distinguishing or even remembering their teachings for the future of the world. The term appeasement doesn't ring a bell for them. Neither do they admire Churchill as a hero, if they even know why they should.

Do you feel old now? Remember, the lucky few of the people who don't know these things will be in college this year.

And in four years, they'll be part of the workforce. I hope college teaches them well.

Ungrounded in technical history they may be, this new generation is the most innately conscious of all before it. It has been barraged with the loudest, most, biggest, brightest, strongest, tastiest, foulest, best and worst that western marketing can offer, all delivered in THX sound, with digital fidelity, on widescreen, at 400Mhz and at 28.8Kbps, or better yet 56, or even better, a megabit over a cable modem. To the older generation, if you don't know what those words mean, let it be your clue to the vast, valuable and potent new advanced culture now leaping up on its own two feet, as the very skeletal and nervous system of our future civilization.

Despite all this noise, or perhaps because of it, this new generation is more resonant with the soft, subtle, true qualities of life than any before. Their culture reveals it in the way they talk, dress, eat, work and socialize. They have no desire for war. They have an intuitive concern for the world, a concern that leaves some depressed, others lost, some on a returning path to religion, and a few motivated like crazy to save the Earth from humanity. Most of them feel powerless in a society where the only thing that seems to have power is money. They have the least desire for amassing wealth since their great-grandparents' generation, which, incidentally, was in the previous 62-year life span. Sometimes the best advances can come only after funerals for arthritic minds.

But those arthritic minds were, in their own right, great. At the beginning of modern times, the reach of Western civilization was essentially limited to sophisticated agriculture and trade. By the end of the second millennium, Western civilization had transformed the "community primate" into an "individual explorer" of the Cosmos.

We courageously mapped the globe and savagely conquered what we mapped. We created institutions, constitutions, charters, and charges that enshrined our visions. In the 20th Century, humanity engineered electromagnetism – light. We engineered communication. We engineered transportation. We engineered economics. We engineered civilization itself. We engineered wars, and we fought warriors to preserve freedom. We discovered the power of the atom, while not yet fully understanding its purpose or function.

We created the military industrial complex. We exaggerated fear. We created Mutually Assured Destruction. We created the consumer. We created the statistic. We came close to destroying civilization, yet we pulled back just one step from the brink.

I believe it may have been that event which accelerated their action.

We landed on the Moon. We created the computer. We created the mind of humanity – the Internet. We deciphered our DNA. We began to write about the meaning of such remarkable events.

These foundations have empowered us with the freedom to learn through experience things that could never have been learned without the experience. These experiences have served to imprint our collective consciousness – the soul of the species. If, as most philosophers believe, human consciousness is actually now empowered to evolve itself, then the 20th Century will certainly be remembered as the creator of the stage and the author of the script through which such conscious evolution will be witnessed by all.

I believe that the society created during the 20th Century has set the stage for the completion of the human being's destructive descent from the trees, in preparation for the reestablishment of a garden on Earth, and a leap into far higher branches of Cosmic evolution, the heavens.

Whatever the future may hold for homo sapiens, the generations of the 20th Century have bequeathed to its youngest generation the tools and the opportunity to remake the world, and do so within an emerging Cosmic worldview whose reach, I argue in this book, appear to be beyond even the wonders presented in science fiction. In my worldview, civilization stands at the edge of a grand and sweeping revolution. The enhanced perceptive skills of our young generation will be crucial, as will be the more seasoned talents that teach it through studies and entertainment, for the sweep of human learning stands at a cusp of incredible magnitude. As I stare into this cusp, I see a period of collective learning and change more intense than any across written history. Beneath the "Good Morning America" mentality that focuses our thinking on the mere instants of modern life, stunning revolutions in thought are emerging from nearly every discipline of science, history, and theology. These revolutions will ripple out to affect every aspect of human existence, and indeed the very growth and direction of the tree of life on this world.

What do these revolutions look like when combined? As Occam's Razor demands, the complex hypothesis is beginning to look a lot simpler, and far grander in implication. Consider the following argument as the possible form of the cusp towards which human civilization appears to hurtle.

Assertions:

(1) Science has formed our "high-confidence" knowledge of the nature of Nature. Its disciplines and methods are amoral, and as such, have given us the ability to discern a view of Nature without prejudice. But in this blindness to prejudice, science has ironically given us the ultimate vision for intellectual discernment of two real ethical fundamentals. Answering Einstein's great question is now simple: whether the Cosmos is beneficent or neutral, the ethical mandate is clear: *truth* and *love* are fundamental to evolution.

(2) Traditions of faith have been the primary determinants of homo sapiens behavior. Traditions of faith have given ethical compass, guiding instinctive behavior. Buddhist traditions teach of unity of all things. Hindu traditions teach of a progression of order throughout time. Judaism focused monotheism towards the idea of a God concerned with our lives. Christianity personified God through a man. New Age beliefs suggest that God is within all things. All of these traditions of faith share a common bond in the primacy of the ethical mandate of *truth* and *love*. Can we dismiss the seminal events of these traditions as simple myths?

(3) Homo sapiens has evolved, but something is missing from random natural selection. Something beyond mere randomness is at work in the machinery of Nature. And in the depths of research at the leading edge of science – physics' "quantum" mechanics – we are now seeing that the fabric of Nature is responsive to consciousness, even at a distance.

(4) "Big Bang" Cosmology is incomplete. We've but glimpsed the Creation process, and everyone agrees it will fundamentally determine the very nature of "light". The distance and discord between the sciences of matter and the religions of spirit narrow.

(5) We've discerned the human genome and designed forms of life. We will quickly be empowered to design life forms at our whim and fancy. We are now empowered to alter the tree of life, creating new branches, and tearing down ancient ones.

(6) We've seen evidence of the ability to "engineer spacetime" for purposes of energy & propulsion. What is the alternative explanation of the Casimir Effect? Though not widely studied by physicists, emerging "zero point physics" suggests that practical interstellar travel is firmly in the realm of possibility.

(7) We've invented "the mind of humanity" -- the Internet -- as the way to store and access human knowledge. The Internet is reconstructing Western civilization's economics, and, as bandwidth increases, will soon reconstruct its media, entertainment, and politics as well.

What is my conclusion of these assertions? It looks increasingly like science fiction is soon-to-be-fact. In my view, many of the fantasies we see on movie screens are more than fiction, for they represent real technical possibility. Revolutions in science of this incredible order remain undiscovered by our entertainment and media communities. But scientific revolutions of this order require more than entertainment and news. They require humble contemplation. They require humility. They represent newly discovered powers of "godlike" significance. They represent discoveries of "spiritual" significance.

It is the last generation of the 20th Century, schooled in wonders of science fiction, that will carry our world into this future, perhaps through some of our greatest crises, certainly through some of our most painful challenges, and hopefully into the grandest of discoveries. Let us teach these young men and women well, for we are entrusting the future of the world to them, and humanity's future across the Cosmos.

**EVOLVING IN A PLACE CALLED EDEN
IS A PROMISING YOUNG CIVILIZATION.
WE GROW MORE DANGEROUS...**

"Against his paralyzing smile and honest realistic style, our best protection is that we in fact live in eternity."

-- W. H. Auden, in reference to the devil

Whether you believe in a God or not, it's safe to say you would agree that humanity has learned, however imperfectly, many lessons over the past several millennia, lessons entrusted to progeny through the oral and written history of our ancestors. Let us revisit several of the more painful ones...

Holocaust is a term of enormous gravity to a huge portion of the world's population. It should be so, for in reference to the slaying of six million Jews, there are few crimes against life that compare. There have been many conflicts among regimes in history where loss of life has been comparable or even larger in simple numbers, but very few such catastrophes can compare in depth of evil to the systematized and ruthlessly calculated machine of death constructed by Adolf Hitler, for no reason other than hatred.

Adolf Hitler and his top three henchmen, Himmler, Goering and Goebbels, were the architects of the atrocity of the Holocaust. It formally began on January 30, 1933 when Hitler became chancellor of Germany, and continued over twelve years to May 8, 1945 - VE Day. Rising from the ashes of the first world war and the Great Depression to be the Führer of Germany, this leader created a system of murder never before witnessed in the history of the world.

There have been numerous acts of inhumanity in the 20th Century, such as the massacre of one million Armenians by the Ottoman Turks, the starvation of five million Ukrainians during Stalin's forced collectivization, the murder of 1.5 million Cambodians by the Khmer Rouge regime, and most recently the killing of one million Tutsi by the Hutu in Rwanda.

However, in no other case have the efficiencies of the modern industrial age been put to such diabolical use as in Germany under Hitler.

The systematic persecution of Jews and other undesirables started immediately upon the Nazi rise to power. The Nazis' ideology of racial purity and superiority coupled with their hatred and intolerance of 'others' spurred their actions forward. Initially, the Nazis merely excluded 'undesirables' from society and forcibly induced them to leave the country.

The war in Russia saw the formation of four SS units of 3,000 men each, expressly formed to kill Bolshevik sympathizers, but eventually turned into the field arm of the Nazi death machine. These mobile units were ultimately responsible for the death of over two million Jews and other 'undesirables'.

According to Stephen Ambrose, in *New History of World War II*, "These groups were called Einsatzgruppen, and although 'Bolshevik leaders' were supposedly their major target, most of the victims were Jews. Other victims were 'Asiatic inferiors,' gypsies and 'useless eaters' such as mentally ill or terminally ill people. One Einsatzgruppen unit reportedly killed 6,400 Polish mentally-challenged patients. According to the Nuremberg International Military Tribunal on War Crimes, altogether in the Soviet Union the SS killed two million men, women and children. Most were shot. Himmler, who had witnessed an execution, was upset at the sight of women and children being killed in this way, so he ordered another method: they were put in gas vans so constructed that at the start of the motor the exhaust was conducted

into the van, causing death in ten to fifteen minutes.

Concerns over the effectiveness of the operation, field morale in both the civilian and military personnel, and in an attempt to keep this operation secret from both the Jewish population and the world led to the search for another solution. The Final Solution, Endlösung, was made effective at the Wannsee Conference in 1942. The Final Solution was the brainchild of Reinhard Heydrich and executed with brutal efficiency by Adolf Eichmann. The Final Solution called for the extermination of all Jews and other 'undesirables' at six major death camps in Poland, Auschwitz - Birkenau, Belzec, Chelmno, Majdanek, Sobibor, and Treblinka.

Auschwitz - built originally as a POW camp in summer 1941 - was expanded into a labor and death camp. The brutal conditions at the camp ensured that precious few humans survived. Of the total of 16,000 Red Army prisoners sent to the camp only 96 survived. Of the 405,000 registered prisoners, as opposed to those who were exterminated upon arrival, only 65,000 survived. In one brutally efficient two-month period in March 1944, of 350,000 Hungarian Jews sent to Auschwitz, 250,000 were gassed. Over the course of 1944, 10,000 Jewish lives were extinguished each day. In total, between two and four million Jews and another two million non-Jews had been gassed by the time the Red Army liberated the camp in late 1944.

"Trainloads of Jews in sealed boxcars, packed so tightly for so long without food or water - often for days - that the dead could not fall down, arrived regularly at the Auschwitz siding. Guards threw open the doors and began shouting at the Jews to get out and line up. They were marched to an SS doctor who made a visual scan and pointed either to the gas chamber or to the labor camps. Infants, young children, old people, pregnant women, the disabled, and the sick were sent to an immediate death; between 20 and 40 percent were sent to the labor camps where they remained until, too weak to work any longer, they too were sent to the chambers.

Just outside the gas chambers, the Jews were ordered to strip and told they were going to take showers, for delousing purposes. First they were shaved, and their hair saved for stuffing for mattresses and the like. They were herded into the chamber, which looked like a high school gym. Once they were packed in, the door was sealed shut and cyanide gas was pumped into the room through showerheads. After a minute or two of screaming that no one except the other victims heard, there was silence. After clearing the gas from the room, inmates - often Poles and sometimes Jews, always under extreme duress - entered and pulled gold teeth, and tore open anuses and vaginas of the cadavers to probe for hidden jewelry. The task completed, the bodies were taken by handcart to the crematory furnaces. The ashes of the dead went to farmers to enrich their soil."

Exact statistics for the actual total number of human beings exterminated in various programs during the war are difficult to arrive at, as the Nazis destroyed many records, or in other cases kept none at all. The numbers of dead among European Jewry can be traced to census records and Nazi official tallies presented during the Nuremberg trials. In total 5,796,129 or 60% of the pre-war European Jewish population were killed during the Holocaust.

The American Holocaust

There are perhaps a few other holocausts in recent history which can compare in depth of evil, and they strike painfully close to home.

As a time and place of flowering for human civilization, Renaissance Europe began a period of ascendancy, which was to last well into the 20th century. The cultural and scientific rebirth, whose foremost catalysts included Da Vinci, Michelangelo, Gutenberg, Galileo, and Copernicus, found a receptive home in the relative economic, political and religious stability of late mediaeval Europe. This rebirth gave the Europeans the scientific and technical means to act on a strongly emerging economic motive, fueling the Age of Discovery. This cultural and intellectual rebirth also provided the philosophical and moral justification for horrendously evil actions, as newly acquired power often does.

With the power of weapons and global mapmaking, both cultured through mastery of the seas, late fifteenth century Europe chose to remap the globe. Europe launched a massive rape of the new world, when through the Pope's authority the newly discovered territories were divided between Spain and Portugal. One Spanish historian wrote that what they sought was "To serve God and His Majesty, to give light to those who sat in darkness, and to grow rich as all men desire to do."

In 1501, the Spaniard Rodrigo de Bastides had reached the coast of South America, on orders from his king. Moving westward towards the snowcapped mountains soaring into the clouds, he met the Tairona, one of the most advanced of the Indian societies. The Tairona had transformed the slopes of their mountains establishing roads, structures, and irrigation systems of amazing complexity. Perhaps their most remarkable, or at least most remarked, quality, however, was their gold work, among the most beautiful produced in the Americas. Trading posts quickly emerged, and in 1526 de Bastides founded Santa Marta, now a part of the modern nation of Colombia. Santa Marta soon became a center of trade.

For hundreds of years, as Europe's conquest of the last preserve of Eden swept across the continent, an uneasy truce, pregnant with anger and anguish, hung over the northern coast. In the remarkable words of the very thoughtful ethnobotanist, Wade Davis, in his book *One River*:

"There was conflict and rebellion, and death by enslavement and disease, but the Spaniards made no systematic attempt to destroy the Tairona. Few in numbers, they were initially content to control the coast, trading fish and salt, axes and metal tools for gold. The Tairona valued peace even as they retreated further into the hinterland.

It was not until the end of the sixteenth century that the Spaniards launched a campaign of annihilation. Their excuse - and the Spanish, obsessed as they were with jurisprudence, always had an excuse - was completely bizarre. Hungry for gold, they were nevertheless scandalized by the phallic and sexual representations that formed a significant motif in Tairona ceramics and gold work. The chronicler Gonzalo Fernandez de Oviedo described a gold piece weighing twenty pesos that depicted "one man mounted on another in that diabolical act of Sodom," a "jewel of the devil" that he righteously "smashed at the smelting house at Darien." Such graphic depictions of sodomy confirmed their deepest suspicions. It was known that Tairona men gathered regularly in large ceremonial temples, often for nocturnal rituals that lasted until dawn and excluded women. From experience the Spaniards recognized that when their own sailors and soldiers spent long hours together, it was only the restraint of Christian virtue that kept them from "unnatural acts." Since the Tairona were not Christian, it was obvious, at least to the Spanish, what the Indians had been up to at those nightly assemblies. When in 1599 Santa Marta's new governor, Juan Guiral Velon, undertook the final destruction of the Tairona, he did so charged with the certainty that all of his enemies were homosexual.

The subsequent struggle was as violent and brutal as any recorded in the Americas. Tairona priests were

drawn and quartered, their severed heads displayed in iron cages. Prisoners were crucified or hung from metal hooks stuck through their ribs. Those who escaped and were recaptured had their Achilles tendons sliced or a leg cut off. In Santa Marta, Indians absurdly accused of sodomy were disemboweled by fighting dogs in obscene public spectacles. Women were garroted, children branded and enslaved. Every village was destroyed, every field burned and sown with death. When the Spaniards took the Tairona settlement of Masinga, Velon ordered his troops to sever the noses, ears, and lips of every adult.

Marching inland, Velon attempted to vanquish an entire civilization. In the midst of the carnage, the Spaniards never forgot their ultimate mission. To ensure the legality of their deeds, before each military action Velon's captains read aloud in the presence of a notary public the famous Requirement, a standard legal document exhorting the heathen to accept the true faith. Recited in Spanish without translation, it was but a prelude to slaughter. "If you do not accept the faith," the text read, "or if you maliciously delay in doing so, I certify that with God's help I will advance powerfully against you and make war on you wherever and however I am able, and will subject you to the yoke and obedience of the Church and of their majesties and take your women and children as slaves, and as such I will sell and dispose of them as their majesties may order, and I will take your possessions and do all the harm and damage that I can."

The Spaniards were true to their word. In the end the entire Tairona population was either dead or given over as slaves to the soldiers as payment for their services. Those Indians who survived were expected to pay the costs of their pacification. On pain of death they were prohibited from bearing arms or retiring into the Sierra Nevada. But flee they did - a tragic diaspora that brought thousands into the high mountains, leaving behind a desolate, empty coast of ruined settlements, shattered temples, and fields overgrown with thorn scrub and ultimately redeemed by the forest."

Seven years before Rodrigo de Bastides found Santa Marta, Cortes had stood in awe of the beauty of Tenochtitlan, the capital of the Aztec empire.

That great city was twice the size of Spain's largest city.

At the same time, the children of Europe were raping North America too.

European exploration, colonization and settlement of North America forever altered the evolution of Native American civilizations. Rather than an equitable mingling of cultures and societies, Native American culture and society was largely displaced and destroyed by disease, war and migration. The Native American civilizations were simply not equipped to resist or even absorb the successive waves of migration.

This pattern has occurred many times through the millennia, anytime there has been a conflict between cultures over land, sustenance and wealth. However, never has the impact been so profound as to depopulate an entire continent of 90% of its population, with no hope of revival.

Exploration in the 16th century by the Spanish, French, English and Dutch introduced new elements to tribal societies. Disease, the horse and trade with the Europeans profoundly impacted Native American civilization across much of North America. The diseases introduced by the Europeans had the greatest immediate impact, decimating much of a native population which heretofore had never been exposed to them and consequently had no immunity.

This was especially evident in the civilizations along the Mississippi, Tennessee and Ohio River valleys, which were almost completely depopulated due to the disease spread by DeSoto's expeditions. Indeed, it was disease that was the greatest European killer, wiping out virtually all of the populations of the Caribbean, Inca and Aztec Indian populations as well.

Horses, which were introduced to the American southwest by the Spanish, had a largely positive impact, forever changing the way of life of the plains Indians. With the horse, they became great nomadic hunters

dependent upon the great bison herds of the Plains for their way of life.

Less arbitrary were the changes which came with the establishment of trading posts along the great river valleys and the settlements along the eastern seaboard. These settlements and trading relationships set the pattern for waves of displacement that were to characterize the interaction between natives and Europeans across the following four centuries.

European politics played a key role in the colonial expansion of the 17th and 18th centuries. The colonies were important contributors to European economies and were consequently involved in every major European war of the time. With the consolidation of power along the eastern seaboard, Indian populations began to realize that the territorial hunger of the Europeans would not be sated. Consequently, tribes were involved in many European conflicts, siding with one European nation against both European and Native enemies in a desperate fight to preserve their territory and way of life.

This was to be a losing battle.

The American Revolution would ultimately create a new chapter in this struggle as the young nation sought to control all the land in its domain. The young nation articulated a philosophy for what it saw as its divine right to consolidate its hold and to expand and settle westward into Native American land.

The attitude of European settlers in America is described by Reginald Horseman in *Race and Manifest Destiny*, "...this inferior native population, as a result of amalgamation, and that great law of contact between a higher and a lower race, by which the latter gives way to the former, must be gradually supplanted, and its place occupied by this highest of races....(The United States) will occupy the entire extent of America, the rich and fertile plains of Asia, together with the intermediate isles of the sea, in fulfillment of the great purpose of heaven, of the ultimate enlightenment of the whole earth, and the gradual elevation of man to the dignity and glory of the promised millennial day."

The "Trail of Tears" episode perhaps best exemplifies the government-sanctioned effort to displace the native population in favor of American settlers. Over 15,000 Cherokees were forced to migrate to the Indian territories in Oklahoma. Of those a little over 2/3 survived the journey. With the expansion westward into river valley's and ultimately into the Plains, the struggle continued. Numerous wars were fought, and treaties broken as the natives sought to halt the migration westward and preserve their way of life, but to no avail.

The notion that the natives were inferior justified the settlers rights to take and settle the land with little regard for the Native American lives.

With each lost battle and with each treaty, the majestic and humble Native American way of life was further demeaned through the 20th century, as Native Americans were reduced to living on government-policed reservations. Thus, Manifest Destiny for the Native American population proved to be a destiny of enslavement, poverty, death and cultural extermination.

By 1900, the taking of the bulk of the American continents would be complete.

A Century of Total War

As war was coming to a close in America, the originating militaristic tendencies, honed through centuries of conquest, continued in the hearts of European nations. The mentality of empire building was confronted with the constraints of Earth's surface area. As one might with hindsight expect, the culture of imperial war turned inward on itself, with the unfortunate, unplanned, and totally groundless entrance into the First World War. A system of total war, driven by technology that made it possible, occurred as Europe fought two civil wars in the same century which came to involve the entire world. It would not end until November 1989.

Within the 20th century, legal restraints to prevent war, or failing that, to make its effects less savage and all-pervasive, were obliterated: institutions for the peaceful resolution of disputes were ignored or destroyed; limitations upon armaments, distinctions between combatants and non-combatants, civilians and soldiers, neutral nations and belligerents, laws of engagement designed to limit war to a discernable, finite "battlefield," all were lost.

To a limited degree, some of these elements began as sinister portents of the fate of the next century in America's Civil War. The power of defensive positions with increasingly accurate rifles became apparent. A war of attrition appeared, where economic resources became irresistible factors in determining success, whatever the individual valor and the quality of generalship on the weaker side.

Hence, making war on an entire society, including the civilian economic and social infrastructure of the opponent, seemed necessary. Sherman's "March to the Sea", cutting a miles-wide swath of civilian destruction through the heart of Confederacy, was a mild harbinger of the horror of the next century.

The First World War was an accidental war, a war none of the major powers wanted, but each feared. Acting on those fears, responding to stereotypes of the other that they themselves had largely created, then seemingly frightened by their own projection, each side acted upon their own self-fulfilling fearful prophecies about the other. Political and military leadership among the participants never reached the high point of mediocrity. Unlike the wars before and after, territorial aggrandizement didn't seem to be a major declared factor. Neither faction was economically advantaged. England and Germany, each other's major trading partner, linked historically by history, language, and by monarchical intermarriage, lurched into war driven by their own fears, a naval arms race, and finally, an alliance system which invited pugnacious smaller states to involve the major states in a war which could never result in anything but catastrophe.

A contemporary English writer noted that, "the lights are going out all over Europe, and they will not come on again in our time." In fact, the lights never came on upon the society that entered the war. The major imperial systems of governments that plundered the Americas fell. The genocidal slaughter suffered by Russia and the chaos that followed birthed the Bolshevik Revolution. The economies and the societies of all the major participants were catastrophically damaged. With the advent of trench warfare and machine guns, battles occurred resulting in mass slaughter never before seen. Each state was exhausted. After a brief respite, the world plunged into a deep depression; Germany into both depression and the greatest inflation the modern world has ever seen. The war-guilt clause of the Versailles Treaty was the final element necessary for a mad genius of manipulation to come to power in a Germany roiling in tumult which never came to rest since the advent of the First World War.

Unlike the First World War, the Second World War was a war of naked aggression where something much closer to battles between good and evil actually occurred. Nevertheless, the seeds of the Second World War were clearly planted in the first great struggle, rendering almost inevitable a re-engagement of most of the same powers in another war more terrible than the first.

Now, tanks and massed mobile artillery would allow for an extended front to sweep back and forth

throughout Europe, devastating huge areas of the continent, sometimes several times. Civilian casualties for the first time exceeded military losses. The greatest crime and sin of the twentieth century occurred in this context, the holocaust: Hitler's nearly successful effort to exterminate European Jewry. Mass bombing of civilian centers of population occurred by day and night. Fifty million people died, and Russia, where the ultimately critical battles of the Second World War were fought, again in the same century lost 10% of her population. With awesome portent for any later world war, the Second World War ended with the advent of the nuclear age and the use of the only nuclear weapons ever employed in war, dropped by the United States upon Hiroshima and Nagasaki.

A Cold War commenced as unlikely allies, forced together by the threat of Hitler's Germany, broke apart under the fears and the naked extensions of power by the former allies against each other. Soviet Russia, a creature of World War I, attempted to secure Eastern European border states as satellites and allies to buffer them against yet a third assault on the motherland in the same century from Germany. The United States and its European allies saw this extension of brutal totalitarian dictatorship as an atrocity in itself, and, more threatening, a portent of an intention to extend Soviet power throughout Europe.

The natural assumption of "a state of war" is that it is a highly unnatural condition resulting from desperate and unique conditions necessitating the resort to violence, normally to be avoided. The natural condition is that of peace. Now, war became the "natural condition". Whole generations of people never really knew a condition of peace. The Cold War introduced war of the mind: the definition of our national interest and identity negatively determined by the existence of the enemy. We entered an age of perpetual war of the mind. Our advantage, our well-being, was defined as that which threatened or made more precarious the well-being of our enemy. Where previously, peace was the norm, highly valued, sought and protected; now, war was the norm, manifest always in the mind, and frequently in hot wars between surrogates of the two super powers, punctuated by covert and overt actions of sabotage, espionage, assassination of political and military leadership of the enemy, and covert undermining of governments thought to be sympathetic with the enemy, even though legally and diplomatically a condition of peace and diplomatic relations and recognition existed between the superpower and the target state.

In Asia, the Chinese civil war, interrupted by Japanese attacks on Manchuria and then throughout China, resumed with the triumph of Chinese Communism. The Cold War was born, now fully worldwide, including both Asia and Europe. This war was punctuated by dozens of hot wars. Some of these were resumptions of wars of national liberation against colonial governments, the result of the reimposition after World War II of the last vestiges of European colonialism and imperial power. Other wars, most prominently Vietnam, were clearly fought between surrogates or proxies of the two superpowers which emerged from a Europe in which the other states of Europe, previously the world's most powerful, were now exhausted shells of their former selves, at least until a later economic recovery. The existence of nuclear, and then thermonuclear weapons, served at once as deterrents to full-scale global war, and as potential instruments of global destruction if ever, by accident, miscalculation, or design, they should be used.

A numerical nuclear arms race between the superpowers commenced. This was joined by a technological arms race which always threatened to allow one or the other superpower somehow to leap beyond the opponent and tempt one or the other to accept the suicidal proposition that such advantage might allow one side actually to fight and "win" a nuclear war. Finally, a horizontal nuclear arms race began among the previously non-nuclear states, extending outward the number of nuclear states able to trigger a nuclear conflagration.

Finally, the collapse of the Soviet Union under the weight of its own monstrous bureaucratic and totalitarian structure allowed respite. With the decision in November 1989 of President Gorbachev not to intervene in genuine national uprisings in Eastern Europe, as his predecessors had done so brutally decades before in Hungary and Czechoslovakia, the Soviet empire crumbled in all of Eastern Europe; the Berlin wall fell; and the contagion of freedom swept through the Soviet Union, ending the last great imperial system to survive World War I. The century of total war was at its end.

Once started, each of these wars had to be fought. The best human decision-makers could not reasonably control the past, given their knowledge. The momentum of hatred founded in utter lie had been energized and would run its genetic course. The roots of 20th century military conflict stemming from politically-based ideological hatred were sown in war guilt and wallowed in the pain of an economic depression.

The Century of Total War cost uncountable hundreds of millions of lives and resulted in the political, military, and industrial superstructure to facilitate wars over ideology. This superstructure now begs to be dismantled and its energies and funding redirected into defensive functions and peace-keeping operations.

The Nature of Human War

Throughout recorded history, wars have been given intellectual justification in the creation of a myth of inherent distinction of rights to freedom among groups of intelligent beings. We have fought wars because we could not communicate with the "enemy". We have fought wars over the color of skin. We have fought wars over cultural rituals. We have fought wars over political structures. We've fought wars over rivers, islands, mines, oil, water, and seas. We have fought wars over economics. And we have fought wars for no identifiable reason at all other than vague fear.

But the most common ideology employed to justify war is the precisely the one least able to do so: faith. We have fought wars over every religious difference imaginable, and yet a rational mind strains to find scriptural basis for any religion's god declaring an offensive warmaking intent, however confidently invoked by "inspired" leaders. It is in mis-interpretations of religious teachings on every nation's part that humanity has killed the most combatants and civilians alike. Had there been integrity to the history of core spiritual teachings rather than interpretive dogma, no wars would ever have been fought.

But, perhaps only the fighting of these frightening wars, and the cumulative personal experiences of great loss, can now equip humanity with the ability to see the ugly truth of this.

When we do one day discover or receive the means to voyage to other worlds across the heavens, to touch other verdant continents and valleys and oceans, will we not engage and enforce the most solemn "prime directive" to intelligently interact with a foreign biosphere? We in the United States of America must remember that it was our ancestors who came from Europe to plunder the Americas. The lessons of what happened must never be forgotten.

An End to Slavery?

If holocaust and war are the relatively loud and declared crimes of humanity, then humanity's most heinous silent cultural choice has been the toleration of enslavement. Both science and religion have taught us nothing if not this fact.

When Western humans think of slavery, they often envision slavery involving blacks and native peoples in the Americas between the latter part of the 15th century during early European colonization, up to the late 19th century and the end of the US Civil War. Slavery was hardly unique to the United States, the New World, or what is considered western civilization and culture. Nor was it restricted to this time period.

It is likely that indentured servitude has been a part of world society as long as war and trade have existed between differing peoples. It is well known that the ancient Chinese, Indians, Egyptians, Babylonians, Persians, Greeks, Romans, and Arabs practiced some form of slavery. The indigenous peoples of the Americas and the coastal regions of West Africa practiced slavery as well. These practices were supported worldwide for centuries, the last governments officially abandoning slavery as recently as 1962.

The definition of slavery varies with culture and time period. These differences have made cross-cultural and temporal studies of slavery difficult. Nevertheless, there are attributes common to all slave-owning cultures and to all definitions of slavery.

One common point of view in slave societies is that ownership of one person by another is perfectly right and natural. Another is that a slave is something less than human, a chattel similar to a farm animal or pet, to be used and disposed of as needed. Western civilization best exemplifies this. Ownership of human chattel was a central characteristic of the slave society's socio-economic way of life and cultural development. It is remarkable that an institution that existed for thousands of years should in little more than a century be abolished and considered wrong in the eyes of God and the laws of man. This is a profound change, which gives hope for our continued social evolution.

The first known western slave society was the Hellenic culture of Athens in during the 6th through 3rd century BCE . In the earliest times period, the slave population was composed of prisoners taken in battle, criminals, Athenians (often children) bartered for debt, abandoned children.

Kidnapping, especially of women, was common. Only the poorest and most wretched of Athenians were without slaves. Slaves performed a variety of tasks. On the estates of the wealthy, they were household servants; farmers, estate managers, and tutors. House servants were typically all under the direction of the woman of the house, the wife or eldest daughter of the owner. Some of these houses had as many as 10-20 slaves.

Slaves were the artisans and craftsmen of Athens. They also served many bureaucratic functions such as scribes, clerks and accountants. At one time slaves administered the police and treasury. Some estimates suggest that slaves accounted for close to one third of the Athenian population.

In 570 BC. The leader Solon, faced with a crisis in the Athenian economy, instituted laws that cancelled debts of the enslaved and repealed the laws allowing debtors and their families to be sold into slavery. From this point on, Athenians relied on non-Greeks for slaves, importing them from around the Aegean through regular trade. During their brief period of imperialism the Athenians used more direct methods. In 416 BC, an expedition landed on Melos, a neutral Aegean and sacked it, executing all men of military age and selling the women into slavery. As justification, they said:

"We believe that Heaven, and we know that men, by a natural law, always rule where they are stronger. We did not make that law nor were we the first to act on it; we found it existing and it will exist forever, after we are gone; and now we know that you and anyone else as strong as we are would do as we do."

-- Thucydides History of the Peloponnesian War 5.105

The life of a slave was not easy. While there were laws that protected slaves against the vilest abuses, slaves were not considered citizens. Non-Greek slaves were barely considered human, though there was the notion that they might be raised from their baseness. Their masters chose their names. Slaves were not allowed to marry, although they developed a pseudo-marriage known as countubernium that had no legal status.

Children born of female slaves were automatically slaves. It was not unusual for criminals, the mentally disturbed, and slaves who have fallen out of favor with their masters to be selected to crew ships or work mines. This was hazardous work and often ended in the death of the slave.

In contrast to how they were treated under Athenian law, slaves were a principal source of the prosperity of Athens. This provided leisure time for the aristocrats to develop what we now call “the roots of Western civilization”. Athenian imperial power would be broken at the end of the Peloponnesian War in 371 BC. Their social system would continue for another forty years, until conquest by Phillip of Macedonia at the battle of Chaeronea in 338 put an end to their way of life.

The Roman civilization between about the 2nd century BC and the 4th century AD would be the next western culture to develop a slave society.

Early Rome was little more than a collection of farmers, craftsmen and laborers which developed into a loose knit society. The conflict with Carthage and the result of the Punic and Greek wars would change all that. By the end of 202 BC, Carthage was beaten, with all its territories from North Africa to Spain subjugated and turned into Roman Provinces.

The Greeks, who had aligned themselves with Carthage while Hannibal laid waste to much of Italy, were subjugated and enslaved. When Carthage later defied Rome’s order to move its inhabitants inland, the entire city was put to the sword. The city was leveled, and surrounding lands salted to insure that Carthage would never rise again. The few that were spared were ushered off in chains. Rome had gained an accidental empire.

With much of the farms and towns outside the Rome destroyed. Many once-able farmers and artisans found themselves without work, and no way to support themselves. But most of the citizens who had stayed within the walls of Rome were vastly unaffected and saw the destruction as an economic opportunity. Merchants and aristocrats quickly bought up the land that had been ravaged. In the conquered lands, the military and their sponsors did the same. They had no way of working the vast acreage themselves. They wouldn’t have to. There were many able hands available.

There were a number of ways people became slaves. Thieves, debtors, murderers and those who avoided military service would end up as slaves. If a child’s mother was a slave, then the child was a slave as well. Anyone captured and taken prisoner by a hostile people, regardless of citizenship, would become a slave.

Piracy, kidnapping and the selling of newborns were also common, though the latter died out in the later Republic as the number of foreign slaves increased. Like Athens, Romans preferred to use foreign slaves when they were available. People who were far from home, with no family, a different look and languages stood out and were easier to capture if they escaped. It is a pattern that would be repeated in the Americas.

The hardest labors were in the mines, as naval oarsmen and in rural field labor. Most of this grueling work was done in chains and perceived slackers were quickly beaten or killed outright. Slaves also served as servants, cooks, musicians and artisans. Dozens would be maintained to run the households of the aristocracy. In the cities, public slaves were hired as bureaucrats and functionaries, tending to the needs of running the city.

As the empire developed, more and more of the population were considered slaves. By the 1st century, it is

estimated that a third of the population of Rome were slaves. The ratio in the large estates was even larger, sometimes ranging between five or ten slaves to each free person.

Romans developed an early fear that their slaves were going to revolt and slaughter their masters, due to growing numbers and their masters' brutal treatment. Thus, any hint of uprising would be dealt with swiftly and brutally. When the Spartacus rebellion was crushed in 71 BCE, over 6,000 slaves were crucified and placed along the Appian Way as a reminder of what awaited the rebellious slave.

No act was too small to take notice. In 61 BCE Pedanius Secundus was killed by one of his slaves. As a result, all 400 of his slaves were put to death in order to frighten others from following the example.

In the later years, as the empire began to collapse, external slaves became harder to come by. Roman slave society ended as the slaves were legally converted into coloni, or serfs who were tied to the land. This system would last in the West until the end of the middle ages.

But the best known and documented of slave societies were those of the so-called New World. At the beginning of the 16th century, the Portuguese and Spanish were moving into the Americas and establishing their colonies. Their initial quests were to become rich mining gold and silver, but following 1645, the explosive demand for sugar shifted their focus to growing sugar cane. The work was highly demanding and required extreme amounts of labor. European diseases were ravaging the native populations and the harsh climate took its toll on Europeans colonists.

The Europeans found the perfect solution: African slaves. During the years between 1500 and 1867 when the slave trade was abolished, it is estimated that 9-10 million African slaves were shipped to the Americas. At least another 2-3 million did not survive enslavement.

About 41% went to Brazil, 47% to the Spanish Americas, British and French Caribbean, 5% to the Dutch, Swedish and Danish colonies and 7% for what eventually became the United States.

About 2/3 of all slaves shipped over ended up in sugar colonies. At their time, sugar plantations were considered among the world's most profitable enterprises with returns ranging from about 10 to 20%.

At first, transport of slaves to the New World was primarily a Portuguese enterprise. They had mapped a significant part of the African coast as early as the mid 15th century in their search for gold and a route to the orient. They soon found that slaves were a much more valuable commodity. At first they raided the African coastlines for slaves, but it became clear they could do much better by trading with the coastal tribes.

In 1445, they established their first base. Slaves were captured inland by Africans and brought to the coast for sale. This usually consisted mostly of males, the females and young often being kept for lineage incorporation. The slaves were exchanged for weapons and exotic goods, the former of which gave the native slavers significant advantage over their rivals.

Over the years, a vast and complex slave network developed to feed the demands for labor, depopulating whole regions of Africa and decimating entire tribes. The slaves were examined, shackled, and shipped off for work in the New World. The system developed by the Portuguese would serve the Dutch, Spanish and English just as well. To the slavers, their goods were just a different type of cargo, similar to cattle, hogs or any other economic livestock.

In most of the New World, the Africans grew to vastly outnumber the Europeans. On some of the Caribbean islands, the number of slaves ranged from more than a third in Cuba to some 90 percent in Jamaica, Antigua and Grenada. In 1800, almost half the population of Brazil was slaves, though that number decreased rapidly with the end of the slave trade and a program of free immigration by the government to draw in more Europeans. Of all the proto-American slave societies, only that of the

southern United States had a population where the numbers of whites was initially similar to blacks.

While slaves were first brought to Virginia in 1619, the English mostly relied on indentured servants rather than slaves. Tobacco was initially the profitable crop of the south, and did not lend itself well to the work-gang methodology used around the Caribbean. The number of slaves an owner had was usually small, rarely more than a handful, except on the largest plantations.

Women were bought as domestics and nannies while men more commonly worked the fields. All that would change in the latter half of the 18th century. The opening for settlement of the New Southern States of Alabama, Mississippi and Louisiana made huge areas of land available for cultivation, bringing with it a huge need for labor. In 1793 Eli Whitney invented the cotton gin which would revolutionize the processing of cotton for use in textiles, increasing the demand (and profits) in cotton ten fold over night.

Planting and cultivation of cotton did indeed lend itself to the gang methodology. Hence, the pattern that developed the huge sugar cane plantations of the New World would be played out again in the New South, but this time with cotton. By 1850, nearly two thirds of the slaves on plantations were engaged in the production of cotton.

An advantage of cotton was that it could be grown profitably on less land, and required fewer skilled laborers and artisans for processing. The labor was less rigorous, some of which could be easily performed by men as well as women. The ratio of men to women was closer in the United States, more like 3-2 versus anywhere from 8 or 20 to one in other parts of the new world, which helped create a boom in slave population.

By 1825, it is estimated that the southern United States accounted for more than 35% of all the slaves in the New World, the majority of whom were at least second generation slaves. The profits from the sale and maintenance of slaves coupled with proceeds from textiles were one of the most profitable enterprises of the day.

It wasn't until the beginning of the 18th century that the emerging social, religious and political systems would call the legitimacy of slavery into question. While most Western Europeans considered the notion of enslaving other Europeans barbaric, this notion only covered people who shared the religions and culture of Europe.

Indians, Africans, Asians, and other supposed cultural inferiors were excluded. Some thinkers in Scotland, France, England and America voiced strong misgivings about the handling of Africans, but their objections were noise in a hurricane. A few looked beyond simply the slave issue at the impact the institution had on the social system.

“The whole commerce between master and slave is a perpetual exercise of the most boisterous passions, the most unremitting despotism on the one part, and degrading submissions on the other. Our children see this...and thus nursed, educated, and daily exercised in tyranny, cannot but be stamped by it with odious peculiarities. The man must be a prodigy who can retain his manners and morals undepraved by such circumstances.”

-- Thomas Jefferson

History and precedent were on the side of the slavers, and opportunity itself can be a harsh mistress. But things were beginning to change. Some began to open themselves to listening to others and hearing about alternative perspectives. What was it like to be a slave? How did the slaves see life? Fredrick Douglass made it perfectly clear that what American Blacks saw was considerably different than what most saw in this land of opportunity.

“What to the American slave is your Fourth of July? I answer, a day that reveals to him more than all other

days of the year, the gross injustice and cruelty to which he is the constant victim. To him your celebration is a sham; your boasted liberty an unholy license; your national greatness, swelling vanity; your sounds of rejoicing are empty and heartless; your shouts of liberty and equality, hollow mock; your prayers and hymns, your sermons and thanksgivings, with all your religious parade and solemnity, are to him mere bombast, fraud, deception, impiety, and hypocrisy - a thin veil to cover up crimes which would disgrace a nation of savages.”

-- Frederick Douglass - July 4, 1852

What is amazing is that in the span of just over a century, the unassailable institution of slavery which was accepted without question would be outlawed in the entire western world.

The Society of Friends (Quakers) in both England and Pennsylvania were some of the first to take action against slavery of any kind. In 1774 they voted for expulsion of any member participating in the slave trade and in 1776, required any members holding slaves to emancipate them or be expelled. Pennsylvania adopted a gradual emancipation program in 1780 to free all children of slaves born after 1780. Rhode Island and Connecticut followed suit three years later and this trend was more or less adopted by most of the northern states.

In 1787, formation in England of the “Society for the Abolition of the Slave Trade”, a non-sectarian organization originally made up most of the Quakers. They started by circulating pamphlets and preaching. Their influence grew first with the masses and then with parties in Parliament that eventually lead to the passage of the 1807 Act to abolish the slave trade.

The United States followed suit. Sweden and Holland agreed to abolish the trade in 1813 & 1814 respectively. France and Spain paid lip service to the agreement while, with Portugal, they continued the trade in earnest. Britain’s naval muscle was unchallenged, and they took it upon themselves to press agreements with other countries for them to patrol the West Coast of Africa.

In 1841 the Quintuple Treaty is signed under which England, France, Russia, Prussia and Austria agree to mutual search of vessels on the high seas to suppress the slave trade. Ships caught trafficking in slaves would be confiscated, their crews and owners tried according to the laws of their nation.

Between 1820 and 1870, the British captured some 1600 slave ships. The British presence increased the price and risk of acquiring slaves from Africa. Brazil, one of the largest importers of African slaves acquiesced in 1851. Cuba was the last of the New World to give in, yet in 1867, they too folded. The Atlantic Slave trade was over.

With the exception of the Southern United States, where the slave trade had ended, the end of slavery soon followed. By 1830, more than a third of the blacks in the New World were free. In the Spanish and French-founded country, only 25% were still slaves. Slavery was abolished in the old Spanish Americas between 1824-1850), all British colonies in 1838, French and Danish Colonies in 1848, Dutch colonies by 1863 and the United States in 1865. Brazil, one of the first countries to begin the slave trade, was the last to abolish it in 1888.

The legalized dealing in human flesh was finished.

So in little more than a century, societies round the world have taken significant steps in ending an institution that has been with us for as long as we’ve considered ourselves civilized.

This is not meant to imply that holding other humans as chattel has by any means vanished in the world. Slavery is still practiced, albeit more discretely, in remote corners of the world. Many cultures still consider women and children little more than property, subject to the will of their husbands, fathers or male siblings. Race, sex religion and ethnicity are still excuses for hate, violence and conflict.

And the world's economy is now dangerously close to enslavement by yet a different human classification system - the zeros and ones stored as magnetized bits on a hard disk computer holding our bank account balances.

The important lesson taken from our progress with slavery is this: we as a world society have the ability to change and grow. We can move and grow toward tolerance of others if we choose. We've developed missiles and weapons of mass destruction. Scientists have developed specialized biological and chemical weapons capable of decimating populations. The disenfranchised will eventually have access to sources of retribution like they've never had before.

Wisdom would suggest that we find solutions for living together and soon.

The Major Crises of the Our Generation

As John Petersen of the Arlington Institute cogently suggests, Y2K is a serious challenge, one that must be addressed at all levels of society, across the world. I also believe that Y2K will be conquered by humanity. Thanks to many loud and proactive stands taken by futurists and clear-minded technology thinkers, a lot has been accomplished in 1997 and 1998. The United States is likely to suffer some regional crises, and perhaps a few systemic ones, but is also likely to come through with society firmly intact if decisive preventive action and contingency planning continue through 1999. In this country, I now believe we will do far, far better than doomsayers suggest.

Other nations will have other levels of success in correcting the problem this year. Some nations' infrastructures will simply shut down because of their level of unpreparedness. Our attention must quickly expand to include international preparedness, for the world's problems will be the problems of the only remaining superpower.

All in all, I am hopeful and cautiously optimistic that the world will focus this year sufficient to tackle Y2K without fundamental catastrophe. But it is only the first major test of human-invented technology systems. I foresee many others.

However technology systems may evolve, there are other more fundamental and urgent societal problems facing us today. Because modern humanity has accelerated the pace at which we change, we have dictated not only the range of our positive experience, but also the pace at which we must learn painful new lessons – lessons impossible to foresee and equally impossible to avoid once glimpsed. Because of the acceleration of change in our lives in the past 100 years in particular, there are several crucial challenges beyond Y2K that humanity will face in coming years, fundamental challenges of its own creation. Y2K pales by comparison.

In my opinion, these challenges are best considered and reviewed by Eugene Linden in his stunningly insightful book [The Future In Plain Sight](#). Linden writes on science and technology for *Time*, and is well-respected across the media. Linden reviews several crucial problems faced by modern human civilization that are not widely appreciated in their portent, briefly summarized below...

"Hot Tempered Markets

During an extraordinary four-month period starting on June 27, 1997, the currencies of Thailand, Malaysia, the Philippines, Singapore, Indonesia, Taiwan, and Korea all went into a free fall. Even places like Hong Kong, whose currencies escaped the plummeting, suffered stock-market collapses. The contagion spread also to Latin America, where markets in Mexico and Brazil suffered precipitous declines...

That the Southeast Asian crisis came about only two years after the international community had supposedly learned the lessons of the Mexican crisis speaks volumes about the inherent volatility of an integrated global market. Bankers and policy makers can set up bailout funds or an international bankruptcy court, improve the flow of financial information, and take other actions designed to soothe markets, but these will not work. Both the Mexican and Southeast Asian examples demonstrate that market instability is about not only information and systems but perception and human nature. If the story is that Thailand or Mexico or Indonesia is a good place to get good returns on money, the relatively homogeneous investment community will put money into that country, ignoring warning signals until it is too late. Then they will all try to leave...

Without the \$52-billion bailout in Mexico, a cascade of bankruptcies and bank collapses could have plunged the nation into complete anarchy, fostering an immense wave of migration to the United States. The question facing Mexico, Southeast Asia, and the global investing community is whether these bailouts have bought nations time to institute necessary reforms, or merely postponed a much more painful day of reckoning...

The triumph of capitalism in this century has set the stage for an integrated global economy. This globalization of markets is supposed to spread risks and reduce volatility. Instead it actually increases the likelihood of violent swings, because of the homogeneity and synchronicity that characterize the actions of the institutions governing the flows of capital...

What happened was but a dust devil on a summer day compared with what will happen ever more frequently in the coming decades. Shocks and adjustments are an inevitable part of any economic system, but as the scale of the integrated market grows, these jerks will only increase in frequency and amplitude, promising more instability in the future.

The Decay of the City

In the poorer nations of the world, the latter part of this century has seen a massive, unprecedented migration to the cities. The percentage of population living in cities in the richer countries increased by about 37 percent between 1950 and 1995, but the percentage of urban dwellers more than doubled in less developed nations during that same period and more than tripled in the least developed nations, according to UN statistics...

Some public-health experts are now beginning to believe that the statistical portrait of the advantages of urban life does not capture dramatic declines in living standards for large numbers of the poor, who have become worse off than their counterparts in the countryside...

Studies of such disparate cities as Accra, Ghana, and Sao Paulo reveal that the poor bear a double burden of disease, finding themselves weakened by infectious water-borne diseases as well as chronic problems, such as heart disease and cancers, traditionally associated with affluence. Thus the urban poor have to face the added stresses of urban life in a weakened state (in Africa, between 40 and 80 percent of urban dwellers are afflicted with one or more parasite at any given time), drinking and bathing with expensive and often bad water, surrounded by casually disposed-of toxic materials and chemicals, eating unhealthy high-fat street food, breathing foully polluted air, and contending daily with ever more resilient microbes.

Unstable cities project instability beyond their boundaries through the incubation of microbes, through political and social disorder that can also spread as a contagion, through the disruption of national and regional economies, and through the launching of new tides of migrants.

No "Vent for Surplus"

If the exploding cities of the developing world are one indication of how demographic pressures will destabilize life in the next century, human migration is another...

History has shown that people tend to move when they find themselves squeezed for space, but what happens when there is no place to go? In the past, wildlands and new territories provided what the economist Adam Smith called a "vent for surplus." Migrants today are finding that there is no "vent for surplus" even as the population pressures and environmental degradation force greater numbers of people to uproot their families in search of new places to settle...

The example of Rwanda and Zaire shows how migration can set in motion ripples that in turn destabilize an entire region. The potential for catastrophic collisions of migrants and residents will only rise in the future, as the population continues to increase by roughly a hundred million a year....

Looming across the Pacific is a case in point. China, the world's most populous nation, faces building pressures for internal migration that terrify the government. Despite the economic boom that has given China one of the fastest-growing economies on Earth, the communist government sits on top of a powder keg of forces that could produce mass movements within the country on an unprecedented scale... China's

history is marked by a series of collapses brought about by uncontained population growth, according to Jack Goldstone, an expert on the history of revolution and rebellion. He argues that the stage is set for this cycle to be played out again...

What will happen as the Earth becomes more crowded while images of suffering become ever more available? Will people tune out and turn inward, if only to preserve their humanity? Very likely. Will xenophobia and various forms of racism become resurgent as those living in favored regions search for ways to rationalize their inability to help the millions who seek aid or entry? Also very likely. The point, however, is that population pressures affect societies in many surprising ways, putting huddled masses at the gates of their neighbors, yet fueling atavistic antagonisms that can dehumanize even those nations that feel smugly insulated from the overcrowded world. The rise of ecomigration offers a disturbing preview of coming upheavals.

The Ubiquitous Wage Gap

Thirty years ago, political scientists warned that a widening gap between rich and poor threatened to produce political and social upheaval. At that point, the richest 20 percent of the people on earth earned thirty times more than the poorest 20 percent. Instead of narrowing, however, that gap has expanded, so that the better-off now earn sixty times as much as the poorest.

This gap has widened despite statistics that show huge improvements in incomes, educational opportunities, and health care in the developing world, where the bulk of the world's poor live. How can this be? Part of the answer is a synergy between population growth and technological change, which rewards the educated and adept and marginalizes everyone else. Despite much-trumpeted improvements in nutrition and infant health, in 1996 more than 2.4 billion people - a number greater than the total world population in 1945 - still lived on less than \$2 a day. Despite an integrated global economy, two billion people, more than a third of the earth's human population, still live unconnected to the grid of the industrial world by either electricity or oil.

A country such as Indonesia can attract manufacturing jobs to the Jakarta area with labor priced at \$1.50 a day, but industries can easily pick up stakes and find highly motivated workers elsewhere, should either workers or their governments make demands for higher wages or better working conditions. In the meantime, unrelenting migration from overpopulated agricultural regions gives workers ever-declining leverage over employers. In Egypt, where five hundred thousand new job seekers enter the market each year, per-capita income has fallen from \$750 to \$620 in eight years.

As these surplus workers become more desperate, the line between freedom and slavery begins to blur. In northeastern Brazil, agricultural workers live in perpetual indenturement to landowners who pay them so little that, no matter how hard they work, they only fall deeper into debt. In Africa, an organization called the American Anti-Slavery Group has produced evidence of the return of outright slavery in Mauretania and the Sudan. The group reported in *The New York Times* that, as supplies of slaves secured by raids increased, the price of a woman or a child dropped from \$90 to \$15 between 1989 and 1990.

The return of slavery is noteworthy because it is the extreme expression of a trend toward the marginalization of those at the bottom of the global economy. In an integrated global economy, consumers will have increasing power over how products are produced, so slavery is unlikely to return on a large scale, since the concept has become morally abhorrent in most of the world. Of course, there is no guarantee that the global economy will remain integrated fifty years from now, or that slavery will still be morally repugnant. If it does return to any significant degree, it is more likely to be camouflaged by the paternalism of landowners, corporations, or the state.

Around the world, 4.5 billion people live in conditions that James Gustave Speth, administrator of the United Nations Development Program, describes as "deplorable." Of that number, one billion live in absolute poverty. In 1996, Speth wrote that every day sixty-seven thousand babies a day-twenty-five

million a year-are born into families so poor their parents cannot afford sufficient food to perform normal work. The International Labor Organization estimates that 750 million of the world labor force of 2.5 billion people are either unemployed or underemployed.

Thus the fruits of worldwide economic growth disproportionately accrue to an ever-smaller percent of the population. As a trend, this cannot continue without producing violent reactions from those left behind. The forces driving this widening gap - the population explosion, the integration of the world economy, and the automation of work - are fundamental.

Moreover, two of these forces, technological advance and the increasing integration of the global economy, are the keys to the present economy. So the world faces a dilemma: the widening income gap between rich and poor may be integral to continued economic growth as capitalism extends its reach and human numbers expand.

This widening gap is not confined to the developing world. In the U.S., twenty years ago the average CEO earned thirty-five times more than the average worker; now it is 150 times more. In that same period, the poorest 20 percent of U.S. workers have seen their real earnings drop by 24 percent, and the upper 20 percent have increased their real income by 10 percent. And in the wealthier nations alone, there are thirty million jobless...

It is not just blue-collar workers who find themselves forced from their customary livelihoods. Whereas population pressures are a force driving unemployment and underemployment in the developing world, technology impels change in the richer nations: the information revolution is completing the automation of the workplace that began two hundred years ago with the industrial revolution.

First armies of blue-collar employees were swept away by efficiency improvements, but now hundreds of thousands of clerical, managerial, and other white-collar workers who never dreamed they might be out of a job are being laid off. Between 1979 and 1993, 18.7 million white-collar jobs disappeared in the United States. New jobs have been created as well, millions of them, but often at lower pay, with fewer benefits and less security. Many paternalistic and bureaucratic companies that resisted the trend for white-collar layoffs during the 1980s used the recession of 1991 and 1992 as an excuse to achieve workforce reductions that were in fact driven by technological change.

If the future were a simple projection of the past, most of these dislocated employees would find new opportunities after an initial period of turmoil. This time around, such happy endings are improbable for many. Computers can now analyze sales data, perform credit analyses, and allocate discount seats on airlines, and workers who developed such esoteric expertise are finding themselves out on the street with unmarketable skills. Sandwiched between a younger generation and well-educated, cheaper labor abroad, they have nowhere to go but down.

This picture of the future is at extreme variance with the conventional wisdom in the booming economy of 1997. With the global economy growing at nearly 4 percent a year, and the U.S. economy in its fifth year of sustained growth, both downsizing and integration were beginning to look like flat-out wins. U.S. productivity was climbing, and by December 1997, the 4.6-percent unemployment rate was the lowest in thirty years and below the 5-percent level considered to represent full employment. The unprecedented bull market created a lot of paper wealth as well.

If there was a troubling sign on the horizon in the U.S., it was that consumer debt in 1997 reached an all-time high at \$1.2 trillion. This represented a 50-percent increase since 1991. Total household debt, which includes mortgages, reached \$5.4 trillion, and by 1997 the average person was spending 18 percent of income just to service debt, the highest level since the mid-1980s, but in terms of burden, the highest level ever, since consumers no longer had the ability to deduct interest on debt from their taxes.

Personal bankruptcies were also at an all-time high. By the middle of the year, credit-card delinquencies

reached 7 percent, also near record levels; since most credit-card debt is repackaged by the card issuers as asset-backed bonds, rising delinquencies can rapidly spread through the financial system, undermining the liquidity of the card issuers as well as the institutions that trade the obligations.

Perhaps more significantly, the rising delinquencies revealed a fault line in the otherwise rosy economic landscape. A lot of different reasons account for the rise in bad credit, ranging from bad judgment on the part of credit-card issuers, to the declining stigma of bankruptcy, to the failing efforts of those with downsized incomes to maintain their former standards of living. But the combination of full employment with rising indebtedness and delinquency suggests that people are working harder, yet not making enough money to meet their material aspirations.

This fault line was also indicated by low inflation, conventionally interpreted as an indicator of the robustness of the economy. Ordinarily, low unemployment would be an indicator of future inflation, because, with labor scarce, employees could demand raise hikes and also pour money into the economy, driving up prices. In the 1990s economy, however, years of low unemployment and a booming economy did not result in wage hikes or in strong increases in consumer spending (except in services - a further indication that people were working harder, and thus forced to eat out more often and pay for functions like child care and laundry that housewives used to perform, before the advent of the two-income family).

Savings continued their long-term downward trend. In the post-downsizing era, workers had nowhere near the perks, the guarantees, or, in many cases, the incomes they had in previous decades. Moreover, even with labor theoretically scarce, employers could turn to a steady supply of immigrants willing to work for very little. This is exactly what has happened. As the boom of the mid-1990s created a demand for new employees at the bottom end of the wage curve, Hispanic workers, many of them immigrants, joined the workforce at four times the rate of black or white workers.

The Federal Reserve Bank worried about inflation, but the combination of job insecurity, decreasing family incomes in the middle class, and global overcapacity in most industrial sectors created a strong momentum toward disinflation, if not deflation. Even as goods were getting cheaper in the U.S., thanks to imports, many Americans found that their discretionary income was relatively flat. The rising credit-card delinquencies reflected the reality that borrowers can suffer in deflationary times, particularly since real interest rates in 1997 were at a very high 4 percent and above.

With inflation, which tends to guide wage increases, hovering at 2 percent, many people were steadily falling behind in their ability to pay bills. If inflation and raises continue to fall because of global overcapacity on almost all goods, then the indebted will fall behind even faster, unless interest rates come down as well.

The entrepreneurial and gifted will still thrive in these harsh times for workers, but a growing population of white-collar workers whose fortunes have turned sour depresses the prospects of a country as a whole. In the U.S., consumer spending drives the economy, accounting for two-thirds of GDP. As mentioned earlier, layoffs in recent years have focused on professionals, managers, and administrators, the segment of the middle class that traditionally has the most discretionary income...

A disenfranchised managerial class could pose a real threat to stability in the future. One need only look to the chaos of Russia in the early 1990s to see how difficult it is for white-collar workers with obsolete skills to adapt to new conditions, and how much mischief this politically sophisticated class can cause when it finds itself stripped of its perks.

This means that a large pool of voters will have more reason to remain angry and dissatisfied, becoming fertile ground for radical and xenophobic causes. The danger to society comes not so much from extreme events such as the 1995 bombing of the Alfred P. Murrah Federal Building in Oklahoma City, which was the product of paranoid fantasies about government conspiracies, as from ever-wilder oscillations in political positions, in which moderates lose influence and the more passionate extremists take control of the

political agenda...

This is one reason why the widening gap between the top and the bottom income groups cannot continue to widen indefinitely. The few can maintain their wealth only with the permission of the many. If the middle continues to stagnate in the developed countries while the top prospers, the majority will demand action, and politicians, being politicians, will give it to them. But what can they offer the middle and the poor, given the ceilings imposed by an integrated global economy?

One thing politicians can deliver is inflation. As a policy tool, inflation is always tempting, because it redistributes wealth from those who lend to those who owe, while camouflaging who did what to whom. Again, however, the potential negative reactions of the integrated global market means this is not really a policy option for the U.S. - which is not to say that it will not happen anyway...

In the developing world, the resolution of the widening gap promises to be even more unruly, as the examples of Mexico and China cited earlier suggest. Many of the countries with the widest gaps between rich and poor, such as Russia and Venezuela, have fragile democracies. One conclusion of a confidential CIA-sponsored study of the nations that collapsed over the past forty years was that emerging democracies were more unstable than dictatorships when times turn bad, because people can give voice to frustrations for the first time yet democratic institutions remain too weak to address the underlying causes of the misery.

Could the widening gap between rich and poor resolve itself painlessly? Theoretically, this could happen if a global economic boom outpaced both population growth and the application of productivity improvements. However, even with global economic growth at nearly 4 percent a year in 1997, the gap continues to widen.

The gap might also narrow if labor became scarce again. With the global workforce growing by over fifty million people a year, this is not likely barring some catastrophe or radical social change. The latter happened in Afghanistan, where the Taliban has enforced a harsh version of Islamic law and forced women to abandon jobs for home life, greatly reducing the number of professionals.

The gap between the rich and poor cannot widen indefinitely without producing instability, and it is difficult to imagine it shifting toward a more equitable distribution of wealth without instability. The forces marginalizing both ordinary labor and knowledge workers derive from deep, long-term trends, including the automation of the workplace, the integration of the global economy, technological advances that permit companies to tap a global labor market for many types of work, and the inexorable expansion of human numbers. None of these trends will change without upheaval.

A Warning from the Ice

The messages the world has been getting from its atmosphere and climate have been hard to ignore, even if they are difficult to interpret.... It was not until 1985 that atmospheric chemists began to realize that the Antarctic skies were sending a message. The message was that humanity had unleashed an entirely new chemical reaction in the atmosphere, a process powerful enough to punch a hole the size of North America in a shield that protects life itself...

On March 26, 1995, a massive iceberg – measuring forty-eight by twenty-three miles – broke off from the Larsen Ice Shelf in Antarctica. At the same time, the three-hundred-foot-thick ice shelf that bridged the Prince Gustave Channel, between Antarctica and James Ross Island, disintegrated, allowing ships to circumnavigate the island for the first time in recorded history. Elsewhere on the frozen continent, rocks poked through ice that had been buried under nearly two thousand feet of ice for more than twenty thousand years. Since the 1950s, the Wordie Ice Shelf, Antarctica's most northerly stretch of permanent sea ice, has disappeared, moving the upper limit of the ice dramatically southward. And one gigantic river of ice within the West Antarctic Ice Sheet seems to be surging toward the coast.

The cause of the breakup of the peninsular ice shelves is clear. Since the 1940s, parts of Antarctica have warmed by nearly five degrees Fahrenheit, as evidenced by records at the United Kingdom's Faraday Station. The reason for the warming is far less clear, but these rapid changes in Antarctic ice must give pause to hundreds of millions of coastal dwellers around the world. The West Antarctic Ice Sheet is half the size of the U.S. and more than three miles thick at its deepest point. Were it to break up or slide into the ocean, sea level around the world might suddenly rise by twenty feet, imperiling billions of people, inundating ports, drowning megacities like Jakarta, putting almost the entire Florida peninsula under water, and flooding millions of acres of prime coastal agricultural lands...

As the costs of extremes in climate ripple through society, people in the developed world will rediscover that climate, fair or foul, is the context for all human activity, and that nature is more than a backdrop. This reorientation will have profound effects on everything from demographics to religion.

A Biosphere in Disarray

A few years ago, biologist Thomas Eisner and colleagues came upon a curious plant in the mint family that grew in only a few hundred acres in central Florida. Despite the fact that *Dicerandra frutescens* had tempting, succulent leaves, the plant was not bothered by insects.

Subsequent investigation revealed that, to protect itself, the plant produced a powerful insect-repellent, and that it had developed an arsenal of antifungal compounds as well. Like a midget R&D laboratory, this one plant, growing on a mere speck of land, may lead to new products for the multibillion-dollar insect-repellent and antifungal industries.

Who knows what other chemical miracles were produced by neighboring species but have now disappeared because of urbanization and agricultural development? Development might well have wiped out this species as well, except that the tiny niche where it grows lies in a biological preserve.

A happy story? just the opposite. Although the succulent is protected for the moment, most of Florida is an ecological disaster. Development-driven decisions to tame the Everglades and turn the land to agriculture have led to the collapse of its bird and mammal populations, and contributed to the destabilization of Florida Bay, which now suffocates under regular algal blooms. There are still wood storks and white ibises, but their numbers have dropped by 90 percent in this century. Each of Florida's indigenous species adapted to perform some role in the maintenance of the system. When populations collapse, the system falls into disarray, and ultimately that disarray affects humans as well.

This is the clue camouflaged by the more dramatic problem of extinction. Extinction has been sold to the public as a problem for humanity because drug companies lose valuable sources of new pharmacologically active agents. That impression has been bolstered by the negotiations surrounding the Biodiversity Treaty, which came out of the vaunted Earth Summit that took place in Rio de Janeiro in 1992. The treaty was supposed to be an international accord to protect species and ecosystems, but it has degenerated into a squabble over issues of intellectual property.

The loss of biodiversity, however, is much, much more than a problem of intellectual property, or even of protecting individual species. It cannot be fixed by protecting representative samples of earth's biota in preserves, or simply giving people rights to benefit financially from the wonders nature creates as species struggle to survive. Long before creatures begin to go extinct, the ecosystems that support them can get so fragmented or diminished that they become dangerously spastic, as both symbiotic and predator-prey relationships break down.

Earth has gone through five major extinction crises during the past few billion years, including the Permian extinctions of 245 million years ago, which wiped out three-quarters of the life forms on earth, and the cataclysm of sixty-five million years ago, which spelled the doom of the dinosaurs. It is going through one

now, and this promises to be a whopper...

Today's crisis is the product of the direct and indirect effects of human activities. Destruction of habitat is the biggest culprit. Migratory birds find they have no place to land or breed as wetlands and forests vanish. In Africa, brilliantly colored mouth breeding fish called cichlids are losing their species diversity and merging into a dull-colored mongrel because human contamination of the lake waters has made it too difficult for females to distinguish the markings of their proper mates.

Almost all the great apes in Africa are now endangered, in part from hunting, in part from disease, and in part from habitat destruction as land is converted for agriculture. With the great apes, the social upheavals of these changes can be as destructive as the loss of habitat itself, argues Lee White of the Wildlife Conservation Society: logging is driving chimp bands into neighboring territories, setting off fierce chimp wars in which as many as four out of five animals die in hand-to-hand combat.

Whereas many previous extinction events developed over time scales of many thousands of years and more, the present loss of biodiversity has accelerated in just a few decades. On any future chart plotting species diversity over time, the loss of biodiversity will appear instantaneous, as though some awful contagion swept around the globe indifferently extinguishing species. Not only rare, precariously specialized species like the river dolphin are succumbing, but also some of nature's most ubiquitous lines, such as frogs and sea turtles; the latter had survived the aftershocks of comets, the reign of volcanoes, and twenty ice ages, but not the combined effects of air and water pollution, ozone depletion, human encroachments on habitat, and the diseases unleashed by all of these disturbances.

Fictions like Jurassic Park notwithstanding, extinction is irreversible. Even if it were possible to bring extinct forms back to life, their importance to life on earth is the role they play in an ecosystem. As scientists have discovered, it is extremely difficult to restore a damaged ecosystem, even when all the parts are still available.

No one really knows how many species are disappearing, because no one really knows how many species there are. Scientists have documented only 1.4 million species of plants, animals, insects, fungi, etc., but the full range of the diversity of life on dry land and in the oceans may include between thirty and a hundred million species if bacteria and other microscopic life forms are included. Skeptics openly ridicule the notion that humanity should worry about saving every bacteria, gnat, or salamander, noting that nature herself has done in countless species down -through the ages without jeopardizing life on earth.

This is true, but not the issue. The loss of biodiversity puts humanity in the position of assuming that we know exactly which species we can do without. This is dubious, since scientists have only the most rudimentary notion of what makes an ecosystem work. In just a few cases do scientists know which creatures are crucial to the functioning of an ecosystem. Nor, since values and technology change in unpredictable ways, do we know which species might prove vital to our health and well-being in the future.

Moreover, if the only issue were conserving the greatest number of species, governments could go a long way in that direction by protecting so-called biodiversity hot spots around the world. Most of the world's species live in relatively few places, such as the eastern slopes of the Andes, the island of Madagascar, and the Philippines, through accidents of geography and continental drift. The Geneva-based International Union for the Conservation of Nature estimates that targeting for protection these strategically important ecosystems alone, which cover less than 3 percent of the globe, would ensure the survival of more than 50 percent of earth's biota.

The biodiversity crisis, however, is much more than a simple question of accounting. Animals, plants, and insects do not have to become extinct for an ecosystem to begin a wobble toward chaos. The issue is not simply how many individuals of a given species remain, but where they are and, equally important for migratory creatures, where they can go. Even though they may persist in large numbers in the aggregate, the disappearance of a species from a given locality can lead to a dramatic decline in an ecosystem...

Consider, for instance, the missing elephants of West Africa. Elephants are not extinct, but they have been hunted out of many of the forests of the Ivory Coast, Sierra Leone, Cameroon, Nigeria, and a host of other sub-Saharan countries. Today, they persist in any concentrations only in a corner of central Africa where the Congo, the Central African Republic, and Cameroon meet. (In Kenya, Zimbabwe, and a few other East and Southern African nations, elephant populations have recovered somewhat, but find themselves crowded out of most of their original habitat by farmers.) There is no confusing these forests with those in the region that no longer have elephants.

The remote Ndoki region of the northern Congo is crisscrossed with elephant trails. The main trails tend to run north to south, but they intersect with east-to-west trails linking the elephant thoroughfares to favorite watering holes and mud baths. It seems that elephants, like urban planners, favor a grid pattern for their transportation infrastructure. Scattered through the region are baies, or clearings, created by the elephants.

Countless animals benefit from the earthworks of this elephant civilization. Terrestrial herbaceous vegetation, or THV, abounds in the gaps the elephants create in the forest, thus providing food for the lowland gorilla, the bongo, and other large grazing creatures. Perhaps because of the transportation infrastructure created by elephants, this region of central Africa has some of the densest concentrations of gorillas on earth. Also, as the only animal capable of passing the large seeds of some species of trees—including some members of the mahogany family, which is prized by loggers—the elephant is crucial to the forest.

When elephants are eradicated, the forest gradually reclaims their roads and clearings, reducing ground vegetation. Over time, gorillas and the large ungulates disappear as well. A number of scientists argue that the trickle-down effects of elephants may explain why Africa's forests abound with large mammals but the tropical forests of South America do not.[]

Few would doubt that the largest land mammal on earth would play a crucial role in its ecosystem, but smaller, less charismatic creatures also turn out to be surprisingly important. As noted earlier, parrot fish and other coral-reef grazers prevent algae from covering corals. When parrot fish are overharvested, corals suffocate, and the whole reef ecosystem begins to collapse.

Innumerable such dislocations are occurring around the world, always accompanied by unanticipated consequences. The disappearance of predators in the Northeastern U.S. led to a huge increase in deer populations and their attendant deer ticks. As a result, Lyme disease, unknown and unnamed two decades ago, is now epidemic virtually throughout the U.S.

It would seem that saving ecosystems should be an urgent undertaking that governments would pursue in their own interest. In reality, most governments treat the notion of ecosystem conservation as an amenity issue, except where wildlands provide watershed or some other function easily reducible to an economic argument.

Even if the international community made the preservation of earth's life-support systems the world's most urgent priority, the nature of ecosystems makes them ill-suited for the neat, systematic attempts at preservation favored by bureaucrats. What is an ecosystem anyway? Is it Yellowstone Park, or the swamps, pine deserts, wetlands, and other distinct biomes within the park, or is it the park and the surrounding forests and mountains that provide its watershed, corridors, and buffers? According to the current theory of ecosystem viability, if Yellowstone Park and its surrounding protected areas were not sufficient to protect the ecosystem, over time species populations would diminish. They have not, suggesting that Yellowstone, at least, is big enough to remain vital. Yellowstone, however, is the largest park in the lower forty-eight states. Most of America's other parks show declining populations of key species. This may suggest that the parks are either too small or too isolated from vital migration corridors.

That is the problem. Life on earth is so complicated that neither scientists nor governments can answer such

basic questions as the minimum size of a protected area necessary to preserve its life forms in perpetuity; the minimum population of a species before it enters the slippery slope toward extinction; or when a population of a species becomes so isolated that it loses its genetic vitality, expressed by the splitting of populations into evolutionarily distinct groups.

Even if scientists could answer these questions and impose ironclad protections for regions vital to ecosystems, both humanity and earth's creatures are now vulnerable to global forces unleashed by humans. For instance, the polluted Arctic front, a curse laid on the Far North by the industrial world, results from global air currents that pool the collected contaminants of the Northern Hemisphere over the polar region during wintertime.

The contaminants condense and fall with snow, and then, during the spring melt, they go into the tundra, where they are taken up by animals and plants and the people who eat them. Because of the Arctic front as well as ocean dumping of radioactive and toxic material, animals and humans in some of the most remote parts of the Far North carry huge concentrations of mercury and carcinogens in their fat and hair. Some seals in the Arctic Russian Far East have radioactive growth-rings in their teeth. The bodies of some whales that wash up in the mouth of the St. Lawrence Seaway contain such concentrations of toxins that they would be declared a hazardous-waste site in the United States.

Despite the fact that the pesticide DDT was banned by the U.S. and most industrial countries in the 1970s, its use in the developing world still threatens bird life. As reported by Les Line in *The New York Times*, the reach of the poisons extends to Midway Island, smack in the center of the Pacific Ocean and thousands of miles from any industrial or agricultural center; here DDT is one of several toxins accumulating in the bodies of the black-footed albatross, a giant pelagic bird with a seven-foot wingspan. The DDT, which the birds ingest with flying-fish eggs, causes their own eggshells to thin, leading to crushing and high mortality among chicks.

There is no part of the globe where species and ecosystems do not already feel the weight of humanity. A team of ecologists led by Peter Vitousek of Stanford University published an account of human domination of earth's ecosystems in the journal *Science* in 1997. The figures this group produced are awesome: half the world's mangroves, vital buffers and nurseries of the oceans, altered or destroyed; 66 percent of all recognized marine fisheries either at the limit of their exploitation or already overexploited; half the accessible fresh water on earth co-opted for human use; roughly one-quarter of all bird species on earth driven into extinction; and on and on.

Lurking in the future are the unfolding consequences of ozone depletion, which may be weakening the immune systems of many creatures on the planet, and the dislocations of ecosystems that may come from climate change. Clearly, a changed climate poses a profound threat to any creature that has adapted to a narrow range of temperature and rainfall, but the subtle ways in which climate change might throw ecosystems into chaos were dramatically demonstrated on remote Wrangell Island, in the Russian Arctic, just a few years ago.

The dominant land-based predator in this ecosystem is the polar bear. The white bear is a kind of mirror image of a marine mammal, spending most of its life at sea, albeit on top of the ice rather than below. Over the millennia, polar bears acquired a white coat, which concealed them from their prey; blubber for warmth; and oversize feet, which help them paddle in the water and distribute their weight so that the eight-hundred-pound creatures can walk on ice too thin to support a human being.

Together these adaptations make the polar bear a formidable killing machine. Bears conceal themselves by lying on the ice facing their prey, so that only their noses break the tableau of whiteness. It is said that if an unarmed man sees a hungry polar bear on the ice it is already too late for escape. The animal has been forced to develop its stalking skills because it is a pure carnivore. To survive, an adult bear must kill an animal the size of a seal every week of its life.

Ordinarily, the bears leave the island in the late spring and stay on the ice pack as it shrinks toward the north, returning to Wrangell with the fall freeze. In 1992, the ice pack retreated dramatically, stranding polar bears and walruses on the island for the summer. The result was bloody carnage, as predator and prey found themselves locked in tight quarters together.

The distinct warming of the past couple of decades has already had perceptible effects on smaller life forms as well. Camille Parmesan, an entomologist at the University of California at Santa Barbara, published a study in the journal *Nature* which detailed local extinctions and changes in the range of a butterfly called Edith's Checkerspot, an insect that is very sensitive to climate change. She found that warming temperatures had killed off the butterfly in much of the southern reaches of its range in Mexico, but that it was expanding its range in Canada and cooler areas at higher elevations.

Even without climate change, countless species will continue to decline. Ignorant of the workings of the systems that sustain us, we continue to squeeze them, not knowing whether we are squeezing them too much. There is absolutely no question that there will be a day of reckoning for this mad gamble.

David Quammen, author of *The Song of the Dodo*, which explores the anarchy wrought by the fragmentation of nature, quotes conservation biologists Michael Soule and Bruce Wilcox on the net result of humanity's impact on the biosphere: "There is no escaping the conclusion that in our lifetimes, this planet will see a suspension, if not an end, to many ecological and evolutionary processes which have been uninterrupted since the beginnings of paleontological time."

If scientists do not know how an ecosystem sustains itself, they do know that nature tends to seek equilibrium. As the players or circumstances change in any given ecosystem, nature adjusts, seeking some new equilibrium. That period of adjustment can be quite volatile. It can also take a long time for nature to recover from a spasm of extinctions. Ten million years is the figure that the great Harvard biologist E. O. Wilson uses, and it is useful to keep this figure in mind when those who doubt the seriousness of the fragmentation of habitats and the loss of biodiversity argue that societies can restore their ecosystems once they have made economic progress. Wildlands may be easily convertible into capital, but the reverse is not so easy.

Of all the clues to what lies ahead, the squeezing of earth's life-support system may have the most direct and immutable ties to future instability.

Living With Limits

A variety of signals suggest that the next round of improvements in food production are not going to be as easy as the gains achieved during the (past 50 years). Nor are there now great stretches of wildlands ready to be brought under plow, as there were decades ago, or great sources of untapped fresh water that might be used for irrigation. All of these factors, plus the stresses of producing enough of five basic crops – corn, wheat, soybeans, barley, and rice – to feed six billion people, have conspired to produce a compelling clue to the future: an increase in the volatility of the global food system...

Rice has a special place in the world food system, because it is the staple of people in warm nations who are too poor to afford anything else. If these three billion people cannot afford rice, they have nowhere to turn for food. What worries (experts) is that, to keep pace with population growth, rice production has to increase by more than 70 percent in the next thirty years... On the horizon are new strains of biotech hybrid rice and a high-yielding "super rice" now in development, but (experts) estimates that these improvements might ultimately increase the rice harvest by only 25 percent. Somehow rice growers must find another 45-percent increase. Where it will come from is not obvious at the moment, particularly given the trends in the world today.

The amount of irrigated land around the world has not significantly increased since 1992, and erosion, the salinization of fields, and other forms of desertification are taking millions of acres out of production each

year...

There are other instabilities inherent to the production of crops themselves. Developing an agricultural system to feed an expanding and increasingly urbanized world population involves a number of trade-offs. The need for standardized, easily transportable foods has tended to focus attention on just a few crops, creating a self-reinforcing cycle in which farmers look to increase yields and increase focus on ever-fewer varieties, grown in ever more similar ways. Bangladesh, which once grew ten thousand variants of rice, now relies on just five...

Primitive variants of basic crops such as wheat and corn carry with adaptations to an enormous variety of threats. Some corn varieties that originated in high-altitude regions of Mexico, for instance, have purple tassels that may store heat, providing protection from frosts and some defense against ultraviolet radiation; the latter issue may prove important as the ozone layer continues to deteriorate under assault by man-made chemicals... The danger is that pests, blights, or climate change may produce an emergency in one of the staple crops to which scientists cannot respond...

And then there is water. Whether or not climate becomes more unstable, water scarcity looms as a huge limit to future increases in productivity. The International Food Policy Research Institute estimates that 338 million people live in countries now suffering water stress, which means that the region suffers major problems during drought years. IFPRI estimates that by 2025 roughly 50 countries, with a total population of three billion people, will suffer water stress. This projection represents a nine-fold increase in water scarcity in just thirty years.

As per-capita supplies of fresh water diminish, global demand increases at 2.4 percent annually, a rate faster than population growth. This sets up a no-win competition between industry, agriculture, households, and ecosystems for ever-smaller amounts of water.

The competition for water also raises the likelihood of conflict between nations. Turkey controls the headwaters of both the Tigris and Euphrates rivers, and its past actions to dam the rivers have prompted its bellicose downstream neighbors, Iraq and Syria, to threaten war. Tensions could flare again as Turkey moves to complete its \$21 billion Greater Anatolia Project, which would divert water to irrigate 1.65 million hectares of agricultural land. The possibility of conflict over water extends to dozens of countries in Asia, Africa, and the Middle East, and at the heart of the tensions will be the issue of food security.

The experience of recent years suggests that the shrinking margin for error that comes with diminishing surplus stocks and humanity's ever-greater dependence on a small range of seeds and diminishing supplies of fresh water will foster ever-greater turmoil.

Infectious Disease Resurgent

Down through history, plagues and epidemics have brought low great empires. Measles and other diseases, not conquest, brought down the civilizations of the New World and Polynesia, and a virulent strain of influenza that circled the world in 1918-19 killed more people than World War I. Disease is an indicator of instability, but also a precursor to future instability. When ecosystems are out of balance, microbes tend to benefit; when populations of any given species explode, disease can bring them back into balance with brutal efficiency.

Microbes are configured to respond extraordinarily quickly to any environmental change. They have in their favor a particular reproductive strategy, dubbed the "R-strategy" by those who study population dynamics. R-strategists secure their perpetuation through massive reproduction in very short periods of time. The creatures that prey on microbes and the mosquitoes and other vectors that spread disease tend to be so-called K-strategists. These species have fewer offspring but protect and nurture them, so that they are more likely to survive. In the normal course of life, the two strategies tend to remain in balance, but when weather, human activities, the loss of biological diversity, or some other upheaval upsets that balance, the

R-strategists are better poised to exploit the opportunity and proliferate.

This is happening today on a massive scale around the world, as human activities and human movements transform the globe. Each of the clues discussed in earlier chapters contributes in some way to the resurgence of infectious disease...

Indeed urban migration in the developing world threatens to undo one of the great victories of the twentieth century, the first period in which it has been safe to live in cities. Previously, plagues and epidemics periodically decimated cities once they grew past their capacity to dispose of wastes and maintain clean water. Unfortunately, future historians may look back upon the respite of the past few decades as the last period in which it was safe to live in cities.

Diseases bring about profound change. In an article for the Journal of Preventative Medicine, Paul Epstein argued that the first European plague pandemic in 541 A.D., in the disorder following the fall of the Roman Empire, led to a flight from cities and contributed to the development of feudalism. The next pandemic, in 1346, brought about a labor shortage that broke the power of feudal landlords over labor and led to the development of the middle class. What social change will accompany the next round of plagues when they come?"

If Eugene Linden is correct in any one of these scenarios, and he is most likely correct in all of them, then human civilization is headed for fundamental changes within our lifetimes. The longer we ignore these systemic issues – and anything less than proactive systemic corrective strategies constitutes ignorance – the more severe the shift back to equilibrium.

Endangered Individual

I completed this section of *The Truth* with tears in my eyes, as I concluded reading and integrating into this text one of the more powerful tales I've come across in the course of this work. I realize that above all other reasons for investing so much in this project, it is out of anguish for the youth of our world that I am motivated to act.

In the fall of 1998, I asked a colleague of mine -- Drew Stepek, a phenomenally talented young writer in Los Angeles -- to share with me his thoughts as we approach the millennium. After a good conversation I sent him this message: "I'd like you to write a ten page characterization of civilization from the eyes of a young person entering college... What hopes, fears, desires, concerns, ethics, passions, hates, and motives do they feel at this time in history?"

He recounted this remarkable story. Parental guidance is suggested...

Nazareth

Some things are best left unsaid—things considered taboo, the most unspeakable acts, the most senseless of crimes. And, whenever I found myself faced with this cruel reality, I found myself hiding. Ironic that I would have ended up hidden at the most important transition of my life: my great escape. This was the only place that I found solace. I never told anyone. It was just me, my mind and my confusion. I wasn't an escapist. I never envisioned a threatened Harry Houdini rolling around in a chilling underwater grave, jealous of my hidden world. That would be the glamorized fantasy of a romantic. As a mentor, Samuel Langhorn Clemens would have found that petty. I always thought myself a realist; I observed the world, took notes and passed judgment. But suddenly, I had to face a 150 mile per hour wake-up call to my mortality and I struggled for answers. I always thrived to come to terms with the world and myself. The question: what could I possibly add to this world-unbound?

During my final year of high school, I discovered a way to cleanse myself of the confines of prom dates, football pep rallies and lame tri-screen, amped-up motivational speeches. The latter of those three interested me the least. Although the intention seemed honorable, those presentations were always M.C.ed by some hack ex-cop who evidently honed his audio/visual skills rather than his filling-out-retirement-paperwork skills. Besides, I don't believe these "Drink, Drive, Die" speeches are what George Lucas envisioned when he created THX. Instead of indulging in the lackluster rah-rah of high school life, I chose to pay my respects to a tree.

Don't worry. "Paying my respects to a tree" isn't slang for getting high. This tree was something for me to believe in. It was a place where I could write, think and be alone.

At the center of my Nirvana was a tree so magnificent, I never understood how it grew from the tainted soil of this town-condemned. Standing about 35 feet, the tree, which I jokingly dubbed "Nazareth," nested on the side of a bog bank contaminated by the atrocities of the now defunct paper mill upstream. The paper mill shut down about nine months ago, leaving most of our town, including my workaholic father, unemployed. Its closing however, didn't rid this area of the unbearable pulp burning stench, extenuated by the odor of dead animals. Most of the wildlife, of course, was killed drinking the shit that filled the water. It wasn't uncommon to stumble upon a carcass.

In one respect, I guess I could thank that paper mill, however. After all, it did give me the resources to fill out the necessary paper work for a scholarship. Strangely enough, 40-some odd years of the toxins from the mill didn't seem to affect the tree anywhere near as much as their absence had destroyed the town and its people.

Quite a persistent old bastard, it had been there for as long as I could remember. It had two extended limbs that sprouted upwards, eternally reaching for some sort of hope. The shaft displayed the agony of a martyr's face; twisted, torn and weathered beyond recognition. Brought to the tree by the moisture from the venomous swamp, were thousands of gnats and marsh bugs that sucked at its tears of sap. Although quite a majestic landmark, the beauty never stopped me from baptizing it after a good night of writing and a few too many beers.

A behemoth from top to bottom, this tree wasn't going anywhere. As a matter of fact, the base was so thick and soundly embedded into the ground, that even the swampy muck that sucked the life out of most seedlings was forced upwards, rolling right back down into the bog. Evidently, it remembered something promising about this shithole that must have existed long before my conception.

Wrapping and covering almost every other inch of the colossus was "the virus vine"—that was, in our part of the country, what people called the uncontrollable kudzu weed. You see, kudzu seemed to be the scapegoat that spread and covered and swallowed our town—eliminating it and all of its moral value from the face of the earth. It grew on houses, it grew on phone lines. If you left your car untended long enough, it grew on your car. Maybe the town was best that way. Unseen. Unsaid. Unnoticed. Unbound.

II

The first time that I made one of three donations to Nazareth was early last October. The wind had started to take on a burnt embers smell as it breezed through town, fighting away the always lurking smell of the old paper mill. This was not an Indian Summer. Quite the contrary, it was bitterly cold.

This particular night, the homecoming football game my senior year, the cheerleaders were so cold that not even their leggings and mascot-blessed sweaters could help them avoid the crowd heckling them, their mascara-enhanced, red, goose-bumped faces and their protruding headlights. Danny Wilks, bundled up and tribally face-painted red and black (the school colors), and I headed out to the game to cheer on the team. Sadly, there wasn't a whole lot to cheer for. We were the weakest and smallest team in our conference. Our homecoming rival blasted through our rag-tag bunch of, shall I say, maybe-they-should-have-played-soccer, players and left them for the over-populated janitorial staff to clean up. Actually they weren't much of a rival in the truest sense of the word, we hadn't beaten them in over 20 years. We lost 45-3. Luckily, our field goal kicker, Dave "Launch" Lonchar's day job was playing soccer. He seemed to be the team's only real asset and helped save a little bit of face. Although nothing was worse than losing your homecoming game every year, this year it didn't seem to faze football fanatic Danny. He was always impressed by the primetime feel of bright lights and shiny helmets but always insisted that he could never play the game because of his inability to concentrate. I'm sure that it had nothing to do with the fact that the kid stood five-six on his tip-toes and weighed a buck-twenty with his pockets filled with bars of gold.

I had known Danny almost my entire life. We grew up directly across the street from each other. Luckily for him, he was rich by our town's standards. His father, Buck Wilks had made some sound investments years ago and his mother, Trudy, came from old money. The youngest of four Wilks boys (Billy, Timmy, Tommy and Danny consecutively), he wasn't the brightest kid I knew. As a matter of fact, he had spent much of his early life juiced-up on Ritalin to control his outbursts of hyperactivity. Also plagued with ADD and dyslexia, he spent a lot of time in those "special" classes. However, all of these birthright setbacks never stunted his optimism.

"Hey man, you're not going to believe the news I got today." He said as we jumped into his overly-lifted Jeep CJ-7. As he popped the clutch to take off, he kicked his theme song, "Stigmata" by Ministry, into the CD player. As the thundering drums and stinging vocals of one of the vilest songs in history blared out of his trick, five-speaker system, he subtly injected, "I got into State early admission. I'm out of here, kid." It looked like Danny was to be the first. "And check this out man." As he reached into his center console, I saw a look unlike any I had ever seen him make: one of pride. "Look what my old man got me. He opened the letter before I got home from school today." Then, Danny showed me his pride. The one gift from his

hard-ass father that wasn't a token of his wealth...at least to Danny. It was a Mont Blanc pen. He didn't care about the price. Maybe because he didn't realize that it was worth more than I made in a month. He just cared about his accomplishment and what this pen, with his name engraved on it, symbolized. After being pinned as an underachiever and a dunce by ignorant teachers most of his life, it truly reflected his rising above the hubbub. "Dude, this pen can write on anything" he began, "and according to the little manual that came with it, it's indestructible." He then complemented his ridiculous sports fan outfit by placing his trophy in his front shirt pocket.

Then, I said the unthinkable. "Oh, so you can read." I don't really know why I said it. It just kind of fired out...out of jealousy.

"What the hell is that supposed to mean? I haven't seen any acceptance letter for you yet pal." He lunged back.

I quickly tried to salvage the conversation, as well as our friendship. "No, man. I didn't mean to say that. I just want to get out of here. I hate this place. There has to be a better truth, a better life, out there somewhere. Life doesn't revolve around an old, abandoned paper mill. The fools in this town really believe that it's going to re-open. I only write on paper. I don't give a fuck where it comes from."

"Whoa!!! Fair enough, dick head. Don't worry D, you're letter will come." He gave me a shadow boxer "duck and punch" and then gunned out of the high school parking lot. "If you could only learn how to speak as well as you write."

"Thanks. I'm an ass. Where are we going, anyway?" I asked.

"I don't know. A few of the football players are having a party. Probably to honor Lonchar for putting some numbers on the board." That was Danny's way of dressing up piece of shit with a cherry. It was a skill that he had mastered. For example, he didn't really see himself as a slow learner. He saw the teachers as moving too fast. "Hey man, what's up with Susan's step dad and the Christmas lights?" At first I didn't know what he was talking about. "Check it. It's the middle of October and he's already building a shrine to the baby Jesus. First one to get them up every year. Last one to take 'em down." As we drove by Susan's house, I looked out the plastic Jeep window and there was Rick Conroy, whistling away and lacing the house with bright flashing lights. The guy couldn't have been happier. I guess since the paper mill closed, the locals would do just about anything to raise their spirits and keep themselves busy.

"I don't know." I answered, "Susan has kind of a strange family. She's a little messed up." I knew Susan Glass well, but I didn't have a clue as to the motivation behind her stepfather's holiday-envy.

"You're telling me. When was the last time that twig had a burger? She needs to get with it. Maybe she fasts all year and feasts on Christmas."

"I think there is more to it than that." I left it at that. I knew that Susan was anorexic and didn't think it was any of Danny's business. We all had problems communicating our fears. Hers all seemed to be buried and concealed deeply inside.

"Well, alright then," he said.

After driving around for close to an hour, Danny and I ended up parking at McDonald's—a common meeting place for all those anxious seniors who were looking for the locale of the night's festivities.

"Hey, Dano. I heard about State. You outta here boyeeeeeee!" yelled the star field goal kicker, Lonchar, from across the parking lot.

"Nice field goal Launch. Maybe I can talk to the State football coach." Danny answered, nudging the champ in the ribs.

"Football. I want to play soccer." They both shared a laugh and then proceeded to cheers each other in the air. As much as Lonchar joked, it was obvious that a part-time football career paid fairly well. The field goal hero was surrounded by an entourage of star-struck girls. If you didn't know any better you'd swear that Lonchar had just won the Super Bowl and signed a seven-figure commercial deal with McDonald's. The sad thing was, his parents could never afford to send him to college and his grades...well...maybe it was a good night for him to be "The Man." "Hey boys, Dodge is having a jammie at his house. Parents are gone, two kegs and probably whatever other poison you want."

"Sounds good man. We'll catch you there," I said as we headed out of the parking lot, both Danny and I anticipating a messy night.

"Hey man. I didn't get anything to eat before the game. Can we stop at the donut shop and pick up a snack? I didn't want to get too wasted." I looked at Danny and I couldn't think of anything worse than donuts and beer for a hyperactive kid having the most exciting night of his life so far.

"You're drivin'," was the only thing that I could say. As we pulled in front of the donut shop, that resentful sentence continued to echo through my mind. It was the tongue of my desperation. The voice of a caged and spiteful animal. I hoped that he would forgive me.

"Do you want to come in D? Maybe you can get something."

"Yeah, that's cool." I had come to terms with the fact that I would be babysitting for a drunken maniac that night. It didn't bother me, I owed it to him.

On our way into Al's Do-Nuts, we both noticed an unfamiliar, aggro kid ranting nervously at passers-by and screaming into the phone. He had a bushy home-sculpted mullet hairdo, a cheap pleather jacket, and sweat beading-up on his Cro-Magnon brow. As we passed him, he gave us a once over and remained fully tuned into his important conversation. Obviously, he was just passing through, picking up a package from one of the unemployed town folk striving to make ends meet. Funny, judging from his sunken black eyes and beyond pasty skin, the only place that this kid would qualify as a familiar face was Hell.

"Take note young Daniel. Butane is not a proper inhalant when mixed with crystal meth," I joked.

"Ya think? That kid needs some sugar about as much as I do right now." He laughed and shuffled through his pockets as we entered Al's to the ringing, distorted doorbell. "Hey D, order me a bear claw, a honey glazed and a couple of the gross old ones to throw at people at Dodger's house. I left my dinero in the car."

"Cool. Hey, Gerry. What up?" The Do-nut man of the night was our football team's ex-all star running back Gerald Denn.

"What up, D?" He returned. "Deed mine boys sing redemption tonight?" A funny thing about Gerald was that after ninth grade he began speaking like a Rastafarian. He told everyone that he was born in Jamaica, then moved to America at a young age. If you didn't know any better, you'd swear he was the long lost descendant of Bob Marley, Peter Tosh, Bunny Wailer, Marcus Garvey and Jah himself. I suspected that his birth records would tell a different story and that the whole charade was an excuse to smoke a lot of weed and look fashionable.

"Guess."

"I and I did not tink so. Any partyin' a-goin' on later?" Gerald was the one great hope that our football team ever had of winning a homecoming game. However, you've heard the saying about big fish in a small

pond. After one article too many in the local newspaper about the great Gerald Denn, he dropped out his junior year and tried to go pro. It didn't exactly work out the way he expected. Oh well, he took some night classes and successfully completed his G.E.D.. Unlike most of the ex-sports heroes who still lusted for the glory years, he tried extremely hard not to talk about the past. He did however, dream. The rest is Do-Nut history.

"Yeah, Dodge and those clowns are having a party. Can you grab me a bear claw, a honey glazed and a couple of those old heinous ones?"

"Is done," he said as he flicked open a bag and masterfully juggled the donuts into the bag. Then, something caught his attention. "Ey, D, t'looks like Dano s'havin' some trouble with dat ragamuffin outside." I guess I forgot about the living dead lingering outside, because at first I didn't register Gerald's comment. Nonetheless, before I could turn around, the bell signaled that Danny was already on his way in.

"What was that all about." I asked.

"That freak just wanted to borrow my pen to write down a number." Danny didn't even seem to think twice about lending his trophy.

"Where is it now?"

"He's bringing it in when he's finished."

"He better." Before I could dig into Danny about lending out the pen, the bell chimed and the mystery man shot through the door. He was picking at the scabs on his face and his right eye twitched like someone had just sprayed him in the face with a sandblaster.

"Hey man. Can I buy this pen off of you?" he asked Danny.

"No. It's a gift. Why don't you go down the street to Rite Aid and buy one?"

"Because I need to copy down this information now. You got any paper?" Once again, Danny fumbled through his pockets. The only thing that he had was his acceptance letter to state. Funny how you never seem to have a piece of paper when you need it.

"Nope. Just write it down on your hand. That pen writes on anything. Maybe if you wash your hands first, you'll be able to read it," Danny answered, beginning to get a little perturbed. It was obvious that he was heating up because the red and black face paint started to run together all over the place.

"God dammit!" The severely neurotic kid yelled as he spun around in a frenzy and headed back to the phone. The doorbell didn't work.

"Maybe we should invite psycho to Dodger's house. Looks like he could use a beer." Danny had cooled down but I was quickly absorbing his anger.

"Fuck that, let's bring him there and give him a blanket party." I shot. A blanket party was our way of letting troublemakers know that they stepped out of line. Usually performed as a joke, or an homage to the infamous "Code Reds" of the military, we would pull a blanket over someone's head and then beat them until they begged for mercy. Nice, huh?

"Oh, relax. What's happening Ger?"

"Natta much, Dano. 'Ere is dem donuts." Once again, the mullethead plowed into the shop. Once again, the bell didn't work.

"Don't be a dick, dude. I need this pen. I'll give you twenty bucks for it." One of his face pickings had started to bleed. This was really starting to get annoying. Danny was beginning to show early signs of that hyperactive youth who used to light himself on fire and jump into the lake behind his house as a joke.

"Look fuck, just write down your info and give it back." The pleather clad warrior kicked the door open and returned to the phone. Gerald didn't seem agitated. Besides, he didn't own the shop.

In an attempt to alleviate some of the stress, I stepped up to the counter in front of Danny. "I got it Dan. I owe you something for being an ass earlier." I reached across the counter to give Gerald my money. Then, it happened.

FWAP! FWAP! FWAP!

Three gunshots rang out behind me. I hadn't ever heard a gat fired so close to me. It shook my teeth and burnt my gums. As terror thrust up my veins, my balls shriveled into my chest. Terrified, I jumped behind the counter with Gerald who had already taken cover. I didn't hear Danny cry out, so I figured he had taken cover with us as well. Two seconds later, the reluctant bell rang and the gunman was instantly squealing out of the parking lot. With my eyes closed, I propped myself up slowly. Gerald was shivering in shock. I was also shaking. I was shaking so hard that the cheap imitation glass donut case rattled and the cakes inside fell from their designated homes. With one eye, I looked up through the display case, beyond the mixed pile of donuts. All I could see was slightly twitching remains of college student Danny Wilks. It was difficult to tell where his blood stopped and where his smeared makeup began. It was even harder to tell who he was. As I began to lose control of my breathing and collapse, I looked down at my mangled life-long friend, the first one of my allies to escape, and saw his Mont Blanc pen tightly gripped in his hand. Engraved on the base was "You did it. Love, Dad" proudly displayed in the poorly lit ambiance of Al's Do-Nut shop. He twitched. He twitched again. His arms fluttered uncontrollably and then his last living squirt of blood spat all over the front of the counter. "Breathe, Danny. Breathe God dammit. Breathe," is all I managed to get out.

A week later, I crossed the street to the Wilks's house. His father gave me the pen, saying that I should have it. At first, I was reluctant to take it, but he insisted that it belonged to me. He couldn't bear the sight of what remained of his youngest son. Maybe he blamed himself for giving Danny such an expensive gift. I told him that the killer didn't have any idea of the pen's value.

"The bastard didn't even have the balls to face his crime," Buck Wilks sniffed out in a shattered voice. Apparently, after the killer bailed from Al's, he headed down the highway where he was eventually pursued by the local cops. While driving towards the Bay Bridge, his only escape route, he emptied the gun into his own face, swerved off the road and was engulfed in the flames of his car. Coward.

That night, I went to visit Nazareth to bury Danny's trophy at the foundation. I didn't think that I was ever going to be able to write with it. Much to my chagrin, some neighborhood kids had constructed a rope swing by hammering two railroad spikes into his hands, securing a long nylon rope connected to an old tire. I was so furious that I ripped down the apparatus, tearing the nails through the limbs of the tree. Angered, I turned and hoisted the blasphemous plaything into the sewer. The fiery rage pumping through my arms quickly froze midstream when I noticed what I had done. I had weakened the pleading appendages, forcing sap to gush out everywhere. Instead of clutching towards any prospect for survival, the limbs weakly dangled like the ornaments on a pathetic Christmas tree. After my initial shock, surprisingly, it didn't upset me. With the senseless loss of Danny, I was beginning to lose interest in the majesty of Nazareth. Without looking again, I quickly dug a hole at the Herculean base and buried Danny's trophy.

III

In the winter, another ring was added to Nazareth's long life. I spent the day home "sick" from school so I could crank out a couple poems that were due for my creative writing class. I knew that they wouldn't take me that long to complete but I really wanted to leave high school with a bang and make my presence as a writer remembered. How heroic of me. I never felt that anything could make people listen like the written word. Besides, what did I have to compete with; the theatre kids and their obsession with the bored rebellion of Holden Caulfield, the stoners and their Gonzo-esque carbon copies of Hunter S. Thompson, and the countless other caustic attempts at metaphorically mutating "roses are red" by paying tribute to Tupac Shakur or Biggie Smalls. I wanted to tell something bold, something true.

After pacing unconstructively around Nazareth in a zombified lethargy, I concluded that every other kid in my class was going to sum up the closing of the paper mill and how it had taken its toll on our town. Since I hadn't taken the time to deal with Danny's death, I decided to leave that topic to one of the many girls in

class who fancied themselves his widow. So, I diverted my attention elsewhere. Susan Glass's misery was the first thing that came to mind...

Susan was always a really close friend to everyone, but she kept to herself. It was obvious that she suffered from severe anorexia and it seemed to consume all of her time. I remember one time when I went out to get some frozen yogurt with her, she threw a fit at the poor employee when he refused to measure the already non-fat yogurt into exactly 10 oz.. She was very obsessed and all the warning signs were there. A couple of my friends and I used to make fun of her mustache and call her "Hitler." Whenever she walked by, we would stand attention and salute her by lunging our arms into the air, exclaiming, "heil!" One day she took me aside in tears, explaining that because of the affliction, her body's hormones produced a soft, thin layer of hair everywhere on her body. All of her friends ignored her cry for help, relying on a societal debate concerning high school females and their infatuation with super models.

For this, I owed her something. I didn't want to expose her personal demons to my teachers or make her uncomfortable around her peers, but I did want to let her know that I cared. I worked all that day under the weakened arms of Nazareth, creating something true. That fabulous shaft supported my back and kept me attentive to the task I had outlined for myself. However, the stench of the bog was a painful reminder of life's setbacks and the atrocities tucked away in the deepest clearings of the town. Sure, my poem may have been driven by a plea of forgiveness, but the result was a painting of her beauty. At dusk, I was finally satisfied with the finished product. I read it to myself over and over. It was everything I hoped it would be. It was...poetic. The first real piece of poetry that I had ever written. Still, the completion of her maze lead back to the beginning. I searched what I knew about her for an answer to her perpetual self destruction. I guess deep down I thought it a little selfish for someone who lived in this town to refuse food. Nevertheless, excited about my tribute, I called Sue and asked her to meet me at the McDonald's parking lot. She agreed.

"You can't bring this to class!" she screamed as she read of the words in horror. "You will totally single me out. I don't have a problem and I don't want to be your secret little joke. I'm not your freak."

"Sue, I just wanted to..." I began. She pulled out a cigarette, probably the first of her second or third pack of the day, from behind her ear. Then, in one swift, circular motion, she pulled her trademark Zippo out of her pocket, lit the cigarette and returned the faithful lighter to its home. She must have practiced that move so many times to get it right, I remember thinking in admiration.

"What? Tell everyone how fucked-up I am. You don't understand, D." She continued to look at my poem and began to cry. The power of her tears piled on top of her chiseled jaw, picked up weight and then fell onto her sweater in piles. "He fucks me, D." As I searched through my mind to try and pin-point Susan's latest co-dependent, I came upon a frightening realization. "He fucks me all the time. When my mom goes out, even when she goes to the store to pick up a couple of things, he rapes me. He beats me like his bitch and calls me by his dead wife's name. 'Angie! Angie, you whore! Angie!' All over the house. He won't stop."

"Rick?" Rick Conroy always seemed so happy, stringing his Christmas lights, paying tribute to Christ. It all made sense. I guess I finally had the solution to her maze and the reasoning for how such a beautiful girl with everything going for her would want to re-invent herself as something unappealing, skeletal, unable to reproduce. "How come you never told anybody?" I whispered.

"Would you tell anybody? My mom? She's always so piss drunk, she ignores what she may or may not know. She doesn't care. All she does is sit around or relive her glory years as the homecoming queen by stumbling around the house with her stupid crown on."

"Susan, as a friend I have to tell somebody. Jesus Christ, you should have told someone other than me." I didn't want to be the sole protector of such an incredibly sick secret.

"No way. I don't want to be the freak. I know what people say. I hear those tweaked cunts who pretend to be my friends say they want to help when they are secretly wishing they were as thin as me. I see how all of you make jokes about me. LOOK AT ME!" she screeched revealing her lifeless bone of a limb by pulling up the arm of her sweater.

"You aren't a freak. You just need help."

"It's not that easy. Just keep it to yourself. If I find out that you told anyone, I will kill you. I'm getting out of here. I am going to stay with my sister until summer and I'll find out next week whether or not I got into State. My mom has the money tucked away from when my grandfather died. My grades are pretty solid...err...at least until this year." She flicked her cigarette out the window and immediately lit up another. Same motion, same precision.

"You have to quit suffering. Now!" All I could do was offer simple solutions to the terror of her existence. I couldn't feel her pain, but it spoke powerfully and burned my skin through her eyes.

"Keep your mouth shut, D. You aren't God here." She pulled deep on her cigarette and shot me a trusting look.

"Okay I promise."

"Thanks." She continued to look at the poem and continued to cry. "Can I keep this? I'll give you my lighter." From her pocket she pulled out her precious Zippo. This time, she pulled it out slowly. I attempted to shoo it away, but she insisted. "Take it, I have to quit smoking. It's killing me." We both laughed and the exchange was made. I heard her bones creak as she carefully exited the car. Then, she poked her head in and blew me a kiss. She followed her token of love by performing this crazy skeleton dance. She bounced around aimlessly, flapping her grossly thin body around like an uncontrollable marionette. This was her way of letting me know everything was okay.

The next day, I ended up turning in an obvious poem about the closing of the paper mill how it would have affected Mark Twain. Apparently, my teacher didn't agree with my views on obscure literary references focusing on Twain and how he was consumed by James Fenimore Cooper and his fraudulent, romantic writing style. I thought it was funny, but my teacher fancies herself quite a Deerslayer when it comes to grading. I got a C. At least Susan's secret was safe.

About a week and a half later, the phone rang at around 2:00 in the morning. My mom answered it and immediately rushed into my room. "Honey, Lonchar is on the phone. He says that it's really important." Great, I thought, Dodge must be having another one of his epic all-nighters.

"What do you want Launch. I'm sleeping," I grumbled as I wiped away the first signs of snot from my eyes.

"Dude. Susan jumped off the Bay Bridge. They found her car parked out there with a note. They haven't found her yet. She may still be alive. I might go up there and search around." This was no time for a hero, I thought.

"What? What are you talking about?" I wasn't really shocked, just confused. "What did the note say? Was it about Rick?" Quickly, I felt loss and delivery creep up my body. She was cold as she lifted away.

"About Rick? Rick who? Chambers? Were they dating? No, it was a letter from State, refusing her admission." The phone dropped from my hand and I started to gag. As I walked away, I heard Lonchar yelling, "D! D! Are you there? D! Are you there?"

As I thought about Sue jumping off the 50 foot Bay Bridge, I clearly saw her agony released. She knew she was trapped. I walked into my room and put on my clothes. My mom peaked in through my door. "Honey, what did he want? Did something happen?" I picked up Susan's Zippo from my bed stand and headed out. *Breathe, Danny. Breathe God dammit. Breathe!*

"Don't worry about it mom. I'll be back in a little while." I should have told her something but I had another agenda.

When I went to Nazareth to bury Susan's lighter at its base, I saw him in a completely different light. The darkness may have been deceiving, but at night he didn't look as strong. He seemed weathered, beaten down, tired. And looking at the moonlight shadow, he didn't reflect any tangible form other than a big pile of kudzu. I fell to my knees and began digging directly next to the burial location of Danny's trophy. Never looking down, I dropped Susan's provider into the hole and covered it up.

They would eventually find her decayed body in the next couple of days. It washed up on the banks of the bay. I'm sure that even in her decomposed state she was still as beautiful as she had always been. As much as I wished that it was all a hoax, I knew deep down that she didn't see any other way out. She was so close to escaping. I decided to keep her secret. At that time, I wanted her beauty to live on forever, untarnished. This was a problem that couldn't have been solved by an extra two ounces of yogurt.

IV

I remember the feeling when I opening the mail box that Spring day. I enjoyed the mystery of what lay ahead. Unlike the past few months, in which I opened the box only to be showered with a number of countless delinquent bills that my parents had tried unsuccessfully to ignore, there was only a sole letter. I immediately knew what it was. I bit my lip, pulled it out and my stomach howled. It felt thin. That wasn't a good sign. Shooting through my mind were thoughts like, "Why would I, a kid from a shitty little town beat out every other aspiring writer to get a scholarship to a stuffy private school?"

Luckily, my parents were gone. They wouldn't have to see my disappointment as I unfolded the letter. More thoughts raced through my mind. "Well, I could always go to the community college and raise my grades. I would then hear my personal devil's advocate answer. "This isn't about grades, it's your only chance."

As I sat down and continued to play with the letter—holding it up to the light, bending it for contents—I expected nothing but the worst. Why was the world I was escaping to any better than the one that I lived in? Where exactly was I going? What did I expect to do with my life? Then, I thought about Danny Wilks and Susan Glass for the first time since they had passed. Is our world so fucked up and deranged? What did they have to look forward to? What could they change? For God's sake this is a world where the President fucks his intern with a cigar, murderers get off because of their social status, good people are killed for saying what they want, image drives violence in the inner-city, and the figure heads of the world vomit all over themselves, leaving a mess and creating a perpetual circle of mistakes for us to clean up. What was so good about the world? Was it any better than the dying town where I lived? Am I supposed to have these answers? Did Danny or Susan? Everything that I looked forward to, everything that I had ever wanted was on this one piece of paper.

I sat down and began tearing the envelope open. There was a single piece of paper inside, nicely folded on a cheap, thin stock of paper. Something I wouldn't have noticed except I always envisioned my college acceptance or rejection letter would be printed on a thick paper, laced with gold and ripe for framing. I unfolded the first flap. What if I just didn't fit in? What if I couldn't cut as a writer? I unfolded the second flap revealing the contents of my life. I immediately noticed that it was about three paragraphs in length. Fairly unimpressive for the foretelling of my future. I began to read. Fuckers! They spelled my name

wrong! Well, that wasn't important. I read the first line. "Congratulations, you have been accepted on scholarship to attend..." I was in!

When my parents arrived home that evening—my father had taken on a part-time job as an engineering consultant a few towns over and my mother worked at the local book store—I proudly showed them my conquest. They both went to college. As a matter of fact, they both went to a better college than the one I had gotten into. However, the military brainwash of his academy school and the Lutheran teachings of her mid-western school didn't appeal to me. I wanted to write and I wanted out.

"Good job, son. You did it." my father said, extending his hand for a firm shake.

"I don't know, honey. Are you sure you want to leave?" my mother pleaded.

I handed my father the letter. "Fuckers! They spelled our name wrong."

After a good dinner, I took my letter off of the fridge. "Are you going to go and show it to your friends?"

"Something like that." I had one last sacrifice to make to the great icon. One last duty.

V

As I counted the days before my triumphant escape, I sat on the stump of the powerful Nazareth. Once, standing so proud, an enigma in our decaying society. Now, just a pew surrounded by a lump of torn kudzu and left-over bark. Unbeknownst to me, they leveled this entire area sometime over the past couple of months. Even the smaller disciples across the bog were mowed down.

I guess I lost interest. When you're forced to grow up, security blankets, crutches, idols, and religions fade away. Why should I give faith to something based solely on its test of time? My internal focus grew as my dependency on higher powers disappeared, becoming nothing more than a lesson—a perverse structure. I don't think that spending any more time here would have made any difference. It wouldn't bring Danny and Susan back. Like I said before, I'm a realist, not a dreamer. I'm sure they'll build a strip mall or something equally worthless. I can see it now. Maybe, a pop culture coffee house, a health conscious smoothie joint or any countless number of new age franchises that no one in this town can afford to frequent.

I cleared away the piles of Nazareth and dug up Danny's trophy and Susan's provider. I wanted to cry. Senseless. What could have been done to prevent their deaths. Nothing. First, I pulled out the lighter. I lit the Zippo's flint as I envisioned Susan's one-motion trick that she had proudly mastered. All I could think about was her pain. It was about more than escape for her. I held my acceptance letter up and in one circular motion, I lit it on fire. They spelled my name wrong and I knew my dad would make sure they sent another. The paper slowly burned away and the light breeze broke the ends off and exiled them to the disgusting waste of the bog below. The thin paper burned brightly, but eventually the flames became uncontrollable and the letter doubled over and collapsed on itself. Before I could dispel the last corner, however, one lucky flame, burnt the tips of my fingers.

I then dug for Danny's trophy. Sure enough, just like he said, it was indeed "indestructible." I read the inscription aloud to the fallen Nazareth. "You did it. Love, Dad." It was roughly the same thing that my father had said to me. I know he would have rather had me go to some military school, but he was proud of me, just as much as old Buck Wilks was of Danny. Although I had tried to shut out that fateful night for the rest of my life, certain elements always flashed by; Danny masked behind his ridiculous face make-up, Lonchar the hero, Gerald the dreamer, the speed freak coward and me...the jealous asshole. I am still haunted by the sight Danny's shaking body. He just laid there, begging for a minute, a second, a moment and twitched. As his leg quivered uncontrollably, the blood from his wounds pumped out. It was almost as if his leg was working as a death machine, pushing him to the end as quickly as possible. It was horrible.

I fumbled around in my pockets for a piece of paper to write on. Just like Danny at Al's Do-Nuts, I didn't have a piece. God, if he had a piece of paper. Anything for that freak to write down whatever information was so fucking important. Why is that every time you really need a piece of paper you can't find one? I began stamping around like a lunatic, crushing the worthless remains of Nazareth as the blazing hell of Ministry's "Stigmata" pounded in my head. Frantic, I threw Susan's lighter into the bog. I shredded pieces of the virus vine. I kicked at the stump and smashed scraps of bark. I was unleashed, uncaged. Just as I lifted my arm to throw that fucking pen, that terrible fucking pen, a memory surged through my head, "Dude, this pen can write on anything." I stopped and then slowly picked up a piece of bark from one of Nazareth's two reaching limbs. I wrote the truth. My truth. Then, I paid my last respects to the fallen God. It had finally been useful. It wasn't my hiding place anymore and it wasn't the burial ground of my friends.

It was late, so I fished Susan's lighter out of the smelly pissing hole, put the piece of bark under my arm, proudly placed Danny's pen in my front pocket and headed home.

For the first time in a long while, I started to observe. The dilapidated homes, the rummage growing in the yards...it was all so wrong. And then, I came to my school, most likely the cleanest high school in the country. As far as I knew, our good natured principal hired an over-abundant amount of out-of-work custodians when the mill closed. I walked by the football field and saw Lonchar kicking field goals. Apparently, since Danny's death, he stayed late after soccer practice to warm up for next year's football season.

"Good job D. I heard the news from your mom when I called you to tell you about a shindig tonight at Dodger's pad. A real kick-ass party. Honeys everywhere. Pick your own poison. You up?" he yelled across the field.

"Yeah bro. I'll be there, I just got some shit to take care of first." Lonchar booted a 40 yard field goal. It was good.

"Kind of a fucked up year, huh?" He wiped some sweat off of his forehead.

"Yeah. Kind of a very fucked up year. Catch you later." I turned around.

"Oh, your mom told me to tell you to call if I ran into you. Use the phone over there by the locker room. It's free."

"Thanks." I headed towards the locker room, listening to his grunts and groans. Provided he got that soccer player nonsense out of his head, Launch was going to make it out of here. I picked up the phone and started to dial my house. I hesitated and then just as easily as I had picked up the receiver, I hung it up. I fell into the wall in front of me. This time, and only this time, I cried. It felt good. Some things are best left unsaid. Some things aren't. I dialed a number. It was not the number of my house.

It's strange when everything seems to come together. After I walked by the high school, I caught a glimpse of something out of the corner of my eye. To be sure I wasn't dreaming, I looked down at my watch. Sure enough, April 16th: nowhere near Christmas. Shocked, I dropped everything that I was holding. There he was. It was Rick Conroy, whistling away, tearing down the lights that were still covering the house like an overgrowth of kudzu. After collecting my memories, I walked up to his ladder.

"Nice night, huh Mr. Conroy?" I said angelically.

"Wha??? Oh, ya scared me." He looked up at the sky. "It's alright. I can feel something's coming in from the west though." He re-adjusted his hat, snorted and spat onto the ground. All I could do was stare at him. Hatred. "You gotta problem son? What're lookin' at?"

Quickly, I shook myself out of the hypnotic death stare and got myself together. "I just think that it's brilliant how you leave your Christmas lights up practically all year round. It's almost like you want to constantly bring joy to the town."

"Somethin' like that," he answered confused.

"Well, here. I've decided to bring joy to this town as well." I placed the piece of bark at the bottom of the ladder and walked away.

"Boy, what in the hell?" I heard him stepping down from the ladder but I didn't turn around. I just kept walking. Walking home. Walking away.

"Is this some kind of joke, kid?" He screamed after me. "Hey, I'm talking to you, ya little shit." I continued to walk and he continued to scream. "What does this mean? Who are you?" He didn't run after me, he didn't understand the message that I scrawled on the bark. As his ranting became more distant, nearly out of my reach, I heard sirens.

"Merry Christmas fucker!" I whispered, remembering my message.

The great Harry Houdini would be proud.

The Crisis Faced by Our Children

With the market forces of Wall Street dictating a three-month horizon to the vision of civilization, we have lost the opportunity to found our culture on the bedrock of long-term survival, advancement, and happiness. What makes these human challenges all the more painful to witness is the degree to which we self-impose ignorance of them. Western civilization's greatest single crime is the form of lying called denial – bearing false witness to ourselves.

We see these portents of future crises in evidence all around us, yet we bicker over President Clinton's sex life. The economy of a once-superpower has imploded in the face of the first of many cold winters of depression, and we find no global leadership rising even to the level of mediocrity to confront its implications. And we haven't even begun to talk about the psychosocial crises within our own back yards – crises of education, economics, and crime.

When the robust education that will spark the young mind is unreachable by the average child, are we truly surprised to witness children reaching for frightening alternative ways to expand the meaning of their lives? When the real-life prospects of a child's future can never even come close to the fantasies of Madison Avenue, is it any wonder that a generation of inner city youth becomes utterly demoralized? When fictional entertainment becomes the only source of powerful storytelling, and the stories are ethically bankrupt, is it any wonder that we see the crumbling of goodness? I weep for the human race when its future potential is so depressed as to become less mysterious, less full of wonder, and just as ethically vacant as its present fiction. In such a time, hope is lost, and we devolve.

What will save the children not so gifted or lucky to escape the horrors of today's inner city life? How will society grapple with the resulting catastrophe as those children raise children? How are all of our children – in every city and town and of every class – going to deal with the environmental catastrophes we are creating for them as our legacy? How will the history books remember this generation?

When our children are young, not only do we deny their obstacles and pain, we inflict them. We glamorize their beautiful faces and then ridicule their average ones. We complain about their education and then fail to educate. We complain about violence in entertainment and fail to tune it out. We paint the vision of college and "success", and then keep the same vision out of reach for all but a few. We pound absolute guilt into their minds regarding natural explorations of adolescence – bodies, sex, substances, music, friends, dreams, faiths – and refuse to promote balanced and truthful education of what behavior is truly risky and what is simply unscientific and unnatural fundamentalist moralism.

We punish our children as our proxies – for they show the symptoms of our crimes of negligence.

These crimes are made more deeply wrong because Western civilization boasts "the most educated societies in the world", in the fullest possession of the knowledge of the consequences of our choices and the means to make better choices.

We must realize that murder is murder whether it occurs in a nanosecond or a decade, across an ocean or a street, through the barrel of a gun, the disintegration of a childhood, the fouling of a river, the devastation of a rainforest, the crumbling of a city in debilitating poverty, or the rape of the resources of a younger nation.

What shall we do in the face of these challenges? Shall we simply turn away and ignore them? Shall we rely upon some kind of magical salvation? Of course not. We should commit ourselves along two paths, with the hope that has characterized humanity through our history. First, we should study, acknowledge, teach, and act to confront these challenges using the best ideas available. Some changes may be difficult to absorb, but we will ultimately become a happier people. Our politicians must focus on these issues, or they are unfit to be given the public's most sacred trust, the trust of our future. Second, we should pay very dear, close attention to the promising research into new realms of science whose applications speak

fundamentally to every one of these crises: a new emerging understanding of space-time itself. Studies at the forefront of science reveal the startlingly imminent possibility that the energy, transportation, and biological technologies of the future will look very little like those of today. The studies and research appear to indicate these new technologies are "green" – extracting energy from the vacuum of space-time itself, with no known by-product of ecological damage. And new technologies of propulsion will break open the frontier of space-time, firing the imagination for an eternity of human generations.

This sober and serious agenda is one for the world as a whole to approach, as one global community. If the United Nations is in search of a true mission beyond hollow-sounding proclamations in behalf of peace, these two endeavors are worthy of the sustained focus of the body of concerned governing leaders around the world.

The earlier we begin to seriously deal with these issues and pioneer these technologies, the less abrupt will be the force of change in our future.

**EVOLVING IN A PLACE CALLED EDEN
IS A PROMISING YOUNG CIVILIZATION.
WE GROW MORE DANGEROUS
YET WISER EACH DAY...**

"The Cosmos is all that is, or ever was, or ever will be. Our contemplations of the Cosmos stir us. There's a tingling in the spine, a catch in the voice, a faint sensation as if a distant memory, of falling from a great height. We know we are approaching the grandest of mysteries. The size and age of the Cosmos are beyond ordinary human understanding. Lost somewhere between immensity and eternity, is our tiny planetary home, the Earth. For the first time, we have the power to decide the fate our planet and ourselves. This is a time of great danger, but, our species is young and curious and brave. It shows much promise. In the last few millennia we have made the most astonishing and unexpected discoveries, about the Cosmos and our place within it. I believe our future depends powerfully on how well we understand this Cosmos, in which we float like moat of dust in the morning sky."

– Carl Sagan

"The most beautiful and profound emotion we can experience is the sensation of the mystical. It is the sower of all true science. He to whom this emotion is a stranger, who can no longer wonder, and stand rapt in awe, is as good as dead. To know that which is impenetrable to us really exists, manifesting itself as the highest wisdom and the most radiant beauty, which our dull faculties can comprehend only in their primitive forms. This knowledge, this feeling, is the center of true religion."

– Albert Einstein

Despite the depth of our societal challenges, we have struggled with all our imperfections to a pinnacle of knowledge, achievement, judgment, wisdom, and justice never before seen in human history. We can be incredibly proud of this accomplishment, including all branches of civilization upon which it stands: science, religion, industry, government, military, community, and individual. For all the flaws in the ladder of history, it has supported our ascent to a dizzying height. But in using our evolved talents of thought, from faltering beginnings in the mists of prehistory, to the present day, homo sapiens has struggled to understand its place in the universe. We struggle to gain any glimpse of the root of the great ladder upon which we stand.

Contemplating the mysteries of the heavens, the awesome forces of nature, and the cycle of life and death, our ancestors' effort to extract meaning from their experience has helped give rise to myths, religions and philosophies that have acted as beacons along the way.

A relative newcomer to mankind's cultural journey is the beacon of science, with its focus on objectivity and experimentation. As with myths, religions and philosophies, science attempts to come up with a "theory of everything," a unifying principle from which all else follows.

If we think of science as a process by which we gain knowledge and understanding of things, then it is a phenomenon that should be looked at over time. It will remain unfinished, as there will always be more to learn. In the January 1999 issue of Scientific American, a revolution in Cosmology is unfolding before our very eyes: the rate of expansion of the Cosmos is accelerating. It appears that the gravitation of matter is not the fundamental arbiter of the Cosmos after all. Something else is, and we shall discuss it later.

But to a scientist this is a fundamental discovery: when considered as a single space-time unit, the universe is now seen to be infinite: perhaps bounded in space, but infinitely growing in time.

The progression of orders of space through the function of time is studied by the disciplines of science. *Cosmology* is the study of the origin of spacetime, or the fountain of creation. *Physics* is the study of how the Cosmos behaves in its simplest forms *energy* and *matter*. *Chemistry* is the study of how the energy and matter of physics have joined with themselves to form more complex structures, such as molecules. *Astronomy* and *astrophysics* are the studies of how the processes of physics and chemistry have formed galaxies, stars, planets, moons, comets, and asteroids. *Geology* is the study of how the chemistry and astrophysics of planets has formed into mountains, oceans, rocks, and soil. *Ecology* is the study of how geology has formed into systems hospitable for life. *Biology* is the study of the systems of ecology that have evolved into organisms such as you and I. *Philosophy* and *neurosciences* are the studies of why and how the conscious biology within us thinks the thoughts we do. Together, the disciplines of science give us a window into time, with an ever clearer picture of how nature herself has evolved into the spacetime machine we call the universe. Through this very same science of the universe, we continue to advance our understanding of the astounding spacetime machines we call human beings.

The question of which is more remarkable, the advances we make at the close of this millennium or those that were made in earliest recorded history, is a subject which can be debated passionately on either side. If you think of prehistoric man 10,000 or more years ago figuring out how to harness fire or devise the wheel for transportation, is that not on a relative basis as awesome as space exploration or the routine transplant of vital organs?

If you think of man starting out with his survival instinct and building on his experience, it is clear that we are the product of a brilliant accumulation of what came before us. Yet there was a time when the only means of communicating what man learned was by passing it on verbally to the next generation, since there was no other form of communication. He couldn't even write it down.

For as long as man has inhabited the earth, he has looked to the heavens. Why? Because it was always there. Because he could learn more about himself and the world in which he lived. Because he could learn how to get along in that world. Today we continue to look at the heavens for the same reason. Some things never change. Or do they?

We take for granted the most mundane things in our lives. When it is dark, we turn on the lights. When we are hungry, we heat food in the microwave oven. If we want to talk to someone, we pick up the telephone, and if they are not there, we can leave a voicemail message. The news of the world is delivered to our door, our TV and our computer. Most of us can't conceive of life without these things and yet, for most of our history, none of them existed.

These are stunning technological powers, and we take them for granted. Yet as wondrous as they are, and even in full view of the majestic history of science that has illuminated their underlying phenomena, they pale in comparison to the wonders that await us at the turn of the millennium. As we now look up again through our telescopes, and down again through our microscopes, we see the fingerprints of the gods, the evidence of revolutions more wondrous than any seen this century, revolutions to boggle the imagination.

The Leading Edge of Biology

"Life is understood backwards, but must be lived forwards."

-- Soren Kierkegaard

The single greatest power which science has developed is the power to observe. A special role for observation is found all across nature: in the foundation of creation known as quantum mechanics, in living beings, and indeed in the evolution of life itself. With observation, all things, from the smallest bacteria through the largest beast and the most knowledgeable human know what they need to know to survive. Therein may lie a clue to motivate us to reconsider physics in terms more familiar to biologists. What if this same principle in a more general electromagnetic form did in fact apply to all mass? Principles of evolution pervade all that we seem to observe. Natural selection seems as well equipped a phrase to describe all truth -- the birth and death of galaxies, stars, worlds, civilizations, religions, and even theories themselves, as to describe the birth and death of life defined by biology alone.

Biologists speculate that since biological life began on Earth a few billion years ago, some five to 50 billion distinct types of life forms -- species -- have existed. The Earth veritably swarms with life -- life in astonishing diversity. There appears to be almost no locale too remote or too inhospitable for life in some form to take a hold. Algal species, for example, thrive inside the frozen rocks of Antarctica and in the superheated, acidic waters around deep sea vents. Earth itself when life first appeared was such a hostile environment: hot, volcanic, and surrounded by an atmosphere lacking in oxygen but abundant in carbon dioxide, which is toxic to most present life forms. Surprisingly, in view of less-than-ideal initial conditions, life established itself on Earth just a few hundred million years after the planet's formation -- an unimaginably long time by human standards, but a relatively brief period in cosmological terms, particularly so in view of the seeming improbability of the event. Since then, life, displaying equally amazing creativity, has expanded into and adapted to every nook and cranny on the planet.

Two fundamental questions immediately suggest themselves. How, in spite of what would appear to be almost impossible odds, could life of any kind come into being, and how has it been able to develop with such diversity? In the eighteenth century, when naturalists, most of them good Christians, first began to ask such questions, the answer seemed obvious: God had created the species. Such a belief was of course not new to the eighteenth century; it had been held by many different cultures since prehistoric times. What the eighteenth century could add to traditional belief was new, detailed zoological and botanical knowledge about how species manifested characteristics that ideally suited them to their peculiar environment and to each other. The hand-in-glove fit of a species to its habitat seemed to bespeak design, which therefore implied a designer, God. Biological science thus supported believers against skeptics of religion, who began to appear in increasing numbers as the century waned.

The romance of biological science and religion was short-lived, however, for soon evidence began to appear that seemed to call into question the assumption that the Bible was a reliable guide to the study of life's beginnings. Such evidence came from two quarters, first the fossil record. Quarries began to yield fossilized remains of some species that clearly had long since died off and of others that had appeared suddenly in the fossil record. The problem was that if God had established species in the beginning, how could they appear and disappear on their own? The other source of disquieting discovery was the new science of geology, which was beginning to uncover evidence that the Earth was far older than anyone had imagined, certainly far older than the Bible seemed to allow.

What emerged from these facts was the notion that life and the Earth itself had evolved. Evolution per se did not necessarily rule out a role for a God, but it allowed for the possibility that independent processes may have been at work, processes which, though perhaps initiated by God, were self-sustaining. As an independent force of nature, therefore, the evolution of species could be studied as a science rather than as an adjunct to theology. It was into the debate about the scientific mechanism of evolution that Charles Darwin burst like a supernova in 1859.

What is new about Darwin's explanation of the development of species is not that this happens by evolution, but that it happens through natural selection. According to Darwin, only a handful of fundamental forces are needed to explain the evolution of life. One of these is mutation. Through mutation, new features are introduced into the genetic pool. In point of fact, Darwin did not understand how genetics works, but he correctly perceived that random variation is the only apparent way for new genetic traits to enter what is otherwise a closed system. We now know that genetic mutation can also occur through biotechnology, but Darwin couldn't even have conceived of such a possibility 150 years ago.

Certain types of variation will have no appreciable effect on an individual life form's odds of survival. Other changes will make a difference, however small, for good or ill, and this is where Darwin's second and most important factor, natural selection, comes into play. If, for example, I inherit from my father a mutation that makes me less likely than my neighbor to contract skin cancer, then chances are that I'll live longer and be more likely to have children and pass on this beneficial trait to them. Those of my children that inherit this trait will in turn be more likely to survive than other children who lack the trait. If I live in a sunny environment, this trait may prove to be a factor in the differential selection of my offspring for survival, and more and more of my offspring will be represented in the total population. Over time, resistance to skin cancer could become a differentiating trait of an entire population as against other populations, for whom sun and skin cancer are not problems, and who therefore lack any genetic inheritance to resist the disease.

Thus, in response to pressures arising from the environment, natural selection amplifies the effect of random mutation and, together with inheritance, provides a means by which the amplified effect can propagate through a population. Life responds to the diversity of physical environments by spawning diversity.

Like most great scientific insights, Darwin's explanation of evolution, though simple, is not intuitively obvious. Indeed, it appears downright improbable. If mutation is random, and if, as Darwin asserted, natural selection operates to no particular end, then how do complex organisms emerge? How, for example, could something as intricate as the human eye or brain be formed by a random process? And, if it's hard to imagine how even one such organ could evolve through random combinations, then how much more unlikely is it that millions of complex life forms, each with a host of intricate subsystems such as eyes and brains, could come into being? The answer, and the seeming paradox of Darwinian evolution, is that, although it involves an inconceivable number of random events, the process itself is not random. It is not directed per se, but it is also not random.

It's cumulative self-organization. In other words, absent external genetic engineering, evolution is directed by itself.

In a random process where there is no link between what happens in one generation and the next, whatever success evolution achieves in one generation toward the development of, say, an eye, will likely be lost in the next generation. Time therefore becomes largely irrelevant, for the odds of developing an eye in one million steps are the same as those of doing it in a single step. In evolution through natural selection, however, nature improves upon itself with each generation. The cumulative effect is radically different. To illustrate the point, Richard Dawkins, one of Darwin's cleverest modern proponents, poses a variant of the famous example of the monkey that randomly types away at a keyboard and manages to recreate the works of Shakespeare.

Instead of having to come up with the works of Shakespeare, all the monkey has to do in Dawkins's simplified version is to generate the single sentence from Hamlet, "Methinks it is like a weasel", which contains just 28 characters. If the monkey used a stripped-down keyboard of 27 characters (26 letters of the alphabet plus the space bar), the probability of randomly generating the sentence is $(1/27)^{28}$, or $10e41$. That's one in a 100,000 trillion trillion trillion. Such an event would almost certainly not occur within the lifespan of the universe, even if the process were carried out on a computer capable of executing millions of

tries per second.

But now let's change the rules. We'll let the monkey type 28 characters at a time, and we'll keep any matches from one turn or "generation" to the next. Dawkins designed a Macintosh computer program to do just that. The program starts with a random phrase of 28 letters and duplicates it repeatedly, but with certain chance of random error or mutation in the copying. The computer then selects from each generation's progeny the one that is closest to the target phrase. The selected phrase becomes the basis for the next generation, and so on. Depending on the initial set of random characters chosen, the program was able to generate the target phrase in as little as 41 generations (a few seconds of computer time).

Now, as Dawkins notes, this test is not an altogether proper analogue, since evolution is not directed at producing any particular result. Nonetheless, the example does illustrate the radical difference between random, single-step operations and cumulative selection. Results that are highly improbable as a sequence of unconnected, single-step operations can be achieved through selection. In evolutionary terms, the time scale may still be on the order of thousands or millions of years, but far less than would be required by simple random mutation. Dawkins summarizes as follows:

"...if any entity, anywhere in the universe, happens to have the property of being good at making copies of itself, then automatically more and more copies of that entity will obviously come into existence. Not only that but, since they automatically form lineages and are occasionally miscopied, later versions tend to be 'better' at making copies of themselves than earlier versions, because of the powerful processes of cumulative selection. It is all utterly simple and automatic. It is so predictable as to be almost inevitable. Evolution, then, while still requiring many generations to yield results, is inherently less improbable than one might at first have supposed."

Evolution is the process of life, and for the first time in the known history of Earth, a species of animal has learned how to control and shape evolution using technology. What we've learned from the application of biotechnology in the past 10 years has fundamentally reshaped our comprehension of the power of biological knowledge itself.

We are now on the verge of possessing a complete genetic map of the homo sapiens animal. At our choice, we will have a similar map for any other life form on this world. This is the instruction manual used by the Cosmos to construct and operate you. It took 15 billion years to make, and at the turn of the second millennium since Christ into the third, humanity will see its own temporal blueprint for the very first time. How rare or common is such an event in the history books of a galaxy?

We will soon be faced with the exceptionally high-stakes task of determining how knowledge of the human genome should be used. We all seem to agree that we will use it to cure disease. But how? What should we do when an incurable disease is found in genetic testing of a fetus? Shall we terminate after pregnancy? Shall we sterilize children carrying lethal genetic defects? Shall we culture new body organs from stem-cell tissue? Shall we enable parents to select their child's sex? If so, then why not eye color? Prevent baldness? Determine height? Skin and muscle tone? Sexual orientation? Athletic performance? Intellectual traits?

Is cloning ethical? If not, why do some animals reproduce that way? Would we allow parents to clone a child who has passed away in a car accident? Could you one day clone your own DNA into a new embryo, upon your death? What would it be like to see a home video of your great grandfather, and see a human with appearance and traits *exactly* like yourself? Shall we allow homo sapiens to make these decisions for other animals as well? Shall we one day create new forms of animal, as we have already created new forms of plants?

Isn't it virtually certain that, somewhere in this galaxy, these questions have been asked and answered before? Profound questions.

The Leading Edge of Computing

In the January 1999 issue of Discover magazine, David Freedman presents a stunning portrait of a new field of computer science just now emerging into view. A new type of computer, called a quantum computer, appears to hold dramatic promise for complete revolution in information technology.

"What's the big deal about quantum computing? Imagine you were in a large office building and you had to retrieve a briefcase left on a desk picked at random in one of hundreds of offices. In the same way that you'd have to walk through the building, opening doors one at a time to find the briefcase, an ordinary computer has to make its way more or less serially through long strings of 1's and 0's until it arrives at an answer. Of course, you could speed up the briefcase hunt by organizing a team, coordinating a floor-by-floor search, and then getting them all back together again to compare results. Ordinary computers can do this sort of thing, too, by breaking up the task and running the components in parallel on several processors. That sort of extra coordinating and communicating, however, exacts a huge toll in overhead.

But what if instead of having to search yourself or put together and manage a team, you could instantly create as many copies of yourself as there were rooms in the building, all the versions of yourself could simultaneously peek in all the offices, and then – best of all – every copy of yourself would disappear except for the one that found the briefcase?

That's an example of how a quantum computer could work."

A stunning concept, to say the least. It's particularly appealing because it sketches a possible solution to a long-standing challenge that has confounded even the faster modern computers: pattern recognition. Traditional binary digital logic is notoriously poor at pattern recognition. While even a young child can instantly recognize her mother's face, this simple kind of task is falteringly primitive even in the most advanced computers. Today's "speech recognition" in some new computers is exceedingly primitive and slow, and is thus largely unusable.

However, a quantum computer might one day be able to approach the problem of pattern recognition from a fundamentally new angle. Instead of breaking down an image or sound into tiny pieces for serial processing, it might be able to conduct an overall "macro" comparison of one pattern with another in a manner more similar to that within our own brains. More speculatively, it has been suggested by many researchers that quantum computing may ultimately lead to the ability to create technology that is conscious!

Will the concept depicted in Star Wars of conscious droids not ultimately turn out to be fictional after all?

Although we are getting ahead of ourselves to mention it here, those with inside knowledge of the UFO phenomenon quite uniformly assert that the technologies employed with these craft respond directly to conscious thought.

Taking this speculation yet a further step forward, shall we one day marry biology and computing in some way, perhaps to serve our needs? Might other advanced civilizations elsewhere in our galaxy have already accomplished this?

The Leading Edge of Physics

"The whole of science consists of data that, at one time or another, were inexplicable."

-- Brendan O'Regan

The search for a unifying principle in physics has led to the development of theories whose names are becoming household words, even though their content may be accessible only to the specialist - relativity theory, quantum theory, superstring theory.

Echoing pre-scientific roots in the concept of an all-pervasive energetic flow, these modern scientific disciplines similarly posit an underlying energetic matrix, the void or vacuum out of which springs all manifestation. In relativity theory we hear of the spacetime metric, with its curving warp and woof; in quantum theory, the vacuum fluctuations or zero-point energy, so-called because of its unceasing activity even at a temperature of absolute zero. As before, called by many names in many disciplines, such terms conjure up images of a pregnant void, full of potential, and indeed this is where modern scientific theory has led us. It would appear that, like fish discovering the ocean, we have finally discerned the ocean of energy in which we move and have our being.

In Western traditions the genesis of the scientific concept of an energetic void underlying all manifestation can be traced back to at least the time of the Greek philosophers. Democritus argued that empty space was truly a void, otherwise his postulated atoms would not have room to move around. Aristotle countered that what appeared to be empty space was in fact a plenum, filled with substance, for did not heat and light travel from place to place as if carried by some kind of medium?

The debate ricocheted back and forth through the centuries until its essence was distilled by the 19th-century British physicist James Clerk Maxwell. As mentioned previously, Maxwell postulated the existence of a luminiferous ether, a medium that carried electromagnetic waves, including light, much as a lake carries water waves across its surface (Whittaker, 1960). All attempts to measure the properties of this ether, however, or to measure the Earth's velocity through the ether (the famous Michelson-Morley experiment), met with failure.

Furthermore, Einstein's development of the theory of special relativity in 1905 did not require reference to such an underlying substrate, and thus the concept of the ether seemed superfluous, and fell out of favor. Maxwell's ether was banished in favor of the concept that empty space constitutes a true void. Ten years later, however, Einstein's own development of the theory of general relativity, with its emerging picture of curved space and distorted geometry, brought back the idea of a richly endowed plenum, this time under the new label spacetime metric.

It was the advent of modern quantum theory, however, that established the quantum vacuum, so-called empty space, as a very active place, with electromagnetic and other fields continuously fluctuating on a microscopic scale, and with particles fleeting into momentary existence, only to vanish back into the restless void, like foam tossed at the base of a waterfall. Thus empty space began to look more like a frothy, bubbling cauldron than a serene silence. And its fluctuations led to a statistical uncertainty in all measurement that is so fundamental to quantum processes as to be raised to the status of a Principle - Heisenberg's Uncertainty Principle - named for physicist Werner Heisenberg who stressed its importance.

When physicists calculated the energy density of the quantum foam, they were amazed to find that even the most conservative estimates placed its value at greater than nuclear energy densities (Feynman and Hibbs, 1965). At first it was thought that perhaps some fundamental aspect of the theory used to perform the calculation was in error. However, it was soon discovered that the energy densities so calculated had to be taken seriously for certain experimental observations to be explained. For example, an observed discrepancy (shift) between the predicted and observed frequency of emission from excited hydrogen gas could only be explained if one took into account the "jittering" of the electron's orbit around the nucleus

due to the underlying quantum field fluctuations. This convergence of theory and experiment is known as the Lamb shift, and won for its researcher Willis Lamb, Jr., a shared Nobel Prize in physics.

At this point, although the vacuum fluctuation energy concept had been demonstrated, as far as physical effects were concerned it appeared to be of significance only for such esoteric concerns as the calculation of small corrections with regard to the properties of fundamental particles, or for atomic processes. In 1948, however, H. G. B. Casimir of the Philips Laboratories in the Netherlands predicted an entirely new effect based on the fluctuations of the vacuum electromagnetic field - an attractive force between closely spaced metal plates. This force, now known for its discoverer as the Casimir force, derives from partial shielding of the interior region of the plates from the background fluctuations, much as a metal building shields incoming radio waves and thus interferes with radio reception. This partial shielding of the external electromagnetic fluctuations results in unbalanced forces that push the plates together (Milonni, Cook and Goggin, 1988). The Casimir force has recently been measured with high accuracy at the University of Washington (Lamoreaux, 1997), a scientific event considered of sufficient importance as to be given prominent coverage in the New York Times (Browne, 1997).

Step by step the concept of a rich and active vacuum began moving from the periphery of physics toward center stage. As stated on the dust cover of a recent collection of essays on the vacuum by well-known physicists (including Einstein), "The vacuum is fast emerging as the central structure of modern physics" (Saunders and Brown, 1991). And, as if to emphasize the concept that this has meaning not only for the academic pursuit of fine points in the development of physical theory, but also potentially for application, Nobel Laureate T.D. Lee (1988) introduced the concept of vacuum engineering with the words "The experimental method to alter the properties of the vacuum may be called vacuum engineering..... If indeed we are able to alter the vacuum, then we may encounter some new phenomena, totally unexpected."

One of the first breakthroughs in application of the concept of vacuum engineering involved the phenomenon that excited atoms - for example, electrically-excited gas atoms in a neon tube - do not stay excited for very long. Like a pencil poised on its point, an excited atom hovers in an excited state for a brief moment and then falls to a ground state, emitting its energy in the process - in the case of the neon tube, emitting light. This process is called "spontaneous emission."

As it turns out, "spontaneous emission" is not so spontaneous after all. Rather, spontaneous emission is triggered by quantum fluctuation fields, much as the fallover of the poised pencil is due to such disturbances as microscopic acoustic vibrations. Therefore, if excited atoms are passed through specially-constructed Casimir-like cavities in which the resonant field modes are suppressed - and likewise the quantum fluctuation energy in those modes - the time before spontaneous emission occurs can be lengthened considerably, by factors of ten, for example. As stated in a review article in Scientific American, "An excited atom that would ordinarily emit a low-frequency photon cannot do so, because there are no vacuum fluctuations to stimulate its emission..." (Haroche and Raimond, 1993). In a similar fashion the cavity can be designed to enhance spontaneous emission and thereby speed up the process. This form of vacuum engineering has led to the development of a whole new field of research called cavity quantum electrodynamics. It is only a matter of time and engineering before manipulation of atomic emission times by this process will find useful application.

Overunity Energy?

A continuing search for energy alternatives to fossil and nuclear fuels has intensified over the past few years. This search includes a national commitment of several billion dollars to develop high-energy ("hot") fusion - to reproduce the sun on a small scale - which is still controversial in the physics community as to probable success. Complementing this are the so-called renewable energy resources, such as solar and wind energy alternatives that have been under development for many years.

Given the apparent energy density of the vacuum fluctuation fields, which can be traced to radiation from the fluctuating quantum motion of charged particles distributed throughout the universe (Puthoff, 1989,

1991), the question naturally comes to mind as to whether this reservoir of energy can be tapped. Can the energy be "mined" for practical use? If so, it would constitute a virtually ubiquitous energy supply, a veritable "Holy Grail" energy source.

Looking to whether Nature herself may have already taken advantage of energetic vacuum effects, physicist I. Yu. Sokolov (1996) of Toronto University suggested just this in a paper entitled "The Casimir effect as a possible source of cosmic energy." In this paper he presents calculations to support the concept that the anomalously high energies associated with certain supernova explosions or with quasars might constitute examples of the conversion of vacuum energy into other forms.

In yet another example, researchers A. Rueda of California State University at Long Beach, B. Haisch of Lockheed-Martin and D. Cole of IBM proposed that the vast reaches of outer space constitute an ideal environment for energetic vacuum effects to accelerate nuclei and thereby provide a mechanism for "powering up" cosmic rays (Rueda, Haisch and Cole, 1995). Details of the model would also appear to account for other observed phenomena, such as the formation of cosmic voids.

As utopian as the possibility of tapping vacuum fluctuation energy might seem, researcher R. Forward (1984), while at Hughes Research Laboratories in Malibu, CA, demonstrated proof-of-principle in a paper, "Extracting electrical energy from the vacuum by cohesion of charged foliated conductors." Furthermore, follow-up proof that such a process violates neither energy nor thermodynamic constraints can be found in a paper with the title "Extracting energy and heat from the vacuum" (D. Cole and H. Puthoff, 1993). Forward's approach exploited the Casimir effect described in detail earlier. In brief, as metal plates are pushed together by vacuum fluctuation forces, one obtains heat when they collide, or, if electrically charged, a buildup of electrical field energy as they approach. In either case, vacuum energy is converted to another, potentially useful, form. Though of insignificant magnitude in the simple configurations described, proof-of-principle has nonetheless been demonstrated, paralleling earlier demonstrations of the release of small amounts of energy from early experiments in nuclear fission. Fortunately, all indications to date are that, unlike its nuclear predecessor, vacuum fluctuation energy release is environmentally benign.

Attempts to harness the Casimir and related effects for vacuum energy conversion are ongoing at the Institute for Advanced Studies at Austin (Austin, Texas) and elsewhere. One approach utilizes pinch effects in non-neutral plasmas (Puthoff, 1990), the plasma equivalent of Forward's electromechanical charged-plate collapse. A patent issued on this process contains the descriptive phrase "...energy is provided... and the ultimate source of this energy appears to be the zero-point radiation of the vacuum continuum" (Shoulders, 1991).

Yet another technique under investigation is based on an argument suggested by Boyer (1975) and elaborated by Puthoff (1987) that (stable) atomic ground states are states of dynamic equilibrium in which radiation due to ground state motion is compensated by absorption from vacuum fluctuations. If verified, a corollary is that appropriate perturbation of this equilibrium state would result in a release of energy. Finally, an approach described in a recent patent proposes the use of finely-tuned dielectric antennas to convert energetic high-frequency components of the vacuum-fluctuation spectrum into a more useful lower-frequency form (Mead and Nachamkin, 1996).

Though remaining to be developed, what has been shown is that the basic concept of the conversion of vacuum energy to other potentially useful forms is a legitimate and viable physics principle. What remains, however, as with solar and thermonuclear energy, is the matter of engineering and demonstration as to whether vacuum energy conversion can be developed to the point that it constitutes a significant energy resource. Given global energy concerns, however, disregard of any possible energy solution is a luxury that we can ill afford. Therefore, robust pursuit of the vacuum energy option is essential.

That such a concept has attracted interest in the broader engineering community is reflected by an Air Force request for proposals for the Fiscal Year 1986 Defense SBIR (Small Business Innovative Research)

Program. Under entry *AF86-77, Air Force Rocket Propulsion Laboratory (AFRPL), Topic: Non-Conventional Propulsion Concepts* we find the statement: "Bold, new non-conventional propulsion concepts are solicited.... The specific areas in which AFRPL is interested include.... (6) Esoteric energy sources for propulsion including the zero point quantum dynamic energy of vacuum space."

Gravity and Inertia - Last Steps to the Frontier of Space

The launch of a mighty rocket is truly an awe-inspiring sight. As it strains against the twin forces of gravity and inertia, we can only marvel at the progress we have made in our attempt to throw off the shackles that bind mankind to earth.

But what of the fundamental forces of gravity and inertia? We have phenomenological theories that describe their effects (Newton's Laws and their relativistic generalizations), but what of their origins? The suggestion that these phenomena might themselves be traceable to roots in the underlying fluctuations of the vacuum was first put forward in a short paper published by the well-known Russian physicist Andrei Sakharov (known also for his human rights activism). Searching to derive Einstein's equations for general relativity from a more fundamental set of assumptions, Sakharov came to the conclusion that general relativistic phenomena could be understood as induced effects brought about by changes in the quantum fluctuation energy of the vacuum due to the presence of matter (Sakharov 1968). Although still in its exploratory stage, this hypothesis has led to a rich and ongoing literature on quantum-fluctuation-induced gravity, a literature that continues to yield insight into the role played by vacuum fluctuations (Puthoff, 1989, 1993, and references therein). Thus, once again, the underlying quantum fluctuation reference frame is called into play, in this case to be restructured in its role as the very fabric of spacetime itself.

Given an apparent deep connection between gravity and the quantum fluctuations of the vacuum, a similar connection must exist between these self-same vacuum fluctuations and inertia. Why? It is an empirical fact that the gravitational and inertial masses have the same value, even though the underlying phenomena are quite distinct. Why, for example, should a measure of the resistance of a body to being accelerated, even if far from any gravitational field, have the same value that is associated with the gravitational attraction between bodies? Indeed, if one is determined by vacuum fluctuations, so must the other.

We have all experienced inertia. A train lurches with a sudden jolt, and one is thrown to the floor. What is this force that knocks one down, seemingly coming out of nowhere? This phenomenon is an inbuilt feature of the universe that has perplexed generations of physicists from Newton to Einstein. Since in this example the sudden disquieting imbalance results from acceleration "relative to the fixed stars," one could provocatively say that it was the "stars" that delivered the punch. This key feature, emphasized by the Austrian philosopher of science Ernst Mach, has become known as Mach's Principle. Nonetheless, the mechanism by which the stars might do this deed has eluded convincing explication.

This issue was recently addressed in a paper entitled "Inertia as a zero-point field Lorentz force," in which it was argued that the resolution of the question of inertia and its connection to Mach's Principle, as with gravity, could be traced to the vacuum fluctuations (Haisch, Rueda and Puthoff 1994). In a sentence, although a uniformly moving body does not experience a drag force from the vacuum fluctuations, an accelerated body meets a resistance proportional to the acceleration. By accelerated we mean, of course, accelerated relative to the fixed stars. Since the argument can be made (Puthoff, 1989) that the local vacuum-fluctuation frame of reference is due to the quantum fluctuations of distant matter - the fixed stars - in the train example one can say that the punch was delivered by the vacuum fluctuations acting as proxy for the fixed stars through which one attempted to accelerate.

If further research continues to support the vacuum-fluctuation genesis of gravity and inertia - and it appears that this is likely to be the case (Haisch, Rueda and Puthoff, 1997, 1998) - then we are led to a remarkable implication: Given experimental evidence that vacuum fluctuations can be altered by technological means (for example, by the techniques of cavity quantum electrodynamics cited earlier), then, in principle, gravitational and inertial masses can also be altered.

Does anyone take such a concept seriously, that it might be possible to alter mass? In fact just this possibility was the basis of an investigation by the Advanced Concepts Office of the Propulsion Directorate of the Phillips Laboratory at Edwards Air Force Base in California. This office is charged with initiating research relevant to the development of 21st century space propulsion, and it is well understood that a fundamental understanding of gravity and inertia could well contribute new concepts in this area.

With a view to easing the energy burden of future spaceships, Robert Forward, a respected authority in the area of gravitation theory and measurement, accepted a Phillips Laboratory assignment to review the mass-alteration concept. After a one-year study investigating the present status of vacuum fluctuation research, Forward (1996) submitted his report to the Air Force, who published it under the title Mass Modification Experiment Definition Study.

The Abstract reads in part:

"... Many researchers see the vacuum as a central ingredient of 21st-Century physics. Some even believe the vacuum may be harnessed to provide a limitless supply of energy. This report summarizes an attempt to find an experiment that would test the Haisch, Rueda and Puthoff (HRP) conjecture that the mass and inertia of a body are induced effects brought about by changes in the quantum-fluctuation energy of the vacuum.... It was possible to find an experiment that might be able to prove or disprove that the inertial mass of a body can be altered by making changes in the vacuum surrounding the body."

With regard to action items, the Forward Report in fact recommended a ranked list of not one but four experiments to be carried out to investigate the vacuum-fluctuation inertia concept and its broad implications. These implications are being pursued in laboratories around the globe.

As we peer with longing into the heavens from the depth of our gravity well, hoping for some "magic" solution that will launch our spacefarers first to the planets and then to the stars, we are reminded of Arthur C. Clarke's phrase that highly advanced technology is essentially indistinguishable from magic. One of the more magical possibilities that looms on the scientific horizon is the portent of metric engineering, restructuring the vacuum to order - a designer vacuum, as it were. With gravity and inertia traceable to the underlying vacuum fluctuation fields, and with the field of cavity quantum electrodynamics giving us demonstration that such fields can be structured by technological means, the possibility of engineering the metric for space travel has moved from the pages of science fiction to peer-reviewed physics journals. With titles like **Wormholes in spacetime and their use for interstellar travel**, and **The warp drive: Hyper-fast travel within general relativity**, the potential with regard to exotic approaches can be said to have moved a little closer, in theory if not yet in practice. But who is to say what the 21st-century will bring?

To elaborate the metric engineering perspective, we begin with the oft-quoted velocity-of-light limitation. This restriction has its origin in the special theory of relativity, wherein equations show (and experiments confirm) that the mass of a body increases catastrophically as its speed approaches the velocity of light, with the corollary that it would take an infinite amount of energy to accelerate it to this speed. In the general theory of relativity, however, the possibility of tricks and shortcuts comes to the rescue, one trick being to increase the local velocity of light by manipulating the parameters of the vacuum.

With regard to the "trick" of manipulating the parameters of the vacuum to alter the velocity of light to advantage with regard to space travel, it is useful to begin with an analogy. It can easily be demonstrated that the velocity of sound in various substances, such as water or steel, differs from that in air. This is because the velocity of wave propagation in a substance depends upon the characteristics or parameters of that substance.

Similarly, the velocity of light in a material depends on the parameters of the medium through which it propagates. The velocity of light in glass, for example, is only about two-thirds that in air. Specifically, in

engineering terms the velocity of light in a medium is given by an expression $c = 1/(\mu\epsilon)^{1/2}$, where μ, ϵ are parameters called, respectively, the magnetic permeability and dielectric permittivity of the medium. These are simply parameters that indicate how polarizable (responsive) the medium is to magnetic and electric fields, how much magnetic or electric flux will result.

Polarizability of the vacuum is similar to the polarizability of more familiar substances such as solids, liquids or gases. Thus, the vacuum itself has properties characteristic of physical media. Indeed, a lecture, given by Nobel Laureate T. D. Lee (1994) in honor of the 150th birthday of one of physics' patriarchs Ludwig Boltzmann, was entitled Vacuum as a Physical Medium.

What might be surprising to the nonspecialist, within the context of general relativity and vacuum-energy physics the velocity of light in a vacuum is not as fixed as widely believed, but is context-dependent (Wesson 1992). For the case of light propagation near a massive body like the sun, for example, a distant observer would note that the velocity of light is reduced from its usual value by an amount proportional to the gravitational potential, a result first predicted by Einstein (1911). For the case of light propagation between closely-spaced Casimir plates, the velocity of light is increased due to the reduction of vacuum fluctuation energy between the plates (Scharnhorst, 1990).

Such effects can be conveniently modeled in terms of a variable vacuum polarizability. In this approach the conventional curved-space formalism of general relativity finds expression in terms of easily-understood, engineering-like concepts. The slowing and bending of a light ray near a massive body, for example, can be seen as deriving from spatial variation of the polarizability (or refractive index) of the vacuum, not unlike that of a light ray passing through a lens. This approach, often used in comparative studies of gravitational theories, has been formalized in the scientific literature (Lightman and Lee, 1973) and is especially useful with regard to a metric engineering perspective (Puthoff, 1996, and references therein).

Now if the vacuum polarizability were to be subject to manipulation by technological means such that within a localized region the value c could be made to assume a new value, say $c' = 10c$, then, without violating a local velocity-of-light constraint, travel at speeds greater than the conventional velocity of light within that region would be possible; it's only that a new constraint would apply within the localized region based on the local elevated velocity of light.

A recent speculative, but nonetheless scientifically-grounded, proposal to take advantage of just this possibility is the so-called "Alcubierre Warp Drive" (Alcubierre, 1994). Taking on the challenge of determining whether Warp Drive a la Star Trek was a scientific possibility, general relativity theorist Miguel Alcubierre set himself the task of determining whether faster-than-light travel was possible within the constraints of standard theory. Although this clearly could not be the case in the "flat space" of special relativity, general relativity permits consideration of altered spacetime metrics (vacuum characteristics) as presented here where such a possibility is not a priori ruled out. Alcubierre's further self-imposed constraints on an acceptable solution included the requirements that no net time distortion should occur (breakfast on earth, lunch on Tau Ceti, and home for dinner with the wife and children, not the great-great-grandchildren), and that the occupants of the spaceship were not to be flattened against the bulkhead by unconscionable accelerations.

A solution meeting all of the above criteria was found and published in a peer-reviewed journal, referenced above. The solution involved the creation of a local distortion of spacetime such that spacetime itself is expanded behind the spaceship, contracted ahead of it, and yields a hypersurfer-like motion faster than the speed of light as seen by observers outside the perturbed region (though without violating an elevated local velocity-of-light constraint within the region). In essence, on the outgoing leg of the journey the spaceship is pushed away from the earth and pulled toward its distant destination by the engineered local expansion of spacetime itself.

The Alcubierre Warp Drive and other marvels that can be envisioned as products of metric engineering

have yet to leave our drawing boards, unfortunately, for both theoretical and practical reasons. With only a decade or so of focused development, many theoretical questions remain unanswered. Those that have been tentatively answered would appear to require technological solutions beyond reach without unforeseen breakthroughs. Therefore we must question anew whether the vacuum can be engineered for spaceflight applications in the foreseeable future.

The answer to the above question is: "In principle, yes" (Puthoff, 1998). However, it is clear that there is a long way to go. Nonetheless, in keeping with the cliché "a journey of 1000 miles begins with the first steps," those first steps are now being taken in the universities, laboratories, and research institutes around the globe. Given that Casimir and related effects indicate the possibility of tapping the enormous residual energy in the vacuum fluctuations, and the demonstration in cavity quantum electrodynamics that the vacuum fluctuations can be manipulated to produce technological effects such as the inhibition or enhancement of spontaneous emission of excited states in quantum systems, the first steps along this path have already produced visible results. Combining this observation with the newly-emerging concepts of the relationship of gravity, inertia and warp drive as properties of a manipulable vacuum, our reach for those unforeseen breakthroughs is imperative.

And we must also ask whether in a universe of such magnificent proportions might not other species have asked the same questions, trod the same path? And perhaps found solutions? Humility would dictate that such may well be the case.

As cosmologies have developed and matured, only to be replaced by yet others, one common theme emerged again and again - the recognition that all things, living and nonliving, constituted an interactive and interdependent tapestry of existence in which each thread was but part of a greater whole. Out of this recognition one can discern a metaphysics in which man and Cosmos are seen as inextricably intertwined, interconnected by a ubiquitous, all-pervasive cosmic flow of energy that undergirds, and is manifest in, all phenomena. Called by many names in many traditions - soul, chi, élan vital - this pre-scientific cultural concept of an underlying energy flow made manifest expresses recognition of unity in diversity, a oneness that stands behind all things.

Our future is the Cosmos of worlds uncounted. Our survival as a species requires that we dare not shrink from this destiny. And the one companion from which we will never be separated on our long journey is the underlying ocean of energy on which we travel and from which springs all manifestation. What is certain to emerge as the Cosmos becomes part of our heritage is an ever-increasing recognition that we are, each and every one, in ecological balance with the Cosmos as a whole, immersed in an overall interpenetrating ground of being. Indeed, such an interpenetrating field of energy may be the true medium of life and consciousness itself.

Lessons For the Future

What can we learn from the first part of this book? What can we learn from these studies of the Cosmos, life, humanity, history, civilization and science?

First, we can learn to be both soberly concerned and thrilled beyond imagination about our future. The new technologies science is approaching will have a stunningly large impact on civilization. Indeed, they will record the greatest single exclamation mark of an inflection point in the lifespan of homo sapiens to date. Why? Two reasons.

The money sitting in your bank account right now is in reality a metric system for the one thing of value it represents: energy. The more money you have, the more energy you can buy from others, in the form of resources, labor, services, and their resulting products. The less money you have, the more you are forced to give your resources to others. What happens if energy becomes "free"? The economy will be restructured such that any process requiring energy alone will be reduced in value nearly to zero, and thus available to nearly everyone. That's a complicated and destabilizing transformation. We're seeing this effect in a smaller way with the rise of the Internet, as it reduces the cost of rich communications nearly to zero. The upside of overunity energy is that vast numbers of wondrous advances can be made, more useful to all people of the world than just the super-rich. Sea water can be converted to irrigation and drinking water, for free. Electricity and heat can be supplied within homes themselves, for free. Purely automated electronic services can be offered almost for free, and the cost of innumerable manufactured products will drastically drop.

A related technology will enable gravitational propulsion. With this new kind "propellantless" propulsion, we will be able to skip from place to place on Earth with the precision of a helicopter, the size of a one-man plane, the sound level of an automobile, at any speed we desire, with essentially no fuel bill. We will ultimately be able to dispense with the freeway system. And we will ask ourselves the meaning of a national border when individual space-time transportation devices emerge.

These are massive changes, and they must be approached with great care. The rapid progression of scientific advancement is today dangerous if not preceded by ethical belief systems with the power of religious morals. Since its origin in a divorce from religion, modern science has deeply lacked a foundation in experience. Today it lacks an ethical fabric of its own to bound, pace, and frame the consequences of its processes. Science is deeply amoral. Not immoral, amoral. In a sense this is an obvious product of its necessary opposition to an arthritic and over-interpreted orthodox religious moral paradigm. Through its neutrality, science has opened our eyes to our nature.

Science has taught us how to distinguish between lie and truth, and build order upon the latter. This knowledge has given us tremendous powers to control our lives, and to others to control our lives for us. We have imagined, communicated, and engineered our way towards wondrous revolutions in technology not even thinkable by homo sapiens 100 years ago. The idea that such revolutions are largely behind us is laughable. Yet science today laughs at the evidence that will come to represent its next renaissance. Indeed, the evidence for the greatest scientific revolutions of them all to date may be before our very eyes.

When science does wake itself from its present slumber on these issues, it must face first a critical fact: the failure of science through the centuries to control the use of its own discoveries and inventions is a sign of the depth of its fundamental disconnection between emotion and fact, between meaning and truth. This disconnection is perhaps now its greatest liability. It might not be such a complex problem if it weren't for the fact that science now undergirds Western society as much as religion, and science cannot match faith in terms of an expressed paradigm of ethics to guide behavior and to give meaning to experience.

Where can we find middle ground here? Is there a new intellectual place for both science and faith to cohabit? We now know for certain that natural evolution is a force of life more powerful than all forms of

civilization, science, and technology combined. We are thus advised to look to principles of evolution evident in history for the guideposts to our distant future. What core principles can we learn from evolution? I believe we can learn several lessons, and they're not ones that are often taught.

The first lesson regards the core principle of evolution most people know as "survival of the fittest", as mentioned above. The argument goes that only the strongest, richest, most aggressive, with the most might and right will survive. Many biologists have termed this literally a "war of survival". If evolution is indeed a war, then survival of the fittest can only be a tactic used to win a battle, for it is the one certain recipe for the ultimate loss of the war.

The key to correct this grievous mistake is to understand that if there is war, we will lose. We will only survive in peace. Throughout history, we have learned that every action has an equal and opposite reaction. Whether it is an eye for eye, the Golden Rule, the equation of Newtonian motion, or a decision and its consequence. Any force we send out, we will receive back. If we indiscriminately destroy natural microbes, they will so destroy us. If we lie to nature, nature will lie to us. If we murder nature, nature will murder us. If we murder the future, the future will murder us. The Cosmos behaves like a mirror to our minds.

It is thus not the survival of the fittest that we should worship, it is balance and equilibrium we should worship and remember – the survival of diversity, or the survival of all. It is the concept of being in peace with all kinds of truths, experiences, institutions, civilizations, people, animals, plants, and microbes. These are the tools with which to survive, evolve, and thrive across eternity, and peaceful life will create uncounted new tools, whereas devastation driven by instability will not.

Without enough peaceful diversity to add fiber, the fractured branch of evolution upon which we stand will be pruned from the tree of life. Whatever battles we choose to wage in our "war" of evolution, we must remember that ultimately the diversity of life will win, it is only a question of the scale of time within our microscope, telescope, or history book.

An intelligent person at the end of this century simply cannot and must not deny the truth of this. And we must act on this truth.

We cannot live by the power of lies or fear or mindless destruction. This is a scientific fact. The direct implication is that the mystical concepts of truth and love simply must be actual and real fundamental principles of the Cosmos that will ultimately be understood in terms of an expanded concept of physics.

Truth and Love

I believe we will one day see something akin to physical equations of emotion and thought, and understand how they manipulate the medium of the Cosmos. Remember the quotes from Einstein and Sagan at the beginning of this chapter. They drip with emotion, and only in so doing carry their power. Is that power not real? Indeed, emotion must be real, for it conveys meaning in experience. Emotion conveys the temporal significance of a truth.

The ethical character of our decisions across history always becomes ultimately measured along one common fundamental of philosophical, scientific, and spiritual thought: truth. We recognize the greatest movements in history as those founded in the pursuit of visions only later demonstrated to be founded in truth. Indeed, it seems that modern history reveals convincing testimony to the idea that Nature, as an aggregate function of all things in coexistence, distinguishes truth from lie, and follows a path of truth. Or more simply said, time favors truth.

The events of history that we can unanimously and fairly deem as "good" versus "evil" are those which perpetuate truth versus lie. It might seem to the philosopher that the question of a reliable ethical fundamental is not really difficult to imagine after all. What have we learned if not that truth is favored by Creation?

We have learned so many painful lessons that must be so rare for Nature to learn across the reaches of one of Her Galaxies. For in doing these things, we transformed a global society comprised of communities of animals into a civilization of "individuals" with powers approaching those of "gods", each one increasingly empowered with tools of the force of light.

As we face this circumstance, a time when we stand at the brink of learning our place at the beginning of an eternal future, I believe there is a one-word ethic that all of humanity can agree upon as a universal principle for a new millennium. The word is "truth". If we are capable of absorbing this principle, then I believe we shall come into an understanding of the ultimate function of the Universe. We will come to understand the "Grand Unified Theory", the combination of all forces into One Fundamental Force. A Force that is most powerfully controlled by thought alone – a Force given motion through intent. A Force that many human beings call "Love".

Consider the importance of this: the concept that the ultimate Force of the Cosmos is the same Force with which we "love" one another?

Rituals of Life

Such vital lessons as the importance of "truth" and "love" must be taught to our children from the first instant. For all the generations preceding the most recent one, we have employed devices to perpetuate the emotions surrounding our most important truths. We call these devices rituals, and life throughout evolution is replete with examples.

Life has always used rituals. Rituals are used throughout the activities of eating, sleeping, playing, and mating. Humans have used rituals since our time began, from the simplest body painting to the most sacred rites of passage. We gather when a child is born. We all name the child. Some of us are circumcised. Some of us are baptised. Some of us are blessed. Some of us are swaddled. As we grow into youth, all of us are schooled. We learn to speak. Some of us are sung to. Some of us learn to sing. Some of us learn to read. Some of us learn to write. Some of us even learn to calculate. We learn the difference between truth and lie.

When we reach adolescence, all of us search for both collective and individual meaning. Some of us learn to hunt, some of us learn to fight, some of us learn to smoke, some of us learn to sport, some of us learn to learn. Some of us are given priesthood, most of us are loved, and most of us learn to love. Most learn to hate, too.

As we enter adulthood, we are confronted with responsibility, and the responsibility of choice is felt with the greatest power ever. Most of us choose most of our path through whatever future our culture allows, and celebrate the major milestones along the way. We ritualize graduation. We ritualize marriage. We ritualize reproduction. We ritualize entertainment. We ritualize "success" and "failure" by the ultimate macroconstruction of ritual, our culture. We ritualize age through the birthday. And we ritualize death through mourning.

And our society ritualizes events from its history, in the form of holidays. We celebrate the founding of our ideologies of all forms and kinds.

We celebrate the important things in life. Indeed, rituals are the poetry of life.

What rituals must we create to perpetuate the love for the things we want to become in a million years? What systems of mental and physical practice must we put in place, in order to convey to our children's children the vision we have for them? We must not ignore billions of years of evolution, which have taught us that repetition is a key to reproduction, and the repetition of a system of beliefs is fulfilled by the ritual.

As David Van Biema said, writing for the cover of Life in October 1991, "Protect the spiritual ozone layer.

Consider ritual." Without ritual conveying the emotions of our beliefs, what are we? "Just interchangeable Nielson statistics? Are we plugged into everything... or, in reality, connected to nothing? Should we attempt to explain to our children how it all fits together, or assure them that it just floats weightlessly, like unsecured objects in a space capsule?" Actually, I believe that we are both entirely interconnected and utterly unsecured, and these two states are two sides of one state called being. The one being is the student and the teacher, separate and together at once.

The lesson to be learned from the first part of this book is that the kind of faith in truth and love promulgated by the rituals of religion, appropriately shorn of their dogmatism, may be the perfect remembrance structure for humanity to use as a foundation upon which to preserve truth for millennia to come, as a new foundation for science. For in the history of the world, few rituals have done as good a job as those of religion, despite profound flaws, in perpetuating the passing of sacred truth from generation to generation and from people to people.

Do I propose a return to orthodox concepts of religion? No, but I do propose that science reunite with spirituality. I believe there are greater reasons than just good sense to do this. I believe that this is not the first time conscious beings have asked and answered this question in this way.

As both a student and a teacher of sorts through this book, I ask a question to scientists: would you reevaluate your posture against the historicity of the greatest ritual traditions of our heritage – religion – if I showed you how to use vacuum energy to warp gravity upon convenience, enabling travel at effective speeds far greater than the speed of light?

If I showed you the way an "angel" could come down from the "heavens" and teach, would you listen to my hypothesis? Would you reconsider whether systems of belief in love and truth, ground in faith to the ultimate power of a higher order to which we aspire, are important to our future?

PART II

EVOLVING IN A PLACE CALLED EDEN IS A PROMISING YOUNG CIVILIZATION. WE GROW MORE DANGEROUS YET WISER EACH DAY.

TEACHERS HAVE TAUGHT US...

Most of us in western civilization have deeply pondered the questions: Is there a God? Is there truth to religion? For many of us, these are the most deeply tortured questions within our minds, because the consequences for our interpretation of human experience are held to be crucially hinged on what is believed to be a binary answer.

From my perspective, there is one concept of which I am logically and totally convinced - which science has utterly failed to teach me directly - but which religion has long held and somewhat rationally explained in its internal structure: There can be no question that the Cosmos is the product of intent.

Some of the brightest minds in science are focusing on this issue - the nature of intent. The precision of natural existence is so abundantly in evidence around us that it is hard to fathom how it could possibly be a construction of random forces with no intended design. Some are choosing to look at the anthropic principle and turn it on its head: Nature is so perfectly suited to create conscious life through evolution, and the constants of nature are so delicately and precisely tuned, that the concept of utter randomness is deemed more difficult to comprehend than some kind of intended creation. Though resort to a God begs the question of who is above God, science is no better, as it has no answer to the question of what happened before the Big Bang. These postures are quite literally equally unable to address the basic question of what it is that is *eternal*.

However, in the most fundamental teaching that creation was intended, religions are true to my view of reality, and have envisioned the concept of a continuing intellect-driven creation process that has yet to be broadly understandable or even imagined by science. It is in this concept of intended creation, or being, that the emotive feeling of meaning has a place for discussion within the mechanical laws of physics. The physicality of intention allows the physicist in me to incorporate an understanding of emotion into the laws that govern the universe. Unfortunately, only a few physicists have been brave enough to openly contemplate the possibilities of a connection from consciousness through intent to creation as they peer into the quantum vacuum, and most of them who do are grounded in good science.

But religions have succeeded in remembering the most sacred concepts known to our ancestors, such as the simplistic-sounding biblical account of intended creation. Whether the subjective faith is Judaism, Hinduism, Buddhism, Christianity, Islam, or more modern sects thereof such as the Mormon tradition of Christianity, historians do not generally question the genuine intent of the priests and scribes of ancient times attempting to pass sacred knowledge on to their descendents.

Of course, religions have also carried forward, in a few cases with equal or greater vigor, myths, personal interpretations, broken logic, misperceived teachings, and just plain outright lies.

As we survey the knowledge passed down from our world's religions, what have we collectively learned then? If we were to attempt, however imperfectly, to boil away the cloudy soup and find only the strongest, most resilient morsels of historical truth, what would we find? What are those ancient concepts most resonant with what modern western civilization has learned after a few centuries of good science? What

concepts of value were our ancestors attempting to pass down to us? What was so important to pass on that many of them chose to give their lives in order that we might remember?

I have chosen in this condensed version to answer these questions through a review of only a few realms of religious scholarship. A more complete inter-faith discussion can be found within the unedited version of The Truth.

The Physicist and the Mystic

"The achievements of modern science seem to contradict religion and undermine faith. But for a growing number of scientists, the same discoveries offer support for spirituality and hints of the very nature of God."

-- Sharon Begley, *Newsweek*, July 1998

"As a religious person, I strongly sense the presence and actions of a creative being far beyond myself and yet always personal and close by." To me, cosmology reveals "a universe that fits religious views... somehow intelligence must have been involved in the laws of the universe."

-- Charles Townes, *Nobel Prize winning Physicist, UC Berkeley*

Do the physicist and the mystic have anything in common as we approach the end of the second millennium?

Imagine going to a physics lecture on the current state of knowledge about the universe. The dialogue seems a little eccentric at times but otherwise fits the subject well. Now imagine you were in the wrong room and attending a lecture on what Eastern mysticism says about the same subject. It's a highly unlikely scenario but not impossible because both have come to strikingly similar conclusions about the fundamental nature of reality. After travelling a separate road for centuries many physicists have arrived at the same place as mystics. Taken as a whole this is nothing short of astonishing. How could such seemingly different and opposing views produce the same conclusions? Or perhaps a better question might be, How did the East penetrate to the heart of things so long before the West?

Ever since the Greeks first posited the atom, the overall goal of Western science has been to find the basic building blocks of creation, the smallest indivisible somethings out of which the universe is constructed. Achieving this goal meant breaking the universe down into its component parts to see how everything fit together. This is the mechanistic world view of classical physics. It reached its apogee with Newton and dominated Western science until the 20th century. It is still the view of reality held by most people because it appears to accurately describe the world we see around us. Yet what it describes is not precisely reality but rather a representation or approximation of reality. The problem comes when we mistake the representation for the real thing. This insight is succinctly phrased by the adage, "The map is not the territory".

At the beginning of the 20th century it seemed that physics was about to complete the millennia old quest of Western science. New insights and technologies made it possible to peer more deeply into the nature of things than ever before. But what physicists saw was radically, fundamentally different than what anyone expected. The truth that existed in the sub-atomic, quantum world was the opposite of what our rational and logically constructed representations had led us to believe. Einstein's reaction, recorded in his autobiography, was typical of the shock most physicists felt:

"All my attempts to adopt the theoretical foundation of physics to this knowledge failed completely. It was as if the ground had been pulled out from under

one, with no firm foundation to be seen anywhere
upon which one could have built."

Unnoticed at the time was the fact that another belief system had discovered the same truths as modern physics long before the 20th century.

Historically the Eastern world has always been a cipher to the West. This has changed somewhat in the last three decades as a global communications network has come online. But even now--fans of martial arts, yoga, Buddhism and the Dalai Lama notwithstanding--few people have taken the time to really explore its traditions and beliefs. If they did they would discover a world defined more by mysticism and intuition than science and logic. And yet, modern physics is hurtling towards the idea that the ultimate nature of the universe is as mystics have held all along: That all things are truly one, that the unity of everything is real and revealed in the inherent connection and instantaneous "communication" that takes place between sub-atomic particles. That reality is determined by awareness insofar as reality can be determined at all. That the act of observation itself (awareness) forces possibility to coalesce as choice, and determines a particle's "potential" to actualize in an identifiable way (does this mean that all observation then, is really participation?). And that to exist "objectively", to be fixed in a definite place and time, is something of an illusion.

Duality

2500 years ago the Greeks not only proposed the atom but also the separation of matter and spirit. By introducing this duality they turned away from the principle that all things were one and began a philosophical schism between East and West. In simplest terms it was about, What we can know and How we can know it.

Western civilization has been characterized by an intellectual bias in explaining the universe. We have used the intellectual tools of rational thought and logic to create representations of reality that have the virtue of being easier to grasp than reality itself. The danger, as noted previously, is in forgetting that these are approximations and may not accurately reflect the true conditions of the universe. The further danger exists in that the "language" employed, in this case rationality and logic, ends up determining the kind of questions that get asked and how the answers are interpreted. Like anything else taken to an extreme, it limits our ability to conceptualize or think about reality in any other way.

Eastern mystical traditions, perhaps going too far to the other extreme on the other hand, hold that since the universe is not governed by logic or rationality, it can never be understood intellectually. According to the Eastern tradition there are two levels of truth: the rational, logical, pragmatic truth of the everyday, and the intuitive, transcendental, profound truth of the Tao. This is the Tao in Taoist thought, the source of all things, the eternally creative force at work in the universe, the one absolute and transcendental truth. It is therefore inherent in the nature of the Tao that you can never know its reality through rational means: it is not amenable to language, classification or quantization but rather, like the world described by quantum physics, filled with seeming paradox, contradiction, and impossibility. Only through the intuition--which is not suborned by approximation or logic--can we come to know non-rational transcendental truth. Thus the Tao Te Ching, one of the classics of eastern thought says,

"The Tao that can be expressed in words is not the eternal Tao"

The Eastern tradition then, has accented the intuitive mode of knowing because it does not depend on intellectual concepts to grasp the true nature of things.

The terms "mystic" and "mysticism" have acquired a negative connotation in the West. They imply a type of reasoning that is unclear, imprecise or nebulous, or are associated with a belief in the fanciful or the make-believe. On the contrary however, a mystic is someone who has devoted themselves to clarity. By apprehending reality on a direct, experiential level they ignore the illusion of reality they believe is created

by the intellect--instead of a description of reality, the mystic seeks direct knowledge of its nature through intuition. Many cultural forms in the East are designed to enhance this process by creating opportunities to develop the intuition. Meditation and specialized forms of music, dance, and poetry are all meant to help shift the consciousness from the rational to the intuitive. Just as a scientist must learn to use experimentation to support rationality and logic, mystics must learn to use meditation to enter into and sustain a deep intuitive state. Mysticism often demands a regimen of contemplation and discipline which may entail years of study with one or more masters. This is analogous to the years of specialized schooling it takes to master the disciplines of western science. Overall, mysticism is a mode of knowing which seeks awareness of those aspects of existence not addressed by rationality and logic.

Though it has always been present to a degree, the mystical tradition is a footnote in the history of the West. From the 15th century on, little credence was given to intuition and mysticism as valid sources of knowledge. The ultimate result is that Western science has become estranged from spiritual and religious issues altogether. In the East however, all science and philosophy is understood in a religious and spiritual context. The primary threads of spirituality run through Buddhism, Hinduism, and Taoism. Their common goal is enlightenment. This term has often been used synonymously with wisdom in the west, but it is actually quite different. Wisdom refers to a body of insights realized over time through experience and reflection. Enlightenment on the other hand, is the state of oneness with the Tao. This signifies a deeper awareness and understanding of reality than is available through the intellect alone. This term also refers to the journey itself or the way of attaining this awareness. The Tao then, is both process and goal.

Converging Thought

In the West however, understanding the universe has become a solely intellectual process valid only in the context of science. Its purpose seems limited to discovering the ways and means to manipulate reality for some specific end. Using both intuition and intellect has allowed the East to see other insights into the nature of the universe. Intuition gives a deeply felt experience of reality that is lacking in the West. It also supplies a more complete and appropriate context for the intellectual consideration of all information and knowledge. The balance between these two modes of knowing underlies the great strength and longevity of Eastern tradition.

Nature, meaning the natural order and interaction of all things, is a source of both rational and transcendental knowledge. The observation and contemplation of nature has been central in formulating the concepts of Eastern thought. Again the "Tao Te Ching" says,

The Tao is embodied in Nature and Nature echoes the Tao.

In Eastern thought, nature teaches that change is a fundamental condition of the universe, that all things are relative and in constant flux within the eternal Tao. Therefore rigidity or fixedness is contrary to nature. Becoming attached to a specific viewpoint or opinion is foolish, for what is true or correct in one circumstance is bound to be false in another. The character of this change is cyclic, not just as it applies, for example, to the shifting of the seasons, but in the movement of all things. This cyclicity allows us to understand that life is a process of gain and loss, of advance and retreat, and that setbacks and obstacles are essential ingredients of growth and evolution.

The nature of the movement within these cycles is the fundamental dynamic of the Tao and of all Eastern thought. It is the principle of yin and yang--the rhythmic oscillation of all things between the poles of action and passivity. All manifestations in their overt, active stage are considered yang. Those in their passive, quiescent stage are yin. The Taoists say, "Yin conserves or accumulates, Yang expands or radiates". All complex processes including human existence, are not defined simply by one aspect or the other, but derive from the constantly shifting relationships between the two.

Yin and Yang

The principle of yin and yang has been studied and refined for over 2000 years. In that time it has acquired tremendous depth and subtlety and is capable of explaining the most intricate workings of the universe. Yet it has also retained a simplicity which allows us to see its manifestations wherever we look. In the movement of our bodies we observe that some muscles contract (active yang stage) while others relax (passive yin stage).

Water evaporates from the surface of the planet to form clouds (accumulative yin stage) then returns to earth as rain (radiating yang stage).

On the cosmic level gasses coalesce to form the sun (accumulative yin stage) then the sun gives off energy (radiating yang stage).

Though they embody a relationship between opposites they are manifestations of one thing and they move between its poles. They illustrate the attraction of opposites by making us realize that only in such movement can stability and equilibrium be found. They both possess a bit of the other and all things contain some of both.

Contemplating the harmonious relationship between yin and yang leads us to the concept of balance.

There is an old Chinese story about a couple who had only a hut on a small plot of land, a son, and a horse. They were poor but content. One morning the horse was gone, having run off in the night. Their neighbors expressed sorrow at this misfortune. But the couple only smiled and said, "Perhaps". The next night the horse returned home followed by several wild horses. Now the neighbors congratulated them on their good fortune. But again the couple smiled and said only, "Perhaps". Soon the couple's son tried to tame the wild horses but was thrown and suffered a broken leg. The neighbors expressed their condolences for this tribulation. But the couple's reply was the same as before. At this the neighbors decided the old couple had grown strange. The next day war was declared and soldiers came to conscript all the young men of the villages for the army. Only the couple's son was exempted because of his broken leg. This time the neighbors came and expressed their amazement at how lucky the couple were. To which the couple smiled and replied once more, "Perhaps". But this time the neighbors paused to think. Then smiling, they slowly nodded their heads and said, "Perhaps".

Is "perhaps" not just another way of saying that the concept is a possibility?

I believe there is indeed quantum physics buried within the machinery of our brains, engineering space through time.

Beyond Mysticism

Whatever the historicity, meaning, or relevance of mystical traditions such as the popular, sophisticated, and successful traditions of Hinduism and Buddhism, or the obscure and veiled Kabbalah, and whatever the human condition has contributed to their reconstruction or deconstruction from essential beginnings, almost all world mystical traditions fundamentally reinforce the idea that we are all a part of a much larger order. They assert that we must strive to be a vehicle of God, emanating our experience to others to unlock the keys to the universe.

In this teaching, the mystical traditions have played an indispensable role in framing the psychology of the world's faiths, and, I believe, framing the reality that science seeks to comprehend.

But to any God above, around, or inside us, it would have been clear that considerably more teaching would be necessary for a race of beings as primitive as we, to be able recognize a more complete concept of God.

TEACHERS HAVE TAUGHT US THROUGH THE AGES...

"The kairos is fulfilled, and the Kingdom of God has come near."

-- Mk.1:15

"God has provided that when his grace penetrates to the very center of a person, and from there illuminates all his being, he is able to walk on water without violating any of the laws of nature. When, however, a person turns away from God, he simply gives himself up to the laws of gravity. Then, he thinks that he can decide and choose, but he is only a thing, a stone that falls. And if we examine human society and souls closely enough and with real attention, we see that wherever the virtue of supernatural light is absent, everything is obedient to the mechanical laws as blind and as exact as the laws of gravitation."

-- Simone Weil, *Gravity and Grace*, London: Routledge and Kegan Paul, 1972

This is written as we are poised at the beginning of a new millennium, possessed with capacities of transportation and communication to any point on the globe and into the Cosmos. It is directed to an audience and a generation largely unfamiliar with biblical scripture. It attempts to break no new ground in religious scholarship, but rather simply restates a Christian message with an emphasis upon the way Christianity has met the stranger, the alien, the "other;" with the paradoxical proposal that the "other" be both honored by her distinctiveness, but as important, recognized for her common characteristics with existing accepted members of a community all blessed with the image of God.

Throughout, the contacts with deity, through divine appearance, angelic revelation, conversions, and ecstatic experience are related, in order to suggest that communication beyond "normal" human contact has existed from the beginning.

Fundamental teachings are reiterated as a challenge to our behavior and our being, such that we may be safely entrusted with the powers of life and death, creation and annihilation, that we clearly possess in genocidal weapons and delivery systems capable of destroying continents, as our capacity grows to communicate and perhaps, to travel beyond our own globe. Fundamental spiritual integrity would seem to be the qualification for such communication or travel, our passport, lest our savagery threaten God's creation.

The purpose of all this is to suggest that believers in the world's great religions, here looking particularly to the Christian tradition, need not react with fear toward whatever or whomever we may meet on our planet and beyond earth, our final frontier. In every circumstance of our movement beyond the current frontier, God has repeated, throughout the Hebrew Bible and Christian testament the admonition, "do not fear." This reassuring advice of deity appears again and again. Only when we see the stranger as enemy should we fear. Then we should fear our fear.

Approximately two thousand years ago, a young man lived, spoke, and died in such a way that the world was forever changed. Though the term was never used, so far as we know, in his lifetime, Christianity, a religion formed around his life, radically altered the direction of world history. Millions would agree that the life of Jesus Christ is the centerpoint of human history: with events prior to this time looking toward this life; and history thereafter inexorably affected by this life. The common calendar reflects this perception.

How is it that one life so profoundly affected human history? A tiny number of people seem to affect society beyond their family. A fraction of that number influence a larger society for a time. A small portion of those affect large regions of the world for a longer time. Some- how, the life of Christ has

affected almost all portions of the world and in many areas has become the influence that suffuses the culture so pervasively that we remain unconscious of the degree to which this is so. We are like fish swimming in a Christian sea, unaware of the water.

Huge changes in human society have occurred during the past two thousand years; and if the rate of technological change continues, more radical change is upon us, at our door.

Jaroslav Pelikan has observed the many ways that Jesus has influenced cultures as diverse as the Jewish community of the first century, under Roman rule; through the gentile culture of Asia Minor; to the Roman society of the Empire; to European Christendom; and the world of the Renaissance, Reformation, and Enlightenment; into the modern world whose paradigm has been dominated by physics and biology, with radical changes in travel and communication. In turn, these eras conceived Jesus in ways which would have shocked his disciples of the first century. The teacher, rabbi, messiah; the suffering servant; became, variously, the King of Kings, the Prince of Peace. (See, Jaroslav Pelikan, *Jesus Through the Centuries*, New Haven: Yale U. Press, 1985).

Now, with technology allowing communication, and perhaps travel, beyond earth, we look in both directions. From photographs of earth from space we see a globe verdant with the color of life. From that perspective— looking at earth from space— can we see each other with the love of brothers and sisters? Societal and tribal difference are seen as infinitely valuable variants of the endless forms of life created by a God clearly crazily in love with life. And all are in the image of the Creator. We become at once both the one and the many. From the perspective of a benign Cosmos observing our readiness, only now, during the last fraction of our last life of eight-hundred, to communicate and perhaps to travel beyond our own earth, how would we appear? By means of the same technology that allows us to communicate and to travel as never before, we also now possess the means to destroy life and creation. Christians, and members of this world's other religions, worshiping God by whatever name, face the same question: How have we absorbed, at our core, the image of God, as we come to possess a portion of the power of God? This is the question as we approach the frontiers of space at Y2K.

How will Christianity shape and be shaped by these radical social changes in our transportation and communication? We, with God's help, will determine the answer. But the problems of communication and interaction made possible by a new means of mobility have been central to the story of Christianity from the beginning. Each breakthrough in Christian history involved the challenge of a new frontier. Jewish Christianity met the challenge of dialogue with the gentile world of the Roman Empire. Communication with every culture thereafter presented once again the need of reassessment of the Christian story in the context of civilizations meeting each other, either for the first time, or at a new point of intimacy. We then examine our actual cultural and biological differences and our similarities. And then redefine, or perhaps comprehend at a different level, once again, what it means to be children of God, in the image of God.

The life and teachings of Jesus Christ, from a Christian perspective, constitutes the most dramatic and profound intervention of God in history. For the Christian, Jesus was so touched by God as to be His Son, God incarnate. For the Jewish Christian of the first century, He was the Messiah, the Anointed One of God, the heir to the throne of David, the Savior and the Deliverer of Israel. With the intervention of Pauline Christianity and the destruction of Jerusalem and the Temple in 70-71 A.D., the Christian through the centuries saw the mission and life of Jesus as the central point of an ever-expanding cosmic ripple that would affect all people, indeed all life, in a Cosmos increasingly revealed as being one organic whole. Whether expressed by the metaphors of mysticism: the deep spirituality of Francis of Assisi and Hildegard of Bingen of the twelfth or thirteenth century; or those of Teilhard de Chardin or Thomas Berry in the first and last of the twentieth century whose paradigm is dominated by the insights of biology and physics, the vision is ever-expanding, increasingly unitary and organic. The message of the parable of Jesus, the Good Samaritan, expands outward and inward with revelations of relationships that shock the recipient, both by our blindness, our inability to have seen and understood earlier; and by the implications for all that has been and yet will be. The answer to the question of Cain, or the lawyer in dialogue with Jesus, am I responsible

to brother or sister, "who is my neighbor," ripples outward to embrace Jew and gentile, slave and master, women and men, those of every race and nationality; through ecumenical insight and inter-faith dialogue building bridges between Christian denominations and among religious and spiritual traditions worldwide; and finally, with St. Francis, the distinction between that which is organic and inorganic is blurred with Sister Moon and Stars, and Brother Sun; and all life forms other than human are embraced by the poor little man of Assisi who preached to birds and befriended the Wolf of Gubbio. New frontiers now reveal themselves through the cosmic Christ.

The Birth of Jesus

We observed his star at its rising.

-- *Matt. 2:2*

Matthew's gospel was addressed to Jewish Christians, probably recently expelled from synagogue worship in the family fight of the first century as Christianity defined itself as something other than the mother community of all Christianity, the Jewish faith.

Matthew connected Jesus to Abraham, Isaac and Jacob, through David and Solomon, finally to Joseph, husband of Mary. The Lord had directed Abram (later Abraham) out of the ancient Sumerian city of Ur and led Abraham out of civilization and into a life of nomadic wandering. In leaving Sumerian culture the Lord set Abraham on a course that would create a unique and profoundly influential people, ancient Israel and the Jews. Through Isaac and Jacob and Moses, the founding prophet of the Law; later kings including their most beloved, David; through prophets from Amos to Isaiah and Jeremiah, the world would forever be changed. Monotheism-- belief in the one God-- would be born. A concept of linear time and the possibility of human intervention to affect human destiny would develop; a philosophy of never-ending circularity shorn of purpose and utterly deterministic would be abandoned; a sense of history would come into being; and a God of utter dependability and morality would evolve. (See Thomas Cahill, *The Gifts of the Jews*, New York: Doubleday, 1998) God's tender redemptive love, "hesed," would be seen to move ever outward: through Israel but finally meant to go to all creation. By the time of Isaiah, Jeremiah, and Hosea, the law was seen to be of necessity not only a legal code to govern external conduct, but more profoundly ethical and internal. God wanted mercy and not simply sacrifice. The law was to be written upon the tender places of our heart. Later centuries of Christian thought and action would forget this profound Jewish moral and intellectual and spiritual bequest. Christianity today must acknowledge both the debt and the richness of our Jewish heritage, impossible of overstatement, from which Christianity emerged and, shamefully the virulent anti-Semitism spawned by Christian leadership in church and state through the centuries.

In each of these historic levels of human advance, angels of God, or Jehovah himself, appeared: in dreams, and in personal appearance in the conscious light of day. Jesus' birth was no exception.

Mary, a young Jewish girl, was engaged to Joseph, according to post-biblical tradition and biblical inference, a considerably older man. Joseph found that Mary was pregnant and according to Jewish law, he could publically renounce the engagement. Instead, he decided privately to terminate the engagement, but this decision was reversed by an "angel of the Lord" who "appeared to him in a dream and said, 'Joseph, son of David, do not be afraid to take Mary as your wife, for the child conceived in her is from the Holy Spirit. She will bear a son, and you are to name him Jesus, for he will save his people from their sins.'" (Matt. 1:18-21; all quotations are from the New Oxford Analytical Bible, New Standard Revised Version, published by Oxford University Press, unless otherwise indicated.) Matthew notes for his Jewish Christian community that this fulfilled the prophecy of Isaiah that, "a virgin shall conceive and bear a son, and they shall name him Emmanuel," which means "God is with us." (Matt. 1:23; Isa. 7:14) Matthew records that "when Joseph awoke...., he did as the angel of the Lord commanded him; he took her as his wife, but had no marital relations with her until she had borne a son; and he named him Jesus" (Matt. 1:24-25)

The gospel of Luke was written, according to powerful tradition, by a gentile physician and friend and

traveling companion of the Apostle Paul. Though not a first-hand witness to the events he relates in his gospel, according to his account, he did obtain information from many eyewitnesses of Jesus, among whom might have been Mary, as the great Anglican scholar Frederick W. Farrar speculated at the beginning of this century, since this gospel relates some of the tenderest accounts of Jesus' nativity and life; and on more than one occasion Luke notes that Mary "pondered them in her heart" (e.g., Lk. 2:19; 51) From Luke's gospel and its companion book, The Acts of the Apostles, we derive, incidentally, most of the names and accomplishments of women in the New Testament during that powerfully patriarchal time. As Mark's gospel reflects the influence of Peter, Luke's gospel is powerfully Pauline.

Luke begins his gospel not with genealogical lineage to Abraham, since his audience was primarily composed of gentile Christians. Nor does he so much cite biblical prophecies as being fulfilled by Jesus' birth and ministry, since such would be unknown to his gentile community. But both Jew and gentile understood the portent of angelic intervention by God in human history. Luke begins by relating the vision of Zechariah, a priest, who by lot was chosen to enter the sanctuary of the temple and offer incense. While so serving, "there appeared to him an angel of the Lord, standing at the right side of the altar of incense." (Lk. 1:11) The angel announced that he was Gabriel. "I stand in the presence of God, and I have been sent to speak to you and to bring you the good news" that Elizabeth, Zechariah's wife, would conceive a son, even though both were "getting on in years;" and that his name was to be John. (Lk. 1:19;13) John would be "great in the sight of the Lord..." and would "turn many of the people of Israel to the Lord their God. ... to make ready a people prepared for the Lord." (Lk. 1:17) Zechariah, struck dumb by Gabriel for his incredulousness at such news in their old age, (remember how Abraham was incredulous, and when Sarah "chuckled," as she overheard God ["Shaddai"] tell her 100 year-old husband that his aged wife would conceive and bear Isaac) didn't speak again until the birth and naming of his son, when he wrote on a writing tablet "his name is John," when family members gathered for this event. (Lk. 1:63) (See Thomas Cahill, *The Gifts of the Jews*, pp. 74-76, New York: Doubleday, 1998)

In the sixth month of Elizabeth's pregnancy, Gabriel was sent by God to Nazareth, "to a virgin engaged to ... Joseph," whose name was Mary. Gabriel said "greetings, favored one! The Lord is with you." Mary was 'perplexed' by this announcement and Gabriel continued: "Do not be afraid, Mary, for you have found favor with God. And now, you will conceive ... and bear a son, and you will name him Jesus. He will be great, and will be called the Son of the Most High." Mary exclaimed that she was a virgin and wondered how this could be. Gabriel responded: "The Holy Spirit will come upon you and the power of the Most High will overshadow you; therefore the child to be born will be holy; he will be called Son of God." Mary was also told that her cousin, Elizabeth, "in her old age" had conceived a son and was now in her sixth month, for "nothing will be impossible with God." Mary responded, "here am I, the servant of the Lord; let it be with me according to your word." And Gabriel left. (Lk. 1:26-38)

Mary visited Elizabeth whose baby "leaped in her womb." Elizabeth exclaimed, "blessed are you among women." Mary then voiced one of the most sacred passages in Christian literature, the Magnificat, which begins: "My soul magnifies the Lord, and my spirit rejoices in God my Savior." (See Lk. 1:46-55)

Following the birth of John, Luke records the birth of Jesus in Bethlehem in Judea, where Joseph and Mary had traveled from Nazareth in Galilee. Mary gave birth to Jesus and "wrapped him in bands of cloth, and laid him in a Manger, because there was no place for them in the inn." (Lk. 2:4-7)

Then, an "angel of the Lord" appeared to shepherds watching their flocks at night; the angel "stood before them, and the glory of the Lord shone around them, and they were terrified." The angel reassured them: "Do not be afraid; for see--I am bringing you good news of great joy for all people: to you is born this day a Savior, who is the Messiah, the Lord." Then, "suddenly there was with the angel a multitude of the heavenly host, praising God and saying,

'Glory to God in the highest heaven, and on the earth peace....'" (Lk. 2:8-14)

Then, "when the angels had left them and gone into heaven," the shepherds went to Bethlehem to worship

Jesus and related to all who were there the message of the angels. And Mary "treasured all these words and pondered them in her heart." (Lk. 2:15-19)

Matthew tells of the visit of "wise men from the East, who came to Jerusalem, asking: 'Where is the child who has been born King of the Jews? For we observed his star at its rising, and we have come to pay him homage.'" The message of a "King of the Jews" being born threatened King Herod, who sought to gain information about the birth of Jesus from the wise men, who went toward Bethlehem: "There, ahead of them, went the Star that they had seen at its rising, until it stopped over the place where the child was. When they saw that the Star had stopped, they were overwhelmed with joy." After paying homage to Jesus, offering him gold, frankincense, and myrrh, "they were warned in a dream" not to return to Herod. (Matt. 2:1-12) And though Herod would massacre babies and children in Bethlehem, Joseph was warned before to leave. "An angel of the Lord appeared to Joseph in a dream and said, 'Get up, take the child and his mother, and flee to Egypt and remain there until I tell you; for Herod is about to search for the child, to destroy him.'" After Herod had died, "an angel of the Lord suddenly appeared in a dream to Joseph in Egypt and said, 'Get up, take the child and his mother and go to the land of Israel, for those who were seeking the child's life are dead.'" (Matt. 2:13-20)

The Gospel writers pass over the childhood and youth of Jesus in respectful silence, except to mention his presentation in the temple at the time of Mary's purification and the prophetic blessings of Simeon and Anna; and the dialogue between twelve year-old Jesus and the teachers of the law in the Temple. Luke simply records that "Jesus increased in wisdom and in years, and in divine and human favor." (Lk. 2:21-52)

After the ministry of John had commenced, Jesus sought baptism from John. The writer of the Gospel of John (the Evangelist, not the Baptist) records the instant recognition by the Baptist of Jesus as Messiah: "Here is the Lamb of God who takes away the sin of the world! ... I saw the spirit descending from the heaven like a dove, and it remained on him. I myself did not know him, but the one who sent me to baptize with water said to me, 'He on whom you see the spirit descend and remain is the one who baptizes with the Holy Spirit.'" The next day, John again saw Jesus, and again exclaimed, "Look, here is the Lamb of God!" (Jn. 1:29-36)

Mark, writing with the power of his principal source, the Apostle Peter, describes Jesus' baptism by John: "And just as he was coming up out of the water, he saw the heavens torn apart and the Spirit descending like a dove on him. And a voice came from heaven, 'you are my Son, the Beloved; with you I am well pleased.'" (Mk. 1:9-11)

Then the Spirit "drove" Jesus into the wilderness, to be tempted by Satan and "the wild beasts." And "angels waited on him." (Mk. 1:12-13)

Jesus was now ready for his ministry.

The Ministry of Jesus Christ

In the Beginning was the Word, and the Word was with God, and the Word was God... All things came into being through him... The Word became flesh and lived among us. Jn.1:1-14

The first three gospels (Matthew, Mark, and Luke), called the "synoptic" gospels because their organization is similar though their material differs one from another significantly, are sharply distinct from John's gospel. Rather, it would be more accurate to describe the gospel of John to be stupendous, grand, unique. The grandeur of God, the cosmic role of Jesus as Christ, "the Word made flesh," is dramatically seen from the beginning. Jesus is suddenly presented in the first lines as the Word of God, the Son of God, God Almighty, the Creator of all that is and present from the beginning:

In the beginning was the Word, and the Word was with God, and the word was God. He was in the

beginning with God. All things came into being through him, and without him not one thing came into being. What has come into being in him was life, and the life was the light of all people. The light shines in the darkness, and the darkness did not overcome it. ... The true light, which enlightens everyone, was coming into the world. He was in the world, and the world came into being through him; yet the world did not know him. ... The Word became flesh and lived among us, and we have seen his glory, the glory as the Father's only Son, full of grace and truth." (Jn. 1:1-5; 9-10, 14)

After the arrest of the Baptist and Jesus' return from forty days of fasting and temptation, He "came to Galilee, proclaiming the good news of God." (Mk. 1:14) Jesus began his ministry with that statement that believing people through the millennia had awaited with awe and anticipation: "The kairos is fulfilled," or as most English translations render the word, "the time is fulfilled, and the Kingdom of God had come near; repent, and believe in the good news." (Mark 1:15) Kairos refers to the most decisive moment, "dense with the possibilities of grace." (See, *The Road to Damascus: Kairos and Conversion*, a document signed by Third World Christians from El Salvador, Guatemala, Korea, Namibia, Nicaragua, the Philippines, and South Africa, CIRP London, 1989)

"The Kingdom of God" seems to be the centerpiece around which Jesus elaborated his ministry of healings and miracles; his parables and discourses; and his liturgical, sacramental and most spiritual practices. God's Kingdom seemed at once fulfilled by Jesus' ministry, present among and within the disciples; yet, also to be prayed for and anticipated in some future grand fulfillment. Ultimately, it would be to live in the constant and immediate presence of God. Provisionally, it is to live, with whatever mediation of church, dogma, ethical teachings, and spiritual practice; in communal and singular worship; with profound commitment so to live in ethical relation with others that Christians would see the face of Christ in every human being now or ever living; to treat all life and all creation with awe and reverence: finally to worship God with all one's heart, might, mind and strength.

Matthew records the Sermon on the Mount as preceding Jesus' calling his twelve apostles. Luke seems to see at least some portion of this core of Jesus' teaching as an ordination sermon and a charge delivered to the twelve and to others of his disciples. (See Luke 6:20-49) In either event, the great Sermon has been used then and ever since that time as constituting the central core of Jesus' teachings.

In this Sermon the motivating ideas of the Roman culture of occupation and power are turned on their head. Those who recognize their spiritual poverty will be blessed; mourners will be comforted; the meek, not the rich and powerful, will inherit the earth. The merciful will receive mercy and the pure in heart will see God.

The members of God's Kingdom will be a light to the world, visible as if on a hill; not under a basket. In that way our light will be seen and God will be revealed.

Essential elements of the law were seen as norms always should be: not as static neutral principles, somehow automatically to be applied with ruthless unfeeling rigor. But rather as principles founded upon and guided by grounded concepts of mercy, love (hesed) and justice. Indeed, ancient Israel's prophets had seen exactly that, as Jesus and the apostles made constant reference to "the scriptures." No Christian canon yet existed. Reference for these early Christians was always made, of course, to the Hebrew Bible, the point lost by centuries of Christian persecution of the Jews, the mother community of all Christianity. Jesus quoted the prophets extensively, especially Isaiah.

Those taken to task throughout the gospels were the lawyers, the casuists: the scribal interpreters of the law who through the centuries had debased it of its ethical and spiritual core. For Jesus, "lawyers and hypocrites" seems to have been a hyphenated term. Jesus, as Teacher, labored to move society another rung up the ladder toward God's Kingdom.

Jesus taught that the prohibition against murder had an interior warning against anger, the first emotional movement toward any overt act of violence. Therefore when we approach God in worship we must first reconcile with our estranged brother or sister. Jesus and Paul warned against using the adversarial or

inquisitorial institutions of law to resolve our disputes because this dehumanizing institutionalization of dispute resolution would often only make things worse. (Compare Matt. 5:23-26; and 1 Cor. 6:1-11) Better far if we agree with our adversary before reaching the courthouse steps.

Adultery should be avoided; but again, the emotional and mental antecedents were emphasized: lust and controlling avarice or possessiveness.

Male prerogatives to divorce at will and leave women without protection or recourse were condemned.

A prohibition against oaths was taken by Jesus to the level of radical truth-telling: we are to speak spare simple truth. No more, no less.

The lex talionis, an eye for an eye, had been an enormous upward step from antique religious notions of blood feud: the massacre of a village to avenge the rape of Dinah. Under the lex talionis, proportional justice was to be meted out: an eye for an eye. Before Jesus, this graphic, seemingly savage example had evolved into a form of simple tort law: the money or barter equivalent of an eye (or a donkey, a cart, or an arm or leg) if blame was upon another for such loss. Now, Jesus said, even this just and usually peaceful system was to be transcended.

We are to be responsive to need and non-violent in our relationships. We are not to resist evil with evil, but rather subsume it with good. If struck on the right cheek (the cheek upon which a ceremonial challenge would be delivered), we are to resist the invitation to violent resolution simply by turning the other cheek.

If someone asks for your coat, you must offer your cloak as well. We are to give to those who ask, without inquiry whether they are among the "worthy poor," since to do otherwise would be to exercise judgment upon another, forbidden by Jesus' teaching.

Then we reach the mother lode of Christian social and ethical teaching. Enemy love. That part of Christian teaching that would inflame Tolstoy, Mahatma Gandhi, Martin Luther King, Jr., and millions of other people of all faiths. Jesus knew that a violent response to violence must somehow be interdicted or an ascending spiral of violence would engulf society, our world, and with today's technology, perhaps beyond. We now possess the power to destroy all life on the planet and the capacity, perhaps, to carry this life-denying power throughout the universe. For the first time, we may threaten the creative work of God. No violent response can ever finally end violence. While such violence may indeed induce a cathartic moment; and may seem quick and decisive, rather than the often long and tortuous road of reconciliation, with an ending perhaps beyond one or more generation; nevertheless Jesus perceived and taught that the impulse to violence finally must be broken by one who refused to play the game: violence for violence for violence. Instead, violence must be absorbed without retaliation.

You have heard that it was said, 'You shall love your neighbor and hate your enemy.' But I say unto you, Love your enemies and pray for those who persecute you, so that you may be children of your Father in Heaven; for he makes his sun rise on the evil and on the good, and sends rain on the righteous and on the unrighteous. For if you love those who love you, what reward do you have? Do not even the tax collectors do the same? And if you greet only your brothers and sisters, what more are you doing than others? Do not even the Gentiles do the same? Be perfect, therefore, as your heavenly Father is perfect. (Matt. 5:38-48)

To be perfect as our Father is perfect is to be whole, complete. The great Sermon continues, with piercing insights into our human inclination to be otherwise. We are not to publish our piety or our charity. Our prayer is to be in our closet, apart from prayer for public admiration. Our prayer is to be simple, not ornate, rhetorical:

Our Father in Heaven hallowed be your name. Your Kingdom come. Your will be done, on earth as it is in heaven. Give us this day our daily bread. And forgive us our debts, as we also have forgiven our debtors. And do not bring us to the time of trial, but rescue us from the evil one. (Matt. 6:13)

We pray to God for His Kingdom to come. We avoid avarice and gluttony by looking only to the needs of the day, as Jehovah taught Israel with manna from Heaven, the "daily bread." He recognized that in our hearts we must forgive others if indeed we are ever to forgive ourselves, an infinitely harder task. Our frailty is acknowledged by pleading that times of trial may be avoided.

Powerful admonition is given to live faithfully in the present. To live in the past is to deny God's forgiveness; to live in the future is to live without faith. It is useless to hoard wealth of this world since its reality and our possession of it are so fleeting, fragile. Ultimately we go naked to God. Life devoted to the acquisition of wealth precludes a life of discipleship to God, since one or the other will prevail.

Our Father knows our earthly needs: food, clothing, shelter:

Look at the birds of the air; they neither sow nor reap nor gather into barns, and yet your heavenly Father feeds them. ... Consider the lilies of the field, how they grow; they neither toil nor spin, yet I tell you, even Solomon in all his glory was not clothed like one of these. But if God so clothes the grass of the field, which is alive today and tomorrow is thrown into the oven, will he not much more clothe you—you of little faith? Therefore do not worry, saying, 'What will we eat?' or 'what will we drink?' or 'What will we wear?' ... Indeed your heavenly Father knows that you need these things. But strive first for the kingdom of God and His righteousness, and all these things will be given to you as well. (Matt. 6:25-33)

We are to remain attentive to today. Not tomorrow. Or yesterday: "So do not worry about tomorrow, for tomorrow will bring worries of its own. Today's trouble is enough for today." (Matt. 6:34) This single provision of mental, physical and spiritual health if lived, would either make life simpler for mental and physical health practitioners, the drug industry, and clergy, or render many unemployed.

Jesus then moves to a principle clearly related to non-violence and the love of enemies. We are forbidden to judge. If we judge we will be judged by others; as well, through unconscious, devastating self-judgment, we fail to forgive ourselves and extend the same mercy toward ourselves that we understand we should do toward others. (Matt. 7:1-2) On the basis of this provision and the prohibition against oaths, early Christians refused many offices in Roman civil and military government.

Next and again related to judgment, radical truth telling, enemy love and non-violence, Jesus said: "Why do you see the speck in your neighbor's eye, but do not notice the log in your own eye? Or how can you say to your neighbor, 'let me take the speck out of your eye,' while the log is in your own eye? You hypocrite, first take the log out of your own eye, and then you will see clearly to take the speck out of your neighbor's eye." (Matt. 7:3-5)

Here we meet the subjectivity of evil, the phenomenon of projection, the scapegoat.

There is no doubt that biblical text reveals the belief in objective evil. Battling Satan, the forces of darkness, is laced throughout the Hebrew Bible and our Christian commentary. Nevertheless we meet subjective evil many times each day. And when pushed to a corporate level, such evil takes a life of its own and seems to transmute into its more sinister objective variation.

When I return from work harried and in stress and kick the cat through the hedge, it is for nothing the cat has done. Psychologists go through some form of psychoanalysis themselves before being let loose upon the public in order first to meet and recognize their own demons, lest unconsciously they damage patients by projecting their own torment into the patient, there to attempt their own cure in the psyche of the other. In a sense, perhaps, Jesus being driven by the Spirit into the wilderness, there to meet Satan and wild beasts, was his own human preparation for ministry, thereafter to be healed and comforted by angels.

Projecting our own fears into others is as old as human experience. The scapegoat has been the recipient of such projection. The human scapegoat is usually someone or some race or ethnic or religious group apart

from our own. "The stranger" is the classic victim. The alien. One not of our tribe, our culture, or nation; or our gender, or religion or our planet. The alien is the ideal scapegoat. By definition the alien is not one of us. His difference allows us to see him as sub-human and therefore not entitled to the respect our law and our culture demand that we give our own. Jesus' teaching regarding loving only those who love us, loving only our neighbor comes to mind. Enemy love demands that we extend the boundaries of love across the abyss of fear. Fear is the real enemy. Fear causes our projection, as we shrink from facing our demons, our wild beasts, and instead project them into another.

Antique religion used the scapegoat, the sacrificial victim, in order to organize a community in disintegration around the spectacle of the human sacrifice. The problem with such a means of organization is that it demands an increasingly more murderous act in order to work. The community, increasingly desensitized to violence by violence, demands an ever greater, more savage spectacle for the group frenzy to kick in. Hence the inexorable movement toward genocide. (See the work of the brilliant Stanford cultural theorist, René Girard; and his equally gifted disciple, Gil Bailie, *Violence Unveiled*, New York: Crossroad, 1995).

Hitler attempted to do this in Germany in the 1930's. In the face of the greatest inflation the industrial world has ever known, world-wide depression, a national feeling of being unjustly treated by the war-guilt clause of the Versailles Treaty, Hitler acted upon his own demons by projecting them onto Jews, Slavs, gypsies, homosexuals, communists. Normally, such paranoia will be registered in random, vicious but singular acts. When projection becomes the working syllogism of a corporate actor, however, we move from subjective evil to the embodiment of objective evil, or Satan. By our own unconscious projection, or by conscious cooperation with evil in victimization of others, we move from individual subjective evil and fall into the Shadow of God. Primo Levi, one of the most acute observers of the Holocaust and a survivor of the death camps, noted this movement from individual acts of scapegoating to genocidal holocaust:

Many people--many nations--can find themselves holding, more or less wittingly, that 'every stranger is an enemy.' For the most part this conviction lies deep down like some latent infection, it betrays itself only in random, disconnected acts, and does not lie at the base of a system of reason. But when this does come about, when the unspoken dogma becomes the major premise in a syllogism, then, at the end of the chain, there is the Lager. Here is the product of a conception of the world carried rigorously to its logical conclusion; so long as the conception subsists, the conclusion remains to threaten us. The story of the death camps should be understood by everyone as a sinister alarm-signal.

(Primo Levi, *If this is a Man*, p. 15, Stuart Woolf Trans., London: Sphere Books, Ltd., 1987).

Biblical religion is replete with examples of this phenomenon and includes references to human sacrifice that are veiled from the casual reader because of the cultural layers of metaphor that are unfamiliar to the modern reader. But biblical religion also provides the only way out: a love so profound and a consciousness of self so acute that projections might be recognized and withdrawn and pain healed; fear overcome through a love great enough to forgive injury; love of the enemy; and the removal forever of the very concept of the alien. The "other" is always respected as someone other than ourselves. But the differences don't anymore constitute bases for fear, or for prohibition from participation in society, or grounds for excommunication from communion. Rather, differences become our recognition of the image of God in so many forms that they become living testaments to God's boundless love of life so various and without end that we stand in awe of Deity so hopelessly in love with life.

Gerard Manley Hopkins was an English Jesuit living in the nineteenth-century. The Jesuits, then not now, were a conservative order, military in more than metaphor. Nineteenth-century England was some distance from Berkeley in the 1960s. Yet this Jesuit priest of a conservative order in a class-driven country at that particular time provided us with a psalm in praise of utter glorious diversity and love of all life.

Pied Beauty
Glory be to God for dappled things--

For skies of couple-color as a brinded cow;
for rose moles all in stipple upon trout that swim;
Fresh-firecoal chestnut-falls; finches' wings;
Landscape plotted and pieced--fold, fallow, and plough;
And all trades, their gear and tackle and trim.
All things counter, original, spare, strange;
Whatever is fickle, freckled (who knows how?)
With swift, slow; sweet, sour; adazzle, dim;
He fathers-forth whose beauty is past change:
Praise him.

-- Gerard Manley Hopkins 1844-1889

We sense the presence of a God crazily, passionately in love with life: life infinitely diverse, in abundance sufficient not simply to fill the earth, but brimful and overflowing to fill the Cosmos.

Finally, the way beyond the world of the scapegoat and subjective evil is through non-judgment, a consciousness sufficient to withdraw our projections, an ever-expanding definition of "neighbor," and an enemy love that reveals the alien as neighbor, brother, sister, self; healing love integrating both soul and community. This is the "new law" given by Jesus before his Passion: that we love each other as he loved us.

As has been noted, a central idea around which the gospel writers organized the story of the ministry of Jesus was the Kingdom of God. Jesus, in sermons, healings, miracles, parables, and in the recorded conduct of his own life, attempted to reveal the nature of God's kingdom. Similarly, while he was accorded many titles by others such as rabbi, teacher, the messiah and Son of God, Jesus usually referred to himself as the "Son of Man." Some writers have interpreted this as primarily reflecting Jesus' humanity, some his divinity. Jim Douglass has suggested that one translation of this term might be "The Human Being." (See James W. Douglass, *The Nonviolent Coming of God*, Maryknoll, N.Y. : Orbis, 1991) That is, Jesus understood his mission as revealing the potential of humanity: to live with such truth, compassion and reverence that we fulfill our creation in God's image, being whole and complete. For the Christian then, Jesus' life became the supreme example of human potential. The teachings and the life of Jesus demonstrate what that might be.

At the beginning of his ministry, Jesus revealed his purpose. He began in Nazareth, where he had grown up, worshiping in the synagogue, "as was his custom." He started to read from the Isaiah scroll and found the message he wanted:

The Spirit of the Lord is upon me, because he has anointed Me to bring good news to the poor. He has sent me to proclaim release to the captives and recovery of sight to the blind, to let the oppressed go free, to proclaim the year of the Lord's favor. (Lk. 4:16-19)

From that point, the gospel writers relate acts of healing the sick, restoring sight to the blind, curing lepers, eating and drinking with the outcasts of society, demonstrating compassion rather than judgment toward sinners, avoiding the harsh brittleness of the law; even raising the dead and calming nature's winds and waves.

Throughout, he revealed both compassion for the particular person or situation before him, but also revealed larger truths from the particular circumstance. He was the compassionate teacher. He combined at once the earthy reality of the particular human circumstance before him, as Son of Man; and also a profound perception of the numinosity of his mission in the foundation of the Kingdom of God.

To Nicodemus, a "leader of the Jews," who came to Jesus at night to avoid society's censure, Jesus told him that no one could see the Kingdom of God unless he was "born from above." Nicodemus revealed

complete yet human misunderstanding: can anyone once again enter his mother's womb? Jesus responded that his disciples would be born not only of water but the spirit as well. And that "no one has ascended to heaven except the one who descended from heaven, the Son of Man." And just as Moses lifted up the serpent in the wilderness, so must the Son of Man be lifted up, "for God so loved the world that He gave His only Son, so that everyone who believes in him may not perish but may have eternal life." (Jn. 3: 1-16)

While the synoptic writers emphasize Jesus' ministry in Galilee, John records events in his Judean ministry, and a brief time in Samaria. A Samaritan woman came to draw water from a well and Jesus asked for a drink. Since social relations were usually not had between Jews and Samaritans, she was surprised and asked how it was that he would ask water of a Samaritan woman. He replied that if she knew whom she was addressing, she would ask of him "living water." With complete incomprehension, she responded, "sir, you have no bucket, and the well is deep. Where do you get the living water?" Jesus replied: "Everyone who drinks of this water will be thirsty again, but those who drink of the water that I will give them will never be thirsty. The water that I will give them will become in them a spring of water gushing up to eternal life." (Jn. 4:7-14) John records that Jesus stayed for a time with them and that "many Samaritans from that city believed in Him because of the woman's testimony." (Jn. 4:39)

The actions of Jesus here and in the events following reveal his immediate response to people as the Human Being, or Son of Man, but at the same time the symbolism chosen by Jesus at once reaches back to the acts of God announced by Moses to Israel, and forward to his own crucifixion; and with solemn eucharistic meaning, to the Last Supper, the origin of the Mass, the eucharistic meal, the Christian sacrament.

Jesus returns to Cana, where the first miracle had occurred at a wedding feast where Mary importuned Jesus to deal with an absence of wine; Jesus responded by changing water to the most rich wine. Now, Jesus heals a young boy near death, the son of a royal official in Capernaum. (Jn. 4:46-54)

Later, Jesus is healing many sick people near the Sea of Galilee. The crowds, hearing of the healings, became so large that Jesus and his disciples went up a mountain in retreat. Large crowds "still followed." Jesus was concerned for their need of food. Five thousand people were there, and the disciples had only five barley loaves and two fish. Jesus instructed the disciples to tell the people to sit down. He then began to distribute the loaves and fishes until all were fed. After feeding them all, the fragments of the loaves were gathered into twelve baskets. The people saw this as a sign that Jesus was the Messiah. When Jesus saw that the people were going to attempt to force him to be their King, he withdrew again to the mountain while the disciples put to sea towards Capernaum. A storm arose and still Jesus had not joined them by boat. Then the disciples saw Jesus walking toward them on the water. As was God's message so often in the Hebrew bible, where a new challenge frightened the people, and now in what would become a Christian companion testament, Jesus saw their terror and told them simply, "do not be afraid."

On the other side of the sea, the crowds of people finally found Jesus again. They asked, "Rabbi, when did you come here?" Jesus responded that they did not really comprehend the momentous sign that they just experienced, but simply wanted more bread: "Do not work for the food that perishes, but for the food that endures for eternal life, which the Son of Man will give you. For it is on Him that God the Father has set His Seal." The crowd responded that "our ancestors ate the manna in the wilderness; as it is written, 'He gave them bread from Heaven to eat.'" Jesus responded: "It was not Moses who gave you bread from heaven, but it was my Father who gives you the true bread from heaven, for the bread of God is that which comes down from heaven and gives life to the world." They asked for such bread, and Jesus declared :

I am the bread of life. Whoever comes to me will never be hungry, and whoever believes in me will never be thirsty. ... Your ancestors ate the manna in the wilderness and they died. This is the bread that comes down from heaven, so that one may eat it and not die. I am the living bread that came down from heaven. Whoever eats of this bread will live forever; and the bread that I will give for the life of world is My flesh. ...Very truly, I tell you, unless you eat the flesh of the Son of Man and drink his blood, you have no life in you. (Jn. 6:25-53)

At this point in Jesus' ministry, many people left Jesus for such a difficult teaching. Jesus asked the twelve if they too would leave. Peter responded, "Lord, to whom can we go? You have the words of eternal life... You are the Holy One of God." (Jn. 6:68-69)

Jesus then left Galilee to travel to Jerusalem for the Jewish festival of Booths. On the last day of the festival, he returned again to the central fact of his ministry and to the symbol so integrally related: the crucifixion and resurrection and the paschal meal. "Let anyone who is thirsty come to me, and let the one who believes in me drink." Then quoting scripture fulfilled in himself, "out of the believer's heart shall flow rivers of living water." (Jn. 7:37-39)

Some of the most exquisite, compassionate teachings of Jesus lay ahead. But increasingly a sense of foreboding gripped the disciples. At this time, they did not understand what they were seeing or hearing. Later, they would remember and comprehend.

Peter's confession of faith seems to mark the turning point, as Jesus heads for Jerusalem and death. At Caesarea Philippi, he asks His disciples if they understand who he is. They respond, some say you are John the Baptist, or Elijah, Jeremiah, or some other of the prophets. Jesus then said, "but who do you say I am?" Peter responds: "You are the Messiah, the Son of the living God." Jesus' reply looked forward to a time beyond crucifixion and resurrection: "Blessed are you, Simon son of Jonah! For flesh and blood has not revealed this to you, but my Father in Heaven. And I tell you, you are Peter, and on this rock I will build my church, and the gates of Hades will not prevail against it." (Matt. 16:13-18)

After this, the synoptic writers record that Jesus told them openly what was ahead. He would lead no armed revolt against Roman occupation. The Zealot alternative would not be followed: "From that time on, Jesus began to show his disciples that he must go to Jerusalem and undergo great suffering... and be killed, and on the third day be raised." (Matt. 16:21)

Six days later, Jesus received affirmation for what impended from his Father. Jesus took Peter, James and John to a "high mountain, by themselves." There, "he was transfigured before them, and his face shone like the sun, and his clothes became dazzling white." Mark adds, "such as no one on earth could bleach them." (Mk. 9:2-3) "Suddenly there appeared ... Moses and Elijah, talking with him. Then Peter said to Jesus, 'Lord, it is good for us to be here.'..." While Peter was still speaking, "suddenly a bright cloud overshadowed them, and from the cloud a voice said, 'This is my Son, the Beloved; with him I am well pleased; listen to him!'" At this, the disciples "fell to the ground" in fear.

Again when faced with numinosity so holy that humans could not comprehend, Jesus said "do not be afraid." Jesus then ordered them, "Tell no one about the vision until after the Son of Man has been raised from the dead." (Matt. 17:1-9) (See also Lk. 9:28-36)

Between the Transfiguration and the week of Jesus' Passion, the gospel writers record many healings, miracles, and teachings, in sermons and stories. To the question "who is greatest in the Kingdom of Heaven," Jesus "called a child, whom he put among them, and said, 'Truly I tell you, unless you change and become like children, you will never enter the kingdom of heaven. Whoever becomes humble like this child is the greatest in the kingdom of heaven.'" (Matt. 18:1-3)

Peter asked Jesus how many times he should forgive a sin against him "by another member of the church.... As many as seven times?" Jesus replied, "not seven times, but I tell you, seventy-seven times." (Matt. 18:21-22)

When the mother of James and John asked Jesus that they be allowed to sit on his right and left, in the Kingdom of Heaven, Jesus replied, as he would later demonstrate with one of his last acts—washing the disciples' feet—that those who would be greatest must be the servant of others; "just as the Son of Man came not to be served but to serve, and to give his life as ransom for many." (Matt. 20:20-28)

Jesus gave a number of teachings and parables on the cost of discipleship. To the rich young man who had kept the law, Jesus told him there was one thing more he must do: sell all he had and give to the poor. The young man left Jesus, sorrowfully. Jesus said that it "is easier for a camel to go through the eye of a needle than for someone who is rich to enter the Kingdom of God." (Matt. 19:13-26)

To one who wanted to follow Jesus, but said "first let me go and bury my father," Jesus replied "let the dead bury their own dead; but as for you, go and proclaim the Kingdom of God." (Lk. 9:59-60) To another who had said he would follow Jesus, but "let me first say farewell to those at home," Jesus said, "no one who puts a hand to the plow and looks back is fit for the Kingdom of God." (Lk. 9:61-62) (Jesus had exemplified the same severe single-mindedness to his own ministry at its beginning, when his family asked to speak with him during a sermon to the disciples. He said his mother and his brothers and sisters, now, were all those who followed his own discipleship to God.)

To the lawyer who asked what he had to do to inherit eternal life, Jesus put the question back to one who already knew the law. The lawyer replied that one must love God, "with all your heart, and with all your soul, and with all your strength and with all your mind; and your neighbor as yourself." Jesus agreed. The lawyer fell victim to an occupational disease and asked one too many questions: "Who is my neighbor?" Jesus replied with one of the most riveting parables of the New Testament, and one that possesses the Pauline overtones that would later shape the church. A man traveling from Jerusalem to Jericho fell into the hands of robbers and was left nearly dead. He was passed by a priest and a Levite and was finally given succor by a Samaritan, despised by the Jews as being of mixed blood and who worshiped God in a debased form of an earlier truth. Jesus asked the lawyer in return, who was the neighbor to the wounded man and the lawyer replied, "the one who showed him mercy." Jesus said, "Go and do likewise." (Lk. 10:25-42)

Jesus faced constant censure from the social and religious leadership by associating intimately with tax-collectors, prostitutes, the poor, and sinners of every stripe: the marginalized of society. In response he told perhaps the two most beloved parables in scripture: the Lost Sheep and the Prodigal Son. The good shepherd leaves the ninety-nine sheep to find the one who is lost. Once it is found, "he lays it on his shoulders and rejoices." And when home, he calls his friends and says, "'rejoice with me, for I have found my sheep that was lost.' Just so, I tell you, there will be more joy in heaven over one sinner who repents than over the ninety-nine righteous persons who need no repentance." (Lk. 15:3-7)

The prodigal younger son demands his inheritance from the father and leaves both father and older brother for a life, faraway, of profligacy and sin. Realizing his pitiful state and his mistake, he returns, and offers to work as his father's hired hand. But the father places his robe and his ring upon his son and orders servants to kill the fatted calf: "for this son of mine was dead and is alive again; he was lost and is found." The elder son, hearing music and dancing, objects that no such attention marked his long years of fidelity to his father. The father says "you are always with me and all that is mine is yours. But we ... celebrate and rejoice because this brother of yours was dead and has come to life; he was lost and has been found." (Lk. 15:11-32)

When Jesus was teaching in the temple, the scribes and Pharisees brought a woman before him: "teacher, this woman was caught in the very act of committing adultery. Now in the law Moses commanded us to stone such women. Now what do you say?" Jesus did not immediately respond but continued to write "with his finger on the ground." When they continued to demand his judgment, he said, "Let anyone among you who is without sin be the first to throw a stone at her." Jesus then continued to write on the ground, as the people "went away, one by one, beginning with the elders." (Jn. 8:1-11)

Jesus then spoke to the people. Before, he had called himself the Bread of Life, water springing up to eternal life. Now he said, "I am the light of the world. Whoever follows me will never walk in darkness, but will have the light of life." (Jn. 8:12) Then, consistently throughout John's gospel, the great teacher moved from archetypal metaphor to a homely vital individual circumstance, carried out with earthly sensuality. Jesus saw a man "blind from birth." The disciples asked who sinned, himself or his parents, to account for

such grief. Jesus said, "neither this man nor his parents; ... we must work the works of Him who sent me while it is day; the night is coming when no one can work. As long as I am in the world, I am the light of the world." Then he "spat upon the ground and made mud with saliva and spread the mud on the man's eyes, saying to him, 'go, wash in the pool of Siloam.'" The man complied and could see. (Jn. 9:1-7)

Then, with profound resonance through time, backward to the psalms, perhaps particularly the one most treasured, the twenty-third psalm ("The Lord is my Shepherd. . .") and forward to fulfillment in the ministry of St. Paul, Jesus spoke of the sheep fold. "I am the gate for the sheep... Whoever enters by me will be saved, and will come in and go out and find pasture. ...I am the good Shepherd. The good shepherd lays down his life for the sheep I know my own and my own know me, just as the father knows me and I know the Father. I lay down my life for the sheep. I have other sheep that do not belong to this fold. I must bring them also, and they will listen to my voice. So there will be one flock, one shepherd." (Jn. 10:1-16)

The time had come for the culmination of the ministry of Jesus. The Passover was near. Jesus entered the city upon a young donkey, in fulfillment of scripture. Large crowds had gathered, in anticipation of his coming. Some spread their cloaks on the road, while others "cut branches from the trees and spread them on the road." The crowds went before him shouting "Hosanna to the Son of David! Blessed is the one who comes in the name of the Lord! Hosanna in the highest heaven!" (Matt. 21:1-9) Luke records that some Pharisees in the crowd said, "Teacher, order your disciples to stop." To which Jesus replied, "I tell you, if these were silent, the stones would shout out." (Lk. 19:39-40)

That the Passion week was the centerpoint of Jesus' ministry, is reflected in the fact that John devotes one half of his gospel to this final week. He places some of the greatest of Jesus' teachings within this final time.

John records that Philip and Andrew brought Greeks to see Jesus. Jesus told them:

The hour has come for the Son of Man to be glorified... unless a grain of wheat falls to the earth and dies, it remains just a single grain; but if it dies, it bears much fruit. Those who love their life will lose it, and those who hate their life in this world will keep it for eternal life. ... Now my soul is troubled, And what should I say— 'Father, save me from this hour? No, it is for this reason I have come to this hour. Father, glorify your name.' Then a voice came from the heaven, 'I have glorified it, and I will glorify it again.' (Jn. 12:20-29)

Some of the crowd said that an angel had spoken.

Jesus told the crowd, "and I, when I am lifted up from the earth, will draw all people to myself." Some in the crowd objected that the Messiah was to stay forever as earthly king. Jesus responded, "The light is with you for a little longer. Walk while you have the light, so that the darkness may not overtake you. ... While you have the light, believe in the light, so that you may become the children of the light." (Jn. 12:32-36)

When the disciples more fully understood that he would be taken, they asked of his return. Jesus told them that not even the angels of God knew that; there would be wars and earthquakes but they should not be concerned. Finally, "the good news of the Kingdom will be proclaimed throughout the world, as a testimony to all the nations : and then the end will come." (Matt. 24:14) The "sign of the Son of Man will appear in heaven," and "they will see the Son of Man coming on the clouds of heaven." (Matt. 24:30)

Matthew records a prophesied final judgment "when the Son of Man comes in his glory, and all the angels with him;" all nations will be gathered. "Then the King will say to those on his right hand, 'come, you that are blessed of my father, inherit the Kingdom prepared for you from the foundation of the world; for I was hungry and you gave me food, I was thirsty and you gave me... drink, I was a stranger and you welcomed me, I was naked and you gave me clothing, I was sick and you took care of me, I was in prison and you

visited me." Then, said Jesus, the righteous will ask when he was so afflicted, and when it was they served. "And the King will answer them, 'Truly I tell you, just as you did it to one of least of these who are members of my family, you did it to me.'" (Matt. 25:31-46)

Now the centerpiece of the kairos moment had come. The New Jerusalem Bible records John's testimony with great beauty: "Before the festival of the Passover, Jesus, knowing that his hour had come to pass from this world to the Father, having loved those who were his in the world, he loved them to the end." (Jn. 13:1) Jesus at some point got up from the table, "tied a towel around himself," put water in a basin and began washing his disciples' feet. Peter protested: "Lord, are you going to wash my feet? You will never wash my feet." Jesus said, "Unless I wash you, you have no share with me. You do not know what I am doing, but later you will understand." With that utterly transparent impetuosity that endeared him to the Lord and the millions of disciples through the centuries, Peter then exclaimed, "Lord, not my feet only but also my hands and head." Jesus assured Peter that this cleansing was sufficient. "Do you know what I have done to you? You call me Teacher and Lord-- and you are right, for that is what I am. So if I, your Lord and Teacher, have washed your feet, you also ought to wash one another's feet." (Jn. 13:3-14)

John, "the disciple whom Jesus loved," recorded great sayings of Jesus during the Last Supper, not found in the synoptic gospels: "Little children, I am with you only a little longer; you will look for me... where I am going, you cannot come. I give you a new commandment, that you love one another. Just as I have loved you, you also should love one another. By this everyone will know that you are my disciples, if you have love for one another."

Peter asked, "Lord where are you going?" Jesus answered, "where I am going, you cannot follow me now but you will follow afterward," forecasting Peter's crucifixion, as early Christian tradition attests, in Rome, but upside down, at his request, since he felt unworthy to be crucified in the same manner as his Lord. (Jn. 13:31-36)

Jesus told the disciples, "In my Father's house there are many dwelling places." He told them he was going to prepare a place for them and would return later to "take you to myself."

Thomas said, "Lord, we do not know where you are going. How can we know the way?" Jesus said: "I am the way, and the truth, and the life. No one comes to the Father except through me."

Phillip responded, "Lord, show us the Father and we will be satisfied." Jesus said, "Have I been with you all this time, Philip, and you still do not know me? Whoever has seen me has seen the Father. ... I am in the Father and the Father is in me." (Jn. 14: 1-10)

Jesus then told the disciples, "I will not leave you orphaned." He promised to send the Holy Spirit, the Spirit of Truth: "you know him, because he abides with you, and will be in you." He will "teach you everything, and remind you of all that I have said to you. Peace I leave with you; My peace I give to you. ... Do not let your hearts be troubled, and do not let them be afraid." (Jn. 14:15-27)

Jesus called himself the True Vine and the disciples the branches. "As The Father has loved me; abide in my love. ... This is my commandment, that you love one another as I have loved you. No one has greater love than this, to lay down one's life for one's friends." (Jn. 15:1-13)

He told them: "I came from the Father and have come into the world; again, I am leaving the world and am going to the Father." The disciples said, "yes, now you are speaking plainly, not in any figure of speech!" (Jn. 16: 28-29)

The synoptic gospels record the final meal together. Matthew says: "while they were eating, Jesus took a loaf of bread, and after blessing it he broke it, gave it to his disciples, and said, 'Take, eat; this is my body.' Then he took a cup, and after giving thanks he gave it to them, saying, 'Drink from it, all of you; for this is my blood of the covenant, which is poured out for many for the forgiveness of sins. I tell you, I will never

again drink of this fruit of the vine until that day when I drink it new with you in my Father's Kingdom.'" (Matt. 26 :26-29)

The synoptics record that at that moment Jesus and the disciples "sung the hymn," and "went out to the Mount of Olives.'" (Matt. 26:30)

At this point, John's testament records the last great sermon of Christ: The Intercessory Prayer, the Prayer of the Great High Priest: "Father, the hour has come: glorify your Son that the Son may glorify you. ... This is eternal life, that they may know you, The only True God, and Jesus Christ whom you have sent. I glorified you on earth by finishing the work that you gave me to do. So now, Father, glorify me in your own presence with the glory that I had in your presence before the world existed." Here, John connects this near-ending of his gospel with the soaring cosmic beginning: Jesus as Creator of all that is.

Jesus now prays for the disciples who will be left to continue the work: "And now I am no longer in the world, but they are in the world, and I am coming to you. Holy Father, protect them in your name that you have given me, so that they may be one, as we are one." (Jn. 17:11)

Then the great prayer asks blessings on all disciples through the centuries who believe in Christ on the testimony of those direct witnesses: "I ask not only on behalf of these, but also on behalf of those who will believe in me through their word, that they may be one. As you, Father, are in me and I am in you, may they also be in us, so that the world may believe that you have sent me. The glory you have given me I have given them, so that they may be one, I in them and you in me, that they may be completely one... ." (Jn. 17:20-23)

At the Mount of Olives, Jesus took the disciples to "a place called Gethsemane," where he told the disciples to wait while he prayed. He "began to be distressed and agitated." Then he took Peter, James and John apart and asked them in turn, to wait while he prayed. Jesus told them: "I am deeply grieved even to death." Going further, he said: "Abba, Father, for you all things are possible ; remove this cup from me; yet, not what I want but what you want." Three times, he returned to the three disciples only to find them asleep. (Matt. 26:36-45)He returned to prayer. Luke records that "an angel from heaven appeared to him and gave him strength. In his anguish he prayed more earnestly, and his sweat became like great drops of blood falling on the ground."

Finding the disciples "sleeping because of the grief," he woke them as Judas approached with the soldiers and with police from the chief priests. (Lk. 22:43-45) Judas identified Jesus with the betrayer's kiss. The soldiers approached to seize Jesus, and John alone identifies Peter as the disciple who had a sword and struck the "high priest's slave," cutting off his ear. Luke records that Jesus said "'no more of this!' and he touched his ear and healed him." (Lk. 22:51) Jesus instructed Peter to sheath his sword: "Put your sword back into its place; for all who take the sword will perish by the sword." He told the disciples that if he asked his Father, he would "at once send more than twelve legions of angels." But "would the scriptures be fulfilled, which say it must happen this way?" (Matt. 26:47-54). Tertullian, A second-century Christian leader in North Africa, concluded from this passage: "the Lord afterward in disarming Peter unbelted every soldier." "On Idolatry, " The Apology of Tertullian (American ed., Buffalo, 1886; reprint, Grand Rapids, Michigan: William B. Erdmans Publishing Co. ,1969)

Jesus was taken at night to the home of Caiaphas, the high priest, and the next morning before the assembly of the elders. When he was asked whether he claimed to be the Messiah, God's Son, Jesus responded, "you say that I am." (Lk. 23:70) From this they concluded he was worthy of death for blasphemy. Before Pilate, the leaders charged Jesus with treason in claiming to be "the King of the Jews." After faltering attempts to release Jesus and being unsuccessful in sending him to Herod to deal with the matter, yet finding no fault with him, Pilate washed his hands of the matter, literally, and turned Jesus over to be crucified. Then, followed a flogging from the soldiers, Jesus was taken to be crucified.

Luke reports that Simon of Cyrene was seized and forced to carry Jesus' cross to a place called The Skull.

There, Jesus was crucified between two thieves.

He uttered several words from the cross: "Father, forgive them; for they do not know what they are doing..." (Lk. 23:34) This statement of forgiveness, made precisely at the moment of death, allowed the memetic compulsion of reciprocal violence to be broken. Had Jesus, instead, railed at his executioners; or even defended the injustice of his death, at this particular point, the profound impact of the crucifixion—the atonement— would have been obscured. The first Christian martyr, Stephen, would do precisely the same thing, with Saul listening : "Lord, do not hold this sin against them." (Acts 7:60)

A dialogue between the thieves led one to exclaim, "Jesus, remember me when you come into your Kingdom." To which Jesus replied, "today you will be with me in Paradise." (Lk. 23:42-43) John reports that Mary, Jesus' mother, his mother's sister, and Mary Magdalene were standing near the cross, with "the disciple whom Jesus loved." Jesus said to his mother, "Woman, here is your son," indicating John. And to John he said, "here is your mother. And from that hour the disciple took her into his own home." (Jn. 19: 25-27) Jesus said, "I am thirsty," and received a sponge full of sour wine on a hyssop branch. (Jn. 19: 28-29) The synoptic gospels record Jesus crying with a loud voice, "Eli, Eli lema sabachthani?" Which is, "My God, my God, why have you forsaken me?" (Matt. 27:46) He then said, "It is finished." (Jn. 19:30) "Then Jesus, crying with a loud voice, said, 'Father, into your hands I commend my spirit.'" (Lk. 23:46) Then Jesus died.

Luke records immediately thereafter a seemingly incidental occurrence that is in reality of profound significance: "when the centurion saw what had taken place, he praised God and said, 'certainly this man was innocent.'" (Lk. 23:47)

As Rene Girard and Gil Bailee have observed, the initiation of sacred violence to organize society around the death of a victim was at the center of antique religion. By his teachings, and by the teachings of prophets before him, Jesus rejected this. When the centurion walked away convinced that Jesus was an innocent man, for him a least, the memetic effect of violence demanding more violence was snapped. (See, Gil Bailee, *Violence Unveiled*, New York: Crossroad, 1995) Jesus had taught that an eye for an eye, though fair in the sense of proportionality, was nonetheless violence imitating violence, in a deadly never-ending cycle, and had to be stopped by absorbing violence in a non-violent response. Now the memetic addiction had to be ended with an act of self-sacrifice. This demon must finally be exorcized by the refusal of Jesus to perpetuate violence. His obvious purity did not allow successful projection. Hence the immunity of the centurion to the memetic compulsion.

Now, Jesus lived and died in such a manner that his teachings against violence were incarnated. Amos attacked sacrificial offerings, never far from an earlier stench of human sacrifice:

I hate, I despise your festivals and I take no delight in your solemn assemblies. Even though you offer me your burnt offerings and grain offerings, I will not accept them; and the offerings of well-being of your fatted animals, I will not look upon. Take away from me the noise of your songs; I will not listen to the melody of your harps. But let justice roll down like waters, and righteousness like an ever-flowing stream.

Isaiah saw the same vision:

What to me is the multitude of your sacrifices? says the Lord; I have had enough of burnt offerings of rams and the fat of fed beasts; I do not delight in the blood of bulls, or of lambs, or of goats. When you come to appear before me, who asked this of your hand? Trample my courts no more; bringing offerings is futile; incense is an abomination to me ... your new moons and your appointed festivals my soul hates. ... When you stretch out your hands, I will hide my hands from you; even though you make many prayers, I will not listen; your hands are full of blood. Wash yourselves; make yourselves clean; remove the evil of your doings from before my eyes; cease to do evil, learn to do good; seek justice, rescue the oppressed, defend the orphan, plead for the widow. (Isa 1:11, 13, 15-17)

Bailee notes that in antique religion, the concept of sin could not be forgiven, or erased, but simply moved to another person, or people, or a non-human animal as scapegoat. Religious sacramental sacrifice, by limiting violence to a few, avoided the potential chaos of social frenzy, often sporadic but occasionally manifest in the form of mass slaughter. But with the profound realization of Paul, in particular, as one who had practiced sacrificial religion as a devout believer, and had been persecuting Christians in the belief that he was thereby serving both justice (the Law) and God, the implications of Jesus' crucifixion would be most powerfully perceived and transmitted. (See, the epistles of Paul to the Galatians and the Romans) Now, by Jesus' self-sacrifice, however paradoxical at first thought, the entire concept of sacrifice to appease a vengeful God, or even to right the scales of justice, was undercut at its root. God incarnate gives his life not to appease his Father.

Rather, God gives his life to end the capacity of the community any longer to restore social order by taking the life of the sacrificial victim, human or otherwise. Instead, the "new" law of self-sacrificial love, taught by Jesus in the Sermon on the Mount (with obvious parallel to Moses, Sinai and the reception of the Law), and now incarnated by Jesus in the crucifixion, would begin millennia of deconstruction of the efficacy of violence to maintain social order or cohesion. In this sense, one vital aspect of what remains the ultimate mystery of the Christian faith, is that Jesus presents himself as a sacrifice to reconcile humanity with themselves, before they present themselves at the altar, now the eucharistic table, for reconciliation with God. Now, humanity would be challenged ever after to replace law and violence with a far more demanding commandment of love; and the forgiveness, the very obliteration, of offense and sin.

As through Abraham, Jehovah moved ancient religion up from human sacrifice, or mass slaughter of blood feud, to a sacramental surrogate, a ram in the thicket, now Jesus, through renunciation of violence moved the disciples from the "violence of their justice." (See Bailee, pp. 185-200; quoting Van Beek) As Bailee notes, Jesus' public execution consummated his public ministry and "launched the Christian movement." (p.217)

Then came the empty tomb. Joseph of Arimathea, a disciple of Jesus, obtained Pilate's permission to take the body of Jesus. Joseph wrapped the body in "a clean linen cloth," placed the body in "his own new tomb," and "rolled a great stone to the door of the tomb." (Matt. 27:57-60) John's gospel records that Nicodemus, the reluctant inquirer who had "approached Jesus by night" to ask about the Kingdom of God, now brought a hundred pounds of myrrh and aloes to prepare the body for burial. (Jn. 19:39)

On Sunday, after the Sabbath, at early morning, Mary Magdalene and "the other Mary" went to the tomb.

And suddenly there was a great earthquake; for an angel of the Lord, descending from heaven, came and rolled back the stone and sat on it. His appearance was like lightning, and his clothing white as snow. For fear of him the guards shook and became like dead men. But the angel said to the women, 'Do not be afraid; I know that you are looking for Jesus who was crucified. He is not here; for he has been raised, as he said: come, see the place where he lay. Then go quickly and tell his disciples. He has been raised from the dead, and indeed he is going ahead of you to Galilee; there you will see him.' (Matt. 28:1-7)

Matthew then records Jesus' meeting with the women, who "took hold of his feet, and worshiped him," before they ran with his message to the other disciples.

Luke says the women first found the stone rolled away from the tomb, and "did not find the body." Then, "while they were perplexed about this, suddenly two men in dazzling clothes stood beside them." The terrified women prostrated themselves before the emissaries, who said words that would echo through time: "Why do you look for the living among the dead? He is not here, but has risen." (Lk. 24:1-5)

John records another remembrance. Mary Magdalene came to the tomb on the first day of the week, "while it was still dark," and saw the stone removed from the entrance. She ran and told Peter and the other disciple, "the one whom Jesus loved (John), and said to them, 'they have taken the Lord out of the tomb, and we do not know where they have laid him.'" Peter and "the other disciple" ran to the tomb and Peter,

characteristically, burst in as the other disciple peered inside. "He saw the linen wrappings lying there, and the cloth that had been on Jesus' head, not lying with the wrappings but rolled up in a place by itself." The "other disciple" then went in "and he saw and believed; for as yet they did not understand the scripture, that he must rise from the dead." (Jn. 20:1-10)

After the two men had returned to their homes, Mary stood weeping "outside the tomb. As she wept, she bent over to look into the tomb; and she saw two angels in white, sitting where the body of Jesus had been lying, one at the head and the other at the feet." They asked why she wept. She said that the body of Jesus had been taken and she didn't know "where they have laid him." Then she turned and saw Jesus, but supposed him to be the gardener: "Sir, if you have carried him away, tell me where ... and I will take him away." Jesus said, "Mary!" Mary exclaimed, "Rabbouni!" (which means Teacher). Jesus said to her, "Do not hold on to me, because I have not yet ascended to my Father. But go to my brothers and say to them, 'I am ascending to my Father and your Father, to my God and your God.'" (Jn. 20:11-17)

John then records others of many appearances of Jesus to the disciples during the forty days of his post-resurrection ministry. He appears to the disciples, with Thomas absent, in a locked room, saying, "peace be with you!" He showed them his hands and feet and again said "peace be with you. As the Father has sent me, so I send you."

Thomas, not previously present, but with the disciples a week later, witnessed a similar appearance of Jesus, who invited him to "put your finger here and see my hands. Reach out your hand and put it in my side. Do not doubt but believe." (Jn. 20:19-28)

The palpability of the resurrected Lord is sensually recorded by Luke in describing these appearances.

While they were talking about this, Jesus himself stood among them, and said ... 'Peace be with you.' They were startled and terrified, and thought that they were seeing a ghost. He said to them, 'Why are you frightened, and why do doubts arise in your hearts? Look at my hands and my feet; see that it is I myself, touch me and see; for a ghost does not have flesh and bones as you see that I have.'

He then asked if they had anything to eat, and "they gave him a piece of broiled fish and he took it and ate in their presence." (Lk. 24:36-43)

He then told them that "‘everything written about me in the law of Moses, the prophets and the psalms must be fulfilled.’ Then he opened their minds to understand the scriptures, and he said to them, ‘Thus it is written, that the Messiah is to suffer and to rise from the dead on the third day, and that repentance and forgiveness of sins is to be proclaimed in his name to all nations....’" He walked with them as far as Bethany and, "lifting up his hands, he blessed them. While he was blessing them, he withdrew from them and was carried up into heaven." (Lk. 24:44-51)

John records appearances of Jesus to the disciples in Galilee, by the sea of Tiberias, where the disciples had gone fishing. Just after sunrise, Jesus stood on the beach and said, "children, you have no fish, have you?" He directed them where to place their nets, just as he had done before his death and resurrection. At first, the disciples did not recognize the risen Lord. They cast in their nets, and as before, caught so many fish that they could barely bring in the net. Then Peter recognized Jesus: "It is the Lord!" He clothed himself, having been fishing naked, and jumped into the sea, swimming toward Jesus. They built a charcoal fire and ate fish and bread. As before, he had told them that he would make them fishers of men, now three times he asked Peter if he loved the Lord. Each time Peter declared his love. Each time Jesus said, "feed my sheep." The last time, Jesus added: "when you were younger, you used to fasten your own belt and to go wherever you wished. But when you grow old, you will stretch out your hands, and someone else will fasten a belt around you and take you when you do not wish to go." John records that this was said to indicate Peter's later crucifixion.

The empty tomb deprived Christians of memetic violence: reciprocal vengeance inspired by the body of a victim of violence. The resurrection offered the transcendent power to break the memetic addictive power of violence to respond to violence and violence in return, throughout time.

Gandhi noted that only Christians could miss the meaning of the crucifixion and resurrection. Non-violence, and the "new law" of redemptive, healing love, finally empowered by the transcendent promise of eternal life, offered the one alternative to perpetual violence until humanity and creation are extinguished. The empty tomb and the resurrected Lord offer the way out of a never-ending spiral of violence. Crusades and inquisitions; "holy war" and "just war;" are thereby seen as oxymoronic. The empty tomb and the final Christian exclamation, "he is risen," remain the subversive solvent to institutional violence spawned by religion or by the nation-states, dissolving all legitimacy from both sacred violence of antique religion and its state-sanctioned secular equivalent.

After many appearances of Jesus, from the two on the road to Emmaus (Lk. 24:13-35) to appearances to over five hundred people, according to Paul, Jesus concluded his forty-day post-resurrection ministry with the same awesome approbation as he received from God at the beginning of his ministry. Luke continues his gospel story in the Acts of the Apostles. At the conclusion of Jesus' teachings to the disciples following his resurrection, he responded briefly to their questions as to the time and the manner when he would restore the Kingdom. And then, "when he had said this as they were watching, he was lifted up, and a cloud took him out of their sight. While he was going and they were gazing up toward heaven, suddenly two men in white robes stood by them. They said, 'Men of Galilee, why do you stand looking up toward heaven? This Jesus, who has been taken up from you into heaven, will come in the same way as you saw him go into heaven.'" (Acts 1:6-11)

The Church

Remember that you were at that time without Christ, being aliens from the commonwealth of Israel, and strangers to the covenant... . But now... you who once were far off have been brought near... . For he is our peace... . and has broken down the dividing wall between us... . that he might create in himself one new humanity... .

You are no longer strangers or aliens, but you are citizens with the saints and ... members of the household of God. Eph. 2:12-19

There is no longer Jew nor Greek, There is no longer slave nor free, there is no longer male nor female; for all of you are one in Christ Jesus. Gal. 3: 28

Each of the gospel writers, but particularly the author of John's gospel, recorded the incomprehension of the disciples of many of the acts and words of Jesus during his ministry. Their confusion, despair and bewilderment must have been nearly complete at his death and before the resurrection. They evinced some reflective understanding in the dialogue with Jesus and amongst themselves during Jesus' resurrection ministry. But there must have been some considerable confusion until, gradually, and then at one decisive moment—Pentecost— they received direction on their course of action without Jesus' physical presence. After his death and before their full understanding of the resurrection, the disciples simply returned to their fishing nets. Now, reflecting back upon their initial call to ministry from Jesus, they would be fishers of humankind.

The story of the growth of the church is and has been since the first century a movement ever outward and inward, with opening to new frontiers of gospel propagation; and reflective inwardness and repentance at huge corporate mistake, misunderstanding, and sin. Always, however, there are the words and ministry of Jesus to reflect upon anew, pondering how these teachings are to be applied in radically different times and circumstances. The Holy Spirit, promised by Jesus to the disciples to aid their remembrance of his words and actions; and to provide the piercing insight, the flash of light into their meaning in particular situations, was manifest throughout the growth of the church in the first century. And though largely beyond the scope

of this essay, that same promise extended to the disciples through every century that followed.

Clearly, the continuation of Luke's gospel in the Acts of the Apostles has this dual theme. First, the outward expansion of the church from Jerusalem and its environs; through the gradual and in a sense accidental, or more likely, the serendipitous introduction of the gospel message to gentiles, caused by the exodus of Jewish Christians to Antioch and other communities; to revelatory climactic movement toward gentile Christianity through Peter and overpoweringly, through Paul; to the good news spreading throughout the entire Mediterranean world. The second theme in this story—which existed most powerfully before, throughout the ministry of Jesus and before that surrounding his birth, was the manifestation in visions and dreams of the Spirit of God. Night dreams and palpable visions during consciousness in the light of day characterized this time. The whole story of the book of the Acts of the Apostles might just as well be entitled "the Acts of the Holy Spirit," as promised by Jesus before his death (revealed with such eloquence in John's gospel, chapters 14-16).

We would err if we attempted to dismiss the miraculous, the transcendent, from Jesus' birth and ministry; or from the foundation and the continuation of the church. Jesus did not simply present himself as another teacher of lofty moral principles, but as God's son.

We might also err if we mistook every dream or psychic event we experience as our being touched by God. Peter said that these matters are not to be understood with finality by private interpretation. A neurotic experience is not a spiritual event, though the relation between the two is not necessarily simple. Existing biblical text, the tradition of the church, pastoral spiritual guidance, our own traditional norms and moral conduct; and rationality-- God-given no less than the gift of our spiritual senses; all are anchor-points of check. Jeremiah said:

Am I a God nearby, says the Lord, and not a God far off? Who can hide in secret places so that I cannot see them? Says the Lord. Do I not fill heaven and earth? Says the Lord. I have heard what the prophets have said who prophesy lies in my name, saying, "I have dreamed, I have dreamed!" How long? Will the hearts of the prophets ever turn back—those who prophesy lies, and who prophesy the deceit of their own heart? They plan to make my people forget my name by their dreams that they tell another, just as their ancestors forgot my name for Baal. Let the prophet who has a dream tell the dream, but let the one who has my word speak my word faithfully. What has straw in common with wheat? says the Lord. Is not my word like fire, says the Lord, and like a hammer that breaks a rock to pieces? (Jer. 23:23-29)

It would be too simple to say the church began after Jesus' ministry and ascension. Jesus ordained apostles. Other offices in a growing community existed during Jesus' mortal ministry. But the ascension of Jesus and the replacement of Judas with Matthias marked a particular point of self-conscious mission on the part of the disciples. The movement, the ministry would continue. (Acts 1:12-26)

Then came Pentecost. Jewish tradition said the Law was given seven weeks after Passover. On this day, Pentecost, "they were all together in one place." (Acts 2:1) Earlier, at the time of the selection of Matthias, Luke recorded that the disciples, including "certain women, including Mary the mother of Jesus, as well as his brothers," were meeting regularly, "devoting themselves to prayer." This group presumably were meeting in accordance with Jesus' instruction that they return to Jerusalem until they receive the Holy Spirit. Then, "suddenly from heaven there came a sound like the rush of a violent wind, and it filled the entire house where they were sitting. Divided tongues, as of fire, appeared among them, and a tongue rested on each of them. All of them were filled with the Holy Spirit and began to speak in other languages, as the Spirit gave them ability." (Acts 2:1-4)

Luke records that "devout Jews from every nation under heaven" were present at Pentecost and each person heard the disciples preach of Jesus in his or her own tongue. Peter took center stage. He quoted the prophet Joel:

In the last days it will be, God declares, that I will pour out my spirit upon all flesh, and your sons and your daughters shall prophesy, and your young men shall see visions, and your old men shall dream dreams. Even upon my slaves, both men and women, in those days I will pour out my spirit.... And I will show portents in the heavens above and signs on the earth below. ... before the coming of the Lord's great and glorious day. (Acts 2:14-21)

Peter and the disciples thus began the ministry anew after the ascension of the Lord. The church grew by thousands. As the disciples were imprisoned, angelic emissaries freed them. Still, however, Christianity remained a sect within Judaism. All Christians at this time were Jews. This did not seem paradoxical. In fact, the notion that one could be Christian and not a Jew would have been incomprehensible. The apostles then and until they died remained observant Jews. While some would have been expelled from synagogue, that wrenching schism, institutionally, remained in the future. Luke records that "the word of God continued to spread; the number of the disciples increased greatly in Jerusalem, and a great many of the priests became obedient to the faith." (Acts 6:7)

Steps toward the radical phenomenon of gentile Christianity, however, were occurring. Stephen, a disciple "full of grace and power, did great wonders and signs among the people." (Acts 6:8) Fearing his power, certain of a particular synagogue plotted his death. Before a large congregation, Stephen preached a powerful sermon, tracing prophetic history from Abraham and Moses through the prophets as culminating in Jesus as Messiah. Throughout his speech, Stephen demonstrates that God reveals himself outside Palestine. And like Isaiah and Jeremiah, Stephen emphasizes that the real fruit of the law is reflected in a broken heart and worship is not confined to an earthly temple. Certain of the crowd, enraged, seized him to stone him to death. As they did so, they laid their coats before a zealous Pharisee named Saul, who must have heard Stephen's witness, and now served as witness to his death. Luke records Stephen's words just before his death. "I see the heavens opened and the Son of Man standing on the right hand of God!" (Acts 6:54) Then, as his Lord before him, Stephen said, "Lord Jesus, receive my spirit... Do not hold this sin against them." Then Luke says: "And Saul approved of their killing him." (Acts 6:59-60; 8:1)

This began a persecution of Jewish Christians such that many fled Jerusalem. Some were "scattered throughout the countryside of Judea and Samaria." (Acts 8:1) Philip "went to the city of Samaria and proclaimed the Messiah to them." (Acts 8:4) Jesus had preached briefly to the Samaritans. Evangelizing these people, not exactly Jew and not precisely gentile, represented a partial step toward gentile Christianity; or at least movement beyond what had been. Large numbers of Samaritans, believing Philip, "were baptized, both men and women." (Acts 8:9-12)

This movement beyond Jewish Christian orthodoxy was sufficiently surprising to church leadership that when the apostles in Jerusalem, "heard that Samaria had accepted the word of God, they sent Peter and John . . ." The two apostles prayed for those newly baptized Samaritan Christians, that they might receive the Holy Spirit. They then laid hands on them "and they received the Holy Spirit." (Acts 8:14-17) As Peter and John returned to Jerusalem, they "proclaimed the good news to many of the villages of the Samaritans." (Acts 8:25) The meaning of Jesus' parable of the Good Samaritan, and the answer to the question, "who is my neighbor" was inexorably expanding.

Then "an angel of the Lord" told Philip to "go toward the south," to the road from Jerusalem to Gaza. There, he met "an Ethiopian eunuch, a court official of Candace, queen of the Ethiopians, in charge of her entire treasury." (Acts 8:26-27) "Ethiopians" were Nubians living between Aswan and Khartoum in upper Egypt; not Abyssinians. He had come to Jerusalem to worship, and was seated in his chariot, reading aloud from the prophet Isaiah. The Spirit told Philip to go over to the chariot and listen. (Reading aloud was the common practice. Augustine was surprised to learn that Ambrose read silently: "when he was reading his eye glided over the pages and his heart searched out the sense, but his voice and tongue were at rest." Confessions, VI:3) Philip asked, "do you understand what you are reading?" The eunuch replied that he needed a guide. He invited Philip into the chariot. The passage from Isaiah said:

Like a sheep he was led to the slaughter, and like a lamb silent before his shearer, so he does not open his

mouth. In his humiliation justice was denied him. Who can describe his generation? For his life is taken away from the earth. (Acts 8:29-33)

Philip interpreted this passage as a prophecy of Jesus as Messiah and "proclaimed" to the eunuch "the good news about Jesus." As they continued traveling together in the chariot, the Ethiopian said, "look, here is water! What is to prevent me from being baptized?" The Ethiopian commanded the chariot to stop, and "both of them, Philip and the eunuch, went down into the water, and Philip baptized him." Then, when they emerged from the waters, "the Spirit of the Lord snatched Philip away, the eunuch saw him no more, and went on his way rejoicing." Philip "found himself at Azotus, and as he was passing through the region, he proclaimed the good news to all the towns until he came to Caesarea." (Acts 8:36-40)

The stage was now set for what the Christian would consider the most momentous event other than the birth, ministry, death and resurrection of Jesus Christ. The conversion of Saul. Luke records that, "Saul, still breathing threats and murder against the disciples of the Lord," had sought letters from the high priest to the synagogues at Damascus, so that "if he found any who belonged to the Way, men or women, he might bring them to Jerusalem." (Acts 9:1-2) "Christians" were not yet called by that term, and would not be, according to Luke, until the advent of gentile Christianity, first at Antioch. (Acts 11:26) The disciples of Jesus, as this time, were simply called followers of the Way: no doubt referring to Jesus' response to Thomas, who asked Jesus, who had told them he would soon leave them to go to the Father, how they would know the way to reach the Father when the Lord left them: "I am the way, the truth, and the life." (Jn. 14:5-6)

As Saul continued on the road to Damascus in pursuit of followers of the Way, "suddenly a light from heaven flashed around him. He fell to the ground and heard a voice saying to him, 'Saul, Saul, why do you persecute me?'" (Acts 9:3-4) (This, incidentally, is the first time that Jesus would identify persecution of the church with persecution of himself.) Saul responded, "'who are you, Lord?'" The reply came, "I am Jesus, whom you are persecuting. But get up and enter the city, and you will be told what you are to do."

Luke records at this point, "the men who were traveling with him stood speechless because they heard the voice but saw no one." (Acts 9:7) Later in Acts, however, as Paul again relates his vision of conversion, Luke records the opposite: "Now those who were with me saw the light but did not hear the voice of the one who was speaking to me." (Acts 22:9)

Saul was blinded by the light of the vision and had to be taken by the hand into Damascus, where he remained for three days without anything to eat or drink. (Acts 9:8-9)

In Damascus, a disciple named Ananias had a vision from the Lord: "go to the street called Straight, and at the house of Judas look for a man of Tarsus named Saul. At this moment he is praying, and he has seen in a vision a man named Ananias come in and lay his hands on him so that he might regain his sight." (Acts 9:10-12) Ananias had heard of Saul, "how much evil he has done to your saints in Jerusalem." But the Lord said, "'Go, for he is an instrument whom I have chosen to bring my name before Gentiles and kings and before the people of Israel; I myself will show him how much he must suffer for the sake of my name.'" (Acts 9:13-16)

Ananias did as directed. He entered the house of Judas and approached Saul, laying his hands on him, and said: "Brother Saul, the Lord Jesus, who appeared to you on your way here, has sent me so that you may regain your sight and be filled with the Holy Spirit." Instantly "something like scales fell from his eyes, and his sight was restored." He was baptized immediately and took food for the first time since the vision. (Acts 9:17-19)

In his epistle to the Galatians, Paul asserts the autonomy of his call as apostle directly through Christ: "When that happened, without consulting any human being, without going up to Jerusalem to see those who were apostles before me, I went at once to Arabia, and afterwards returned to Damascus." (Gal. 1:17; The New English Bible, Oxford: Oxford U. Press, 1970)

After his return from Arabia, Paul began, "to proclaim Jesus in the synagogues" of Damascus. Plots to kill Saul led to his return to Jerusalem, where he sought audience with church leaders, who refused out of fear of him, until Barnabas, later to be one of his companions on the epochal missionary journeys throughout the Mediterranean world, intervened on his behalf. But in Jerusalem too, the radical conversion from being the leading persecutor of the disciples to their most powerful voice, led to death threats. Saul was then sent to his home city, Tarsus.

Meanwhile, Peter visited the saints at Lydda and while there, was called to Joppa to comfort church members who had suffered the death of a disciple named Tabitha, a woman "devoted to good works and acts of charity." Peter went to the upper room where her body had been washed for burial. Mourners surrounded her bed. Peter asked them all to leave and kneeling by her body, said: "Tabitha, get up." She rose and "many believed on the Lord." (Acts 9:32-42) Peter remained at Joppa, residing with "a certain Simon, a tanner." (Acts 9:43)

In Caesarea, a gentile named Cornelius, "a centurion of the Italian cohort," a "devout man who feared God with all his household," who "gave alms generously" and "prayed constantly to God," had a vision. "One afternoon at about three o'clock," he "clearly saw an angel of God." The angel said, "Cornelius." Cornelius stared at him in fear and responded, "what is it, Lord?" The angel said, "your prayers and your alms have ascended as a memorial before God. Now send men to Joppa for a certain Simon who is called Peter; he is lodging with Simon, a tanner, whose house is by the seaside." The angel left and Cornelius sent two of his slaves and "a devout soldier from the ranks" to Joppa, "after telling them everything." (Acts 10:1-8)

At Joppa, "about noon the next day," Peter "went up on the roof to pray." He was hungry, and while waiting for his meal, he "fell into a trance. He saw the heaven opened and something like a large sheet coming down, being lowered to the ground by its four corners. In it were all kinds of four-footed creatures and reptiles and birds...." All were forbidden from consumption by the Law. Then Peter heard a voice: "Get up, Peter; kill and eat." Peter responded, "By no means, Lord; for I have never eaten anything that is profane or unclean. The voice said to him again a second time, 'What God has made clean, you must not call profane.'" Three times the vision was repeated, and "the thing was suddenly taken up to heaven." (Acts 10:9-16)

Peter was puzzled by the vision and had no comprehension of its meaning. Then the men sent by Cornelius appeared, asking for Simon's house as they stood before his gate, inquiring about Peter. Peter, still pondering the vision, then had another. "The Spirit said to him, 'Look, three men are searching for you.'" He was instructed simply to go with them and was told no more. Peter approached the men and told them he was the man they sought. They told him of Cornelius' vision: that he was "directed by an angel" to invite Peter to his house and "hear what you have to say." (Acts 10:17-22)

Cornelius, in anticipation of Peter's visit, called together his friends and family. When Peter arrived, Cornelius fell at his feet. But Peter said, "stand up; I am only a mortal." When Peter saw the gentile assembly, he began to associate this event with his own vision, but only to the level of allowing social intercourse with gentiles. He said, "you yourselves know that it is unlawful for a Jew to associate with or to visit a gentile; but God has shown me that I should not call anyone profane or unclean..... Now may I ask why you sent for me?" (Acts 10:23-29)

To the reader of our own time, it seems incredible that Peter did not yet perceive the relationship between his dream, Cornelius' vision, and Peter's apostolic calling to preach the gospel to the world. But to the followers of Jesus to this time, it would be incomprehensible to presume gentile membership in a community of Jews who believed in Jesus as the Jewish Messiah. Even crossing this threshold of social interaction violated the Law.

Cornelius then related his own vision from "a man in dazzling clothes" who directed him to Peter. Peter then perceived the truth. "I truly understand that God shows no partiality, but in every nation anyone who

fears him, and does what is right is acceptable to him." He then told the gathering the story of Jesus: his ministry, his death, and his resurrection as the "one ordained by God as judge of the living and the dead."

Then, "while Peter was still speaking, the Holy Spirit fell upon all who heard the word. The circumcised believers who had come with Peter were astounded that the gift of the Holy Spirit had been poured out even on the Gentiles, for they heard them speaking in tongues and extolling God."

Peter reacted: "Can anyone withhold the water for baptizing these people who have received the Holy Spirit just as we have?" Then he ordered their baptism, "in the name of Jesus Christ." (Acts 10:30-48)

At Jerusalem, the apostles and other believers heard that gentiles had heard and accepted the word of God. They criticized Peter: "why did you go to uncircumcised men and eat with them?" Peter explained, "step by step," his vision and that of Cornelius: "And I remembered the word of the Lord, how he had said, 'John baptized with water, but you will be baptized with the Holy Spirit.' If then God gave them the same gift that he gave us when we believed in the Lord Jesus Christ, who was I that I could hinder God?" Luke records that, "when they heard this, they were silenced. And they praised God, saying, 'Then God has given even the Gentiles the repentance that leads to life.'" (Acts 11:1-18)

At about the same time, with no investigation, authorization or even knowledge of the apostles and disciples at Jerusalem, Jewish Christians who had left Jerusalem after the persecution that followed the stoning of Stephen, the first martyr of the faith, had begun telling gentiles ("Hellenists") the story of Jesus. Luke records that while most of the Jewish Christians leaving Jerusalem were careful to talk only of Jesus to other Jews, they were scattered as far as Phoenicia, Cyprus, and Antioch. And at Antioch, "some men of Cyprus and Cyrene" spoke to the Hellenists about Jesus; and "the hand of the Lord was with them, and a great number became believers and turned to the Lord."

When church leaders at Jerusalem heard of this unexpected phenomenon, they sent Barnabas to Antioch to investigate. Barnabas found a great number of believers among the gentiles. He found their faith to be as real as his own, and went to Tarsus to seek out Saul, who joined him in a year's ministry in Antioch. The two "taught a great many people, and it was in Antioch that the disciples were first called "Christians." Antioch was the capitol of the Roman province of Syria. A new name had come into being to accommodate gentile Christianity. (Acts 11:19-26)

From this point, the Acts of the Apostles becomes the story of Paul, formerly Saul, the greatest missionary the Christian world has ever known. He carried his witness from Jerusalem, Damascus, and Antioch throughout the Roman province of Asia (Asia Minor), into Europe, first at Philippi and then to Corinth and Athens; and finally to Rome. On the way, through his epistles, he shaped the Christian message to be comprehensible to the Mediterranean world. Gentile Christianity was born, guided by the Spirit, with Paul as mid-wife. Perhaps most important of all, Paul presents a method of gospel adoption for alien cultures, different circumstances of time and place, that remains the paradigmatic vision for allowing the message of Jesus Christ to be heard, understood, and to be effective and affective across boundaries of space and time. In this way, the alien--whether so classified by religion, race, color, nationality, locality and gender; or by birth in the first, seventh, fifteenth or twenty-third century— was invited to become a fellow-citizen with the saints in the household of God. Paul saw his Lord, the Son of Man, the Human Being, and as the paradigmatic New Man, inviting all life to embrace the Way, with no concept of alienage. Ever moving outward, as one concentric circle became too confining and had to give way, to the next, the next, and the next.

The New Jerusalem Bible translates this portion of Paul's epistle-general to the gentile communities around Ephesus:

Do not forget, I say, that you were at that time separate from Christ and excluded from membership with Israel, aliens with no part in the covenants of the Promise, limited to this world, without hope and without God. But now in Christ Jesus, you that used to be so far all have been brought close, by the blood of Christ.

For he is the peace between us, and has made the two into one entity and broken down the barrier which used to keep them apart, by destroying in his own person the hostility.... His purpose was, by restoring peace, to create a single New Man....

So you are no longer aliens or foreign visitors; you are fellow-citizens with the holy people of God and part of God's household. (New Jerusalem Bible, Eph. 2:11-20)

Following the epochal visions of Peter and Paul, the great missionary journeys that would convert the world began at Antioch, the home, in a sense, of spontaneous gentile Christianity. The "Holy Spirit said, 'set apart for me Barnabas and Saul for the work to which I have called them.'" (Acts 13:1-2) This powerful pair first "proclaimed the word of God in the synagogues of the Jews." (Acts 13:5) As we examine the ultimate explosion of gentile Christianity, it must be remembered that Jewish Christianity met with great success. All of the founding mothers and fathers of the first decades of Christianity were Jewish Christians; and, until later times, felt no tension, no requirement of "either-or" in such affiliation; but rather saw fulfillment of covenantal promise. When synagogue and church finally parted, Jewish tradition and scripture remained and still remains at the center of Christian worship.

At Antioch in Pisidia a decisive moment, however, occurred. While Paul, Barnabas, Mark, and Luke and other companions of Paul would thereafter still preach in the synagogue, and convert many believing Jews, a definitive change of course occurred. Threats in Pisidian Antioch finally drove Paul and Barnabas from the city. Before leaving, Paul and Barnabas declared:

It was necessary that the word of God should be spoken first to you. Since you reject it ... we are now turning to the Gentiles. For so the Lord has commanded us, saying, 'I have set you to be a light for the Gentiles, so that you may bring salvation to the ends of the earth.' (Acts 13:46-47)

At the completion of this first of three missionary journeys, Paul and his companions returned to Syrian Antioch.

The first missionary journey of Paul and Barnabas had been enormously successful, so much that a crisis was fomented in the infant church. The visions of Peter and Cornelius, and Cornelius' reception of the Holy Ghost, had been perceived, most likely, as a singular, possibly unique, phenomenon. Baptism could not be denied since God had granted baptism of the Holy Spirit. But affirmative action toward gentile membership was another matter. And if gentiles joined the church, what of the requirements of the Jewish Law, which all Jewish Christians, including the apostles at Jerusalem and Paul, had kept as a part of their Jewish-Christian heritage.

Now, another paradigmatic contribution of Paul—with the support of James, the brother of the Lord, and Peter—occurred. If the concentric circles of Christianity are to be pushed ever-outward—across, over, and through walls of separation—how does the church maintain the purity of the gospel's core, the critical mass without intentional or unintentional debasement in an effort to accommodate sociological difference?

Every group of believers must be allowed to inculcate universal gospel principles by use of the tribal, ethnic, racial, or even gender-driven traditions and metaphors of their group. Otherwise, the universal message becomes watery, vapid; so ethereal as to lack potency; not possessed of the palpable, pungent, sensual vitality of life.

Similarly, the exporters of such a universal message must first shear off from the "good news" their own social accretions that, however empowering and life-giving for their own tribe, would be foreign and indigestible for the receiving culture.

To accomplish both ends of this paradox--both the sending and the receiving side--somehow without losing the vital core of the life-giving message, is the challenge now faced by Paul and Barnabas, and by James and Peter. It is also the challenge that reverberates through the centuries in order that Christianity remain to

every people in every age the good news of eternal life. Precisely what is gospel core, and what is sociological superstructure?

Paul and Barnabas left Antioch for Jerusalem to report on the phenomenon of mass gentile Christianity. There the problem of a Christian message born in a Jewish culture was faced. Its particular form was the issue of circumcision and, by implication, the entire Jewish law of ritual cleanliness, diet, and communion with gentiles. What part of Jewish law would be demanded of the new gentile convert?

Echoes of Jesus' parable of the Good Shepherd may have reverberated through this first church council at Jerusalem. Was the Law the gate into Christianity? Jesus had declared himself to be the gate into the sheepfold. What did this mean? He had also said that he did not come to destroy but to fulfill the Law.

Peter, Paul and Barnabas, and finally and, seemingly decisively, James, the "brother of the Lord," addressed the community. The story of the conversion of the gentiles in huge numbers was related. The Holy Spirit had come upon them. Finally, James replied: "I have reached the decision that we should not trouble these Gentiles who are turning to God...." (Acts 15:1-19)

Then the entire congregation, including the apostles and elders, in common consent authorized a letter, in a sense the first general epistle of the church, to be taken by Paul and Barnabas, to Antioch and beyond:

The brothers, both the apostles and the elders, to the believers of Gentile origin in Antioch and Syria, and Cilicia, greetings. Since we have heard that certain persons have gone out from us, though with no instructions from us, have said things to disturb you and unsettle your minds; we have decided unanimously to choose representatives...., our beloved Barnabas and Paul, who have risked their lives for the sake of our Lord Jesus Christ.... For it seemed good to the Holy Spirit and to us to impose on you no further burden than these essentials.... (Acts 15:22-28)

Working out this solution, in practice, would constitute the remaining ministry of Paul. Both by his own choice, and under arrest or fleeing from plots on his life, he carried the gospel of his Lord before kings and jailers, in prison and palace; throughout Asia Minor and Europe. Often he preached by design in the major commercial centers of the Roman Empire. Christianity spread throughout the Mediterranean world. Finally in Rome he bore witness, writing epistles from jail or house arrest; until he was beheaded, as was his right as a Roman citizen rather than face crucifixion, outside the walls of Rome.

His testament continues.

Wherefore the law was our schoolmaster to bring us unto Christ, that we might be justified by faith.

But after that faith is come, we are no longer under a schoolmaster.... There is neither Jew nor Greek, there is neither bond nor free; there is neither male nor female: for ye are all one in Christ Jesus. (King James, Gal. 3:24-28)

For just as the body is one and has many members, all the members of the body, though many, are one body, so it is with Christ. For in this one Spirit we have all been baptized into one body—Jews and Greeks, slaves or free—we were all made to drink of one Spirit.

Indeed, the body does not consist of one member but many. If the foot would say, 'Because I am not a hand, I do not belong to the body,' that would not make it any less a part of the body. And, if the ear would say, 'because I am not an eye, I do not belong to the body,' that would not make it any less a part of the body. If the whole body were an eye, where would the hearing be?....Now you are the body of Christ and individually members of it. (1 Cor. 12:12-27)

Neither is the man without the woman, neither the woman without the man, in the Lord. (King James, 1 Cor. 11:11)

Witnesses

I believe in ecstasies that were never touched by sound, as in an invisible sanctuary of humanity; the documents of those that flow into words are before me.

-- Martin Buber, *Ecstatic Confessions*, p.7

I will go on to visions and revelations of the Lord. I know a person in Christ who fourteen years ago was caught up to the third heaven. Whether in the body or out of the body, I do not know: God knows. And I know that such a person— whether in the body or out of the body, I do not know: God knows--was caught up into Paradise and heard things that are not to be told, that no mortal is permitted to repeat.

-- St. Paul, *2 Cor. 12:1-4*

Do not neglect to show hospitality to strangers, for by doing that some have entertained angels without knowing it.

-- St. Paul, *Heb. 13:1*

We are surrounded by so great a cloud of witnesses.

-- St. Paul, *Heb. 12:1*

Matthew's gospel records Jesus' final admonition to the disciples. They were to "make disciples of all nations." (Matt. 29:19) He would be with them always, to the end of the world. And while his physical presence was no longer with them, he would send the Comforter, the Holy Spirit, who would testify of Jesus and guide the disciples into truth. Indeed, the Holy Spirit would be called the Spirit of Truth, who would dwell with them and be within them, the ground or center of being. (Jn. 14:15-17; 15:26; 16:12-14) He would convert the followers of Jesus. Through the Spirit of Truth, the conversions, often but not always seen in spectacular fashion, would continue through the centuries. Millions of people would experience a profound change of being. They would say, with Paul, that they were no longer their former selves, but that through Jesus they had changed fundamentally.

For some, the experience of repentance, a turning or return, would happen once with dramatic effect that would alter their course and their nature for the remainder of their lives. For others, the process seems to be gradual and more gentle, continuing in effect throughout their lives. In either case, such disciples accomplished, for them, the direction, the purpose of their being which would make clear their particular course, their vocation, mission, ministry.

The processes of conversion are various. As Jesus told Nicodemus, he must be "born again," this time of the Spirit. But that the wind blows where and, we might say how and when, it will. For many, however, a pattern emerges. The person experiences a profound malaise; and often a sense of his sinfulness and purposelessness. Physical and psychic trauma sometimes follow. Then, whether by dream, inner transformation or witness, or by a direct manifestation of angels or by Jesus, the recipient is shaken to his roots and transformed. For some, the experience is singular and lasts a lifetime. For others the ecstasy of the moment diminishes and may be repeated in some form, throughout a lifetime. Often a book, frequently the Bible; or another person, will have either a catalytic or more dramatic effect of midwifery in this second birth.

It is beyond the scope of this essay or this essayist to trace the institutional directions of the Christian church: through traditions of East and West; Orthodoxy, Catholicism, the Coptic tradition; Reformation and post-Reformation expansion, to the present. Rather, a few examples of Christian conversion are offered

from various centuries and traditions. Of course, the society of the time greatly colored the scenery of conversion. Reminding us of this fact, and the fact that conversion is not by any means a phenomenon singular to Christianity, is the statement of Ramakrishna (1833-1886), as recorded by his disciple, Vivekananda: "Many are the names of God, and infinite the forms that lead us to know him. In whatsoever name or form you desire to call him, in that very form and name you will see him." (as quoted in Martin Buber, *Ecstatic Confessions*, p. 16, San Francisco: Harper & Row, 1985; hereafter, Buber).

The early Jewish Christians were not shocked by the spectacular nature of some conversions, as this phenomenon existed throughout Israel's history. Whether by dream or by direct conversation with angels, or the Lord, the patriarchs and prophets had been called. Abraham, Isaac, Jacob; Moses; Amos, Jeremiah, Isaiah, Ezekiel.

Perhaps the greatest conversion in Christian history is that already recounted, the conversion of Paul. (See Acts 9:1-19; 22:1-21; 26:1-23) The conversion of Constantine arguably constitutes the next most epochal event in Christian history, leading directly to European "Christendom." Constantine (280-337), according to the early contemporary Christian historian Eusebius, while praying, saw "a cross of light" in the heavens, and an inscription, "conquer by this." The previously pagan Constantine was thereby converted in A.D. 312 and, following his defeat of Maxentius at Milvian Bridge, united the Empire and declared Christianity the official religion. (See W.H. Frend, *The Rise of Christianity*, pp. 473-515, Phila.: Fortress Press, 1984)

But far more intimate and compelling to later centuries is the story of the conversion of St. Augustine. (354-430, Bishop of Hippo, in North Africa) The first great spiritual autobiography in Western history, Augustine's *Confessions* has undoubtedly touched if not converted millions of Christians since.

With exquisite beauty, Augustine describes the final stages of his conversion, in Book VIII, chapters 5-12, of *The Confessions*. (page numbers are to *Confessions*, J.G. Pilkington, transl., London: The Folio Society, 1993) Augustine describes his lethargy to act on his growing conviction of the truth of Christianity; and that his flirtation with the Manichees and his licentiousness ("give me chastity, but not yet") must end. Yet he was in a stupor: "thus with the baggage of the world was I sweetly burdened, as one who sleeps. The thoughts wherein I meditated upon you were like the efforts of those who wish to rise but are still so heavy with sleep that they sink back into it again." (p. 134) "In a state of increasing anxiety I carried on in my accustomed ways, daily sighing unto you." (p. 135) He prayed that Jesus would "turn me toward myself, set me face to face with myself." (p. 137) He was "laid bare to myself." (p. 138)

Finally, "In the midst of this great strife of my inner dwelling, the tumult which I had raised against my own soul in the chamber of my heart, troubled both in mind and countenance," he seized his friend Alypius and repaired to a "small garden" by his lodging. (p. 138)

Still, his torment continued. "Thus was I sick and tormented twisting and turning in my chain till it might be utterly broken, for what held me now was so slight a thing! And you, Lord, forced upon me in the secret places of my soul. By a severe mercy you redoubled the lashes of fear and shame lest I should again give way...." (p. 142) Like Francis Thompson centuries later (1859-1907), in his poem, "The Hound of Heaven," Augustine poignantly described the unbearable pressure from God that he take the final step of absolute commitment to discipleship. Augustine prayed, "let it be now, let it be now." (p. 142)

"When profound reflection had, from the secret depths of my soul, drawn me and heaped together all my misery and set it before the sight of my heart, there arose a mighty storm in me, accompanied by as mighty a shower of tears. ..." (p. 144) He "stole away" from his friend Alypius since "solitude was better for the business of weeping," and "flung myself down ... under a certain fig tree." (p. 144) "The streams of my eyes flooded forth, an acceptable sacrifice to you." Repeatedly, he spoke: "O Lord how long? How long, Lord tomorrow? Why not now?" (p. 144) And, "suddenly I heard a voice from a nearby house, the voice of a boy or girl, 'take up and read; take up and read.' "So, restraining the torrent of tears, I rose up, interpreting this as nothing other than a command to me from heaven to open the book and read the first chapter I should light upon." (pp. 144-45) He returned to Alypius and picked up an epistle of Paul. "I

snatched it up," and "read the paragraph on which my eyes first fell:" ' not in rioting and drunkenness, not in chambering and wantonness, not in strife and envying; but put on you the Lord Jesus Christ, and make not provision for the flesh, to fulfill the lusts thereof.'" (Romans 13:13-14) "Instantly, ... it was as though a light of utter confidence flooded shining into my heart and all the shadows of doubt were chased away." (p. 145)

His friend, Alypius, was similarly converted at the same time, in reading another passage of Paul; "him that is weak in the faith, receive you." (Romans 14:1) Augustine went immediately to his devoutly Christian mother Monica, and told her that her prayer of many years for her son's conversion had been answered.

Augustine would yet receive great aid in his faith and ministry from his teacher and patron, Ambrose, bishop of Milan. His baptism would follow. He enjoyed an ecstatic experience with Monica in conversation just prior to her death. Yet from this moment on Augustine would continue his ministry as perhaps the greatest influence upon the direction of Christianity between the times of the ministries and St. Paul and St. Thomas Aquinas. (Aquinas experienced some profound ecstatic experience, but he left no record of it. Just prior to his death, he alluded to this experience and refused to finish his masterpiece, the *Summa Theologica*, saying that his vision affected him such that all such scholastic theology had become "straw.")

For the writer of this essay, the most influential witness of Christianity, after only Jesus and St. Paul, is without question Francis of Assisi. (1182-1226) All biographers, contemporary and thereafter, agree that Francis had an experience of conversion. Such an expression is obvious if not simple-minded, given the life of utter literal discipleship lived by this great saint, termed by one Pope, "the second Christ." But Francis did not record it. We are left to speculate. Was this event the dream at Spoleto, when in the age of knighthood, chivalry and romance, Francis is asked, "Francis, is it better to serve the Lord or the servant?" Or in the purgatorial prison at Perugia? Or the dreams and, say some, a personal visitation of Jesus in a cave opposite Mount Subasio? Or in dismounting from his horse to kiss the leper? Or in the little church of San Damiano, where Francis prayed before the alter where there hung a large Byzantine crucifix of Christ. Francis prayed, "Lord Jesus, what do you want me to do?" A voice, seeming to come from the crucifix, said, "Francis, go now and repair my church which, as you see, is falling down." (Murray Bodo, *Francis: The Journey and the Dream*, p. 21, St. Anthony Messenger Press, 1972)

Whether in one of these events, or another never recorded; or perhaps through the crucible of many experiences, Francis has most probably inspired more conversions than any other witness of Jesus Christ since St Paul. His life of service and literal interpretation of Christ's gospel made it apparent to his contemporaries and to millions in every generation thereafter that he was indeed a saint, a great soul. As patron saint of peace and environmental harmony he burst beyond any one Christian tradition and, indeed, is similarly honored in all religious traditions. His compassion for the poor protected him from allowing extremely literal interpretation of scripture to drive him into a fundamentalist narrowness, a brittle rejection of compassion. His transparent acceptance of all creation moved him, like and perhaps beyond Paul, to see the ever outward ripples of Jesus' life toward a creation spirituality, ending in a conception of the cosmic Christ. His Canticle of the Creatures saw the image of God in all living creatures, from the leper to the Wolf of Gubbeo. His refusal of the violent alternative undermined the militaristic feudal structure of his time. His devotion to Lady Poverty helped subvert the viciousness of class structure based on rank or wealth. His purity shamed a venal church into reform. His communion with the animal and plant kingdoms stopped barely short of pantheism. His recognition of "Brother Sun and Sister moon and stars" acknowledged the organic and singular nature of the earth and the entire Cosmos. And his final welcome to "sister death of the human body," testified to the immortality of the soul. His life was a daily story of continuing conversion outward and inward. (See Julien Green, *God's Fool, The life and Time of Francis of Assisi*, San Francisco: Harper and Row, 1985; and Johannes Jorgensen, *St. Francis of Assisi*, New York: Doubleday, 1955)

Ignatius of Loyola (1491-1556), founder of the Jesuits, had a vision in which he "saw our Lady with the holy child Jesus, at the sight of which he received most abundant consolation for a considerable interval of time." (As quoted in Hugh J. Kerr and John M. Mulder, *Conversions*, p. 18, Grand Rapids, Michigan:

William B. Erdmans, 1983; hereafter *Conversions*) His contemporaries noted that from this time he adopted a severe Christian discipline for his own life, founded the Jesuits, and had a huge influence upon Christian life. Ignatian spirituality today has led millions in all Christian traditions, and beyond, into a deepening of the inner life. The Jesuits in our time have led out in fostering ecumenical and inter-faith dialogue, and Christian scholarship.

Hildegard von Bingen (1099-1179) was a person of deep spirituality and possessed aesthetic gifts of the highest order. A Roman Catholic Religious and preeminent mystic, she composed chants, wrote voluminously of her own visions, and corresponded with a variety of people, including ecclesiastical leaders of her time. Her music has enjoyed current revival, in part by the recordings of The Anonymous Four, and her mystical writings are more widely read today than in any previous time.

In a letter, she alludes to a recurrent vision or experience, of flying through the heavens with God:

I stretch out my hands to God, so that I am borne by him like a feather, which has none of the heaviness of strength and which flies in the wind that carries it. ... From my childhood, since before I grew strong in bones and nerves and veins, I have constantly beheld this vision in my soul until the present time, when I am more than seventy years old. And my soul ascends in this vision, as God wills, to the height of the firmament and into the exchange of airs and extends itself to many different peoples who live far from me in different lands and spaces. And when I see this in such manner in my soul, I also perceive it according to the changes of the layers of clouds and other created things. Yet I do not hear it with the outward ears ... nor with any contributions of my sixth sense, but neither in my soul alone.... That light I see is not local; it is far, far brighter than the cloud that carries the sun... . And it is called by me the shadow of the living light In this light the images of the writings and the speech and the forces of many works of men shine forth to me. (quoted by Buber, pp. 43-44)

Among the German mystics of the thirteen and fourteen centuries, Buber quotes a vision by Sophia von Klingnau. After repeating a prayerful verse:

when I had said it, I saw that a light, beautiful and blissful beyond measure, was coming from heaven, and it surrounded me and shone through me and illuminated me entirely, and my heart was transformed all of a sudden and filled with an unspeakable and strange joy, so that I utterly and completely forgot all the misery and torment that I had ever known until this time. And in the light and in the joy, I saw and sensed that my God was taken up from my heart and sent through my mouth and high into the air, and that it was given over to see my soul clearly and particularly with spiritual vision, as I have never seen anything with physical eyes, and all its form and grace and beauty was shown to me fully. And what marvels I saw and recognized in it, all humans together could not put into words. (quoted by Buber, p. 83)

Lady Julian of Norwich, an English mystic, recorded the following vision in 1373.

Our good Lord spoke to me, most blessedly: 'Oh, how I love you!' as if he had said, 'My dearest, wait and behold your God, who is your maker and your endless joy. Behold your own brother, your Savior, wait and behold what delight and bliss I have in your salvation. And for my love rejoice with me. ... Oh, how I love you!... It is a high knowledge to see inwardly and to know that God, who is our creator, dwells in our soul. And it is a higher and more inner knowledge to see and to know that our soul ... dwells essentially in God. ... God is much closer to us than our own soul, for he is the ground in which our soul stands.... (as quoted in Buber, pp. 94-95)

Catherine of Siena (1347-1380) was one of the most prominent Christian mystics of the fourteenth century. One vision, recorded by her confessor, Raimund of Capua, occurred while she was ill and in bed. As he sat beside her, she seemed physically to take on the image of Christ. Later, as she was praying, "create in me a clean heart," and that a "right spirit" be revealed within her, Christ appeared and seemed physically to open her left side and remove her heart. This appeared so real that in confession she told her confessor that she,

in reality, possessed no heart. She was rebuked by her confessor but responded, "in truth, Father, as far as I can judge by bodily feeling, I think that I am indeed without a heart, for the Lord appeared to me, opened my left side, took out my heart and departed'..."

Later, while her brothers and sisters Religious had departed for Siena, she arose from sleep:

a light of heaven suddenly shone around her, and in the light the Lord appeared to her, bearing in his hands a reddish and shining human heart. And when, at the arrival of him who was the cause of the light, she sank trembling to the ground, the Lord approached her, opened her left side once more, placed inside her that heart which he bore in his hands, and said, 'See, beloved daughter, just as I took your heart from you.... , so I am now giving you my heart, with which you will live from now on.' (quoted by Buber, at 105-107)

Teresa of Avila (1515-1582), also known as St. Teresa of Jesus, was a Spanish mystic, a Carmelite, and a major figure in ecclesiastical reform. She experienced a lifetime of visions and described the "interior voices" she heard in her major devotional writing, *The Interior Castle*. Like many of those who have an ultimate ecstatic experience, she struggled for many years, in poor health and in adjustment to Carmelite practice, before she received the interior communications and the visions of God that affected her own life, and the life of the church, fundamentally. Hugh Kerr and John Mulder (*Conversions*) quote Teresa in describing her conversion. She described years of tumult. "By this time my soul was growing weary, and though it desired to rest, the miserable habits which now enslaved it would not allow it to do so." She became particularly drawn to a devotional image of Jesus in the house of her Order. She meditated as well on scenes from Jesus' life, particularly his agony in the Garden. She was drawn, she said, to the Magdalen and to St. Augustine, as both had been sinners before their conversion.

"My method of prayer was this. As I could not reason with my mind, I would try to make pictures of Christ, inwardly; and I used to think I felt better when I dwelt on those parts of his life when He was most often alone. This method of praying in which the mind makes no reflections means that the soul must either gain a great deal or lose itself—I mean by its attention going astray. If it advances, it goes a long way, because it is moved by love. But those who arrive thus far will do so only at great cost to themselves, save when the Lord is pleased to call them very speedily to the Prayer of Quiet, as He has called a few people whom I know." (*Conversions* p. 21-22)

St. Teresa then describes the climax of her conversion. She had received a copy of Augustine's *Confessions* and had read of his conversion in the garden.

"When I started to read the *Confessions*, I seemed to see myself in them and I began to commend myself to that glorious Saint. When I got as far as his conversion and read how he heard that voice in the garden, it seemed exactly as if the Lord was speaking in that way to me. ... I remained for a long time dissolved in tears, in great distress and affliction. Dear God, what a soul suffers, and what torments it endures when it loses its freedom to be its own master! I am astonished now that I was able to live in such a state of torment. God be praised, who gave me life to forsake such utter death!" (p. 23)

After this, her deepest spiritual experiences—her "inner voices," and "visions" and "abductions" began. She termed these "consolations and favors."

In a letter to her confessor, Father Rodrigo Alvarez, she describes such phenomena, as quoted by Buber (*Ecstatic Confessions*, p. 113-115):

"The difference between trance and abduction is that in trance the soul gradually dies to outward things, loses the senses and lives for God; abduction, on the other hand, sets in with a single recognition which God gives to the innermost part of the soul with such swiftness that it seems as if the soul's higher part were being snatched away; the soul imagines that this higher part is detaching itself from the body. And at the beginning she needs courage in order to throw herself into the arms of the Lord, so that he may lift her up whithersoever he will. For as long as God does not set the soul in the peace to which he wishes to raise

her—to raise her, I say, in order that she may apprehend lofty things—she must truly be resolved at first to die for him; for the poor soul does not know what is to come of this. ...

Spiritual flight is something which I do not know how to name and which arises from the inner ground of the soul. ... It seems to me as if soul and spirit must be one nature. Something like a fire that is to become great and has everything ready for burning, so the soul with her readiness for God resembles a fire: it ignites swiftly, throws out a flame, and blazes up, although the fire in its being is below and does not cease to be a fire by the flame's climbing upward. Thus it occurs to the soul, which so quickly brings forth something, and moreover something so precious, which ascends to the upper spheres and arrives where God will have it. It appears in truth like flight. I know no other more suitable comparison. I know only that one perceives spiritual flight very distinctly, and that one cannot prevent it. ... She sees herself as it were suspended between heaven and earth and does not know what to do with herself.

The ecstatic experience, in conversion or in the mystical description of the union with God, often includes what William James calls "revelations of new depths of truth." The writings of Jacob Boehme, St. John of the Cross, Julian of Norwich, Meister Eckhart, Catherine of Siena, Thomas Merton and countless others reveal this. James records this description of union with God by St. Teresa of Avila:

In the orison of union, the soul is fully awake as regards God, but wholly asleep as regards things of this world and in respect to herself. ... Thus does God, when he raises a soul to union with himself, suspend the natural action of her faculties. ... God establishes himself in the interior of this soul in such a way, that when she returns to herself, it is wholly impossible for her to doubt that she has been in God, and God in her. This truth of reunion is so strongly impressed on her that even though many years should pass without the condition returning, she can neither forget the favor she received, nor doubt of its reality. (William James, *The Varieties of Religious Experience*, pp.408-409, New York: Penguin Books, 1985; hereafter, James.)

From such union with God often comes expressions of deeper understandings of the interrelatedness of all creation: our common humanity; an organic, unitary nature of the Cosmos; an appreciation of the interrelation of all living things; and a profoundly literal belief in all creation reflecting the image of God.

As has been noted, the forms and metaphor of religious ecstasy are bound to be influenced by the matrix within which they occur. The nature of the society, the age or epoch, the beliefs and practices and the religious tradition of the recipient, and as William James notes in *The Varieties of Religious Experience*, the particular psychology of the individual, will all affect the particularities of conversion. John Calvin (1509-1564), reacting against "papal superstitions," will not respond to spiritual openings as would Teresa of Avila. He notes simply that "by a sudden conversion" God brought him into his life's vocation and out of the law. (Conversions, pp. 24-25)

Blaise Pascal (1623-1662), mathematician, physicist and Christian mystic, wrote one of the great works of spiritual reflection, *Pensées* (Franklin Center: Franklin Library, Penn., with an introduction by T.S. Eliot, 1979). In many ways, both his writing and his own record of his conversion are similar to a contemporary figure, Dag Hammarsköld (1905-1961), the late former Secretary-General of the United Nations, who wrote his spiritual reflections, *Markings* (New York: Alfred A. Knopf, with a forward by W.H. Auden, 1966). The actual events of the conversion of each are left fragmentary, seemingly intentionally obscure, one senses, out of a feeling of awe, even holiness, surrounding the experience. But in each great spiritual memoir one feels the psalm-like quality of the reflections. The fact of conversion is evident and radiates from the pages of their journals.

Pascal recorded flashes of perception in sentence-fragments, reflecting the power of his experience, dated "Monday, 23 of November," 1654: "God of Abraham, God of Isaac, God of Jacob, not the philosophers and scholars. ... God of Jesus Christ.... Righteous Father, the world hath not known thee, but I have known thee" (Jn. 17:25) "This is the eternal life, that they might know thee, the only true God, and the one whom thou has sent, Jesus Christ." (Jn. 17:3) "Let me never be separated from him." (Conversions, pp. 37-

38)

Hammarsköld wrote: "Before thee in humility, with thee in faith, in thee in peace." (Markings, p. 104) "If I take the wings of the morning and remain in the uttermost parts of the sea; even there also shall thy hand lead me." (Psalm 39:8, p. 102) "Not I but God in me." (p. 90) "To be free, to be able to stand up and leave everything behind—without looking back to say yes—.(p. 91) "So shall the world be created each morning—new—forgiven in Thee, by Thee." (p. 163)

Pascal experienced conversion in failing health, near death. Kerr and Mulder record the presumption of W.H. Auden that Hammarsköld's writings reflect a radical change between 1952 and 1953, when he was at the height of public recognition but privately despondent.

Again in rough parallel, the conversions of C.S. Lewis and John Henry Newman possess the characteristic of an intellectual pilgrimage culminating in spiritual and emotional assurance of arriving at the right place, followed by the complete devotion of the disciple; as different from the conversions of Augustine and Teresa of Avila as they were from the conversions of Baptist, Lutheran and Methodist converts, or the conversion stories of the American frontier. Newman, leader of the Oxford Movement, attempting to move the Church of England closer to first century Christianity, followed the centuries back until he found himself converted to Catholicism; Lewis, from agnostic master of classical literature, moved from myth to what he came to believe was the foundation story literally true: God made man in the incarnation of Jesus Christ. Lewis found his home in the Church of England. (See John Henry Newman, *Apologia Pro Vita Sua*, London: Longmans, 1895; and C.S. Lewis, *Surprised by Joy*, New York: Harcourt, Brace, 1955) For each, an intellectual and emotional journey culminated in a confirmation of their direction and vocation, with Jesus Christ as the central fact of their lives, the ground of their being.

For others, while differences in centuries and society colored their accounts, certain conditions often but not always existed: an awareness of sin and a feeling of purposeless, even if outward success hid that sensation; often there was a prolonged time of struggle, including physical and psychological or spiritual trauma; then, a gradual or often a suddenly shattering experience with the presence of Jesus; followed by a centeredness, a realization of direction, a commitment to vocation; and finally a sense of joy that did not remove difficulties or anguish, but somehow made them tolerable or even irrelevant.

Leo Tolstoy (1828-1910) had written *War & Peace* and *Anna Karenina* during the first half of a long life; had fathered thirteen children, was living the life of a Russian aristocrat and enjoyed world recognition as one of the great novelists; yet by fifty, he says, he considered suicide because of the purposelessness of his existence. William James records Tolstoy's reminiscence:

"I felt that something had broken within me on which my life had always rested. ... An invisible force impelled me to get rid of my existence... . It was an aspiration of my whole being to get out of life. ... All this took place at a time when so far as all my outer circumstances went, I ought to be completely happy." (James p. 153) "Yet, he says, "I could give no reasonable meaning to any actions of my life. ... why should I live? Why should I do anything? Is there in life any purpose which the inevitable death which awaits me does not undo and destroy?" (James, p. 154-55)

"During the whole course of this year (1879), ... I almost unceasingly kept asking myself how to end this business, whether by the rope or by the bullet... ." But, he says, "alongside of all those movements of my ideas and observations, my heart kept languishing with another pining emotion. I can call this by no other name than that of a thirst for God." (James, p. 155-56)

In this tumult of emotion, considering and considering again suicide, he remembered his earlier belief in God. Then, he says, "a voice seemed to cry within me, 'This is He, He without whom there is no life. To know God and to live are one. God is life. Live to seek God, and life will not be without God.' And stronger than ever rose up life within and around me, and the light that then shone never left me again." (as recorded in *Conversions* at 136)

Tolstoy's particular discipleship reflected a non-violence and simplicity of first-century Christianity, as he saw it; and he directly influenced Mahatma Gandhi and others who followed in that tradition.

Jacob Boehme (1575-1624), a Christian mystic, at age twenty-five, was surrounded by the divine light, and replenished with the heavenly knowledge; insomuch as going abroad into the fields to a green, at Gorlitz, he there sat down, and viewing the herbs and grass of the field, in his inward light he saw into their essences, use, and properties.... (James, p. 410)

Boehme recorded a later experience:

In one quarter of an hour I saw and knew more than if I had been many years together at an university. For I saw and knew the being of all things. The Byss and The Abyss, and the eternal generation of the holy Trinity, the descent and original of the world and of all creatures through the divine wisdom. I knew and saw in myself all the three worlds, the external and visible world being of a procreation or exterior birth from both the internal and spiritual worlds; and I saw and knew the whole working essence....(James, pp. 410-411)

George Fox (1624-1691) founded the Society of Friends, or Quakers. He, like Newman and many others, sought reform through an attempt to return to the simplicity of Christian life in its first century. He rejected a professional clergy, asserted a continuing revelation of Jesus to all believers, and in his own life and the lives of many who followed him, demonstrated a compassion for the poor and for social reform, as John Wesley would do a century later in Methodism.

Fox recorded a later vision similar in ontological scope to Jacob Boehm's:

I was come up to the state of Adam in which he was before he fell. The creation was opened to me and it was showed me, how all things had their names given to them, according to their nature and virtue. I was at a stand in my mind whether I should practice physic for the good of mankind, seeing the nature and virtues of the creatures were so opened to me by the Lord. (James, p. 411, note 2)

His conversion came in 1647. Before that time, he describes his disenchantment with the effect of corporate dynamics upon Christian morality and spirituality, as reflected, he thought, in the failure of institutional Christianity to live up to its professed spirituality and ethics. He says that on his own journey he: "walked abroad in solitary places many days, and often took my Bible, and sat in hollow trees and lonesome places... ." (James, p. 335) He left his father and mother and friends to travel throughout the country, searching for his truth. "I was a man of sorrows in the time of the first workings of the Lord in me." (James, p. 335)

After a considerable time in such melancholy searching, "when all my hopes in them (ministers and professors of religion) and in all men were gone so that I had nothing outwardly to help me, nor could tell what to do; then, oh then, I heard a voice which said, 'There is only even Jesus Christ, that can speak to thy condition.' When I heard it, my heart did leap for joy, then the Lord let me see why there was none upon the earth that could speak to my condition." (James, p. 336)

From this came Fox's "priesthood of all believers" and his teaching of the "Inner Light," which were open to all through conversion to Jesus Christ.

From that time with complete devotion Fox and the Quakers would perform a ministry to the poor and the marginalized of many nations.

John Bunyan (1628-1688) was a contemporary of George Fox. Both lived in an England torn by civil war between Puritans and Anglicans, supporters of Parliament and the monarchy. Bunyan, particularly, faced years of battling through his own sins, as he saw them. Out of this trauma within his own soul and in the

society in which he lived, would come a particular view of the Christian life as one of pilgrimage, memorialized in his allegorical autobiography, *Pilgrim's Progress*, which as Kerr and Mulder note, was the most read book in English, except the Bible, until the twentieth century. (Conversions, p. 48)

William James records Bunyan's state before his conversion:

Nay, thought I, now I grow worse and worse; now I am further from conversion than ever I was before. ... I found myself as on a miry bog that shook if I did but stir... . My original and inward pollution, that was my plague and my affliction. By reason of that, I was more loathsome in my own eyes than a toad; and I thought I was in God's eyes too. Sin and corruption, I said, would as naturally bubble out of my heart as water would bubble out of a fountain... Sure, thought I, I am forsaken of God; and thus I continued a long while, even for some years... . And now I was sorry that God had made me a man. (James, p. 157-158)

Bunyan's conversion seemed to extend over several years, and involved his perception of scripture and their applicability to him; until finally he received the confirmation that was a hallmark of his Baptist faith.

Kerr and Mulder report his reading a passage in Luke encouraging prayer. This he did, but felt tossed backward and forward in bouts of self-loathing for sin. Then, "a scripture fastened on my heart, 'O man, great is thy Faith.'" Yet, he said, he was not able to believe this of himself. He experienced continued inner tumult. Then, after a night pondering the atonement of Jesus, "at last when I was ... quite worn out with fear, ... these words did sound suddenly within my heart. 'He is able.'" Bunyan still pondered whether this statement applied to him. Next, after more days of what an earlier time and a different tradition might call "the dark night of the soul," Bunyan experienced another piece of his puzzle: "another piece of a sentence darted in upon me, 'My grace is sufficient.'" While elated momentarily, once again Bunyan questions why the sentence ended without that personal assurance he had sought before. Why did the sentence not conclude, "for thee?"

"Therefore I did still pray to God, that he would come in with his Scripture more fully on my heart... ." Finally, while he was in "a meeting of God's people, full of goodness and terror, ... those words did with great power suddenly break in upon me. 'My power is sufficient for thee, My grace is sufficient for thee,' three times together; and oh! Methought that every word was a mighty word unto me; as 'My,' and 'Grace,' and 'Sufficient,' and 'For thee. ...' (Conversions, pp. 50-52)

The final epiphany for Bunyan came as he still battled with doubt and human fallibility. "One day, while passing into the field ... suddenly this sentence fell upon my soul, 'Thy righteousness is in heaven.'" And Bunyan saw "Jesus Christ at God's right hand," like Stephen, the first Christian martyr. Now, John Bunyan's burden of sin dropped from him as "chains fall off my legs." He understood his own relationship to the atonement. He saw, again, Jesus on God's right hand, and understood "the mystery of the union with the Son of God, that I was joined with Him, and that I was flesh of his flesh and bone of his bone." (Conversions, pp. 52-53) "Now could I see myself in Heaven and Earth at once; in Heaven by my Christ, by my Head, by my Righteousness and Life, though on Earth by my body... ." (James, p. 187)

The conversion of John Wesley (1703-1791) had as great an impact upon the history of modern Christianity in the West, and upon compassionate social legislation in our society, as any similar event since the ministry of Martin Luther. The founder of Methodism, Wesley's ministry and that of his followers, set the direction of evangelical Christianity and propelled that portion of Christian ministry into the forefront of social reform.

Wesley recounted events in his life leading up to May 24, 1738 and his conversion, as taken from Kerr and Mulder. He described his early life as being intensely aware of God, but focused mainly upon external works. Gradually, he became aware of inwardness. He read Kempis's *Christian Patterns*. Increasingly he saw the Christian religion as "seated in the heart." He began a regular spiritual practice of daily meditation, silent prayer, and frequent communion. Increasingly, "the light flowed in so mightily upon my soul, that everything appeared to be a new view."

In 1730, he began visiting the prisons and assisting the poor and those who were ill. His own spiritual practice was increasingly "directed toward inward holiness." A Moravian brother emphasized the need of interior spirituality, as important in discipleship as Wesley's work among the poor and those in prison.

On Wednesday May 24, 1738, Wesley opened his bible to a passage from Peter's second epistle: "There are given unto us exceeding great and precious promises, even that ye should be partakers of the divine nature." (2 Peter 1:4) Then he turned to the words "thou are not far from the kingdom of God." An anthem at St. Paul's impressed him: "Out of the deep have I called unto thee, O Lord... . He shall redeem Israel from all his sins." At a later meeting he read Luther's preface to St. Paul's epistle to the Romans, and felt "strangely warmed. I felt I did trust in Christ, Christ alone for salvation; and an assurance was given me that he had taken away my sins, even mine, and saved me from the law of sin and death." The next day, "the moment I awaked, 'Jesus Master,' was in my heart and in my mouth; and I found all my strength lay in keeping my eye fixed on him, and my soul waiting on him continually." (Conversions, pp. 54-60)

William James records the conversion story of Henry Alline, a Christian evangelist who labored in Nova Scotia in the eighteenth century. His experience, James notes, bears some similarities to that of Bunyan. Alline felt the same deep religious melancholia, akin to Tolstoy, Bunyan, and many others. "Everything I saw seemed to be a burden to me; the earth seemed accursed for my sake: all trees, plants, rocks, hills ... seemed to be dressed in mourning and groaning... . My sins seemed to be laid open... ." (James, p. 159)

But on March 26, 1775, in James' words, "his poor divided mind became unified for good." (p. 217) "As I was about sunset wandering in the fields lamenting my miserable lost and undone condition... the following impressions came into my mind like a powerful but small still voice. 'You have been seeking, praying, reforming ... meditating..., are you any nearer to conversion now than when you first began?' ... I did not think that I was one step nearer than at first... ." (p. 217-218)

Returning to his home, he noticed a Bible and opened it in haste, to the thirty-eighth Psalm. He prayed, in paraphrase of that psalm, a plea for redemption. And "at that instant of time when I gave all up to him to do with me as he pleased, and was willing that God should rule over me at his pleasure," (p. 218) at that moment, "redeeming love broke into my soul with repeated scriptures, with such power that my whole soul seemed to be melted down with love; the burden of guilt and condemnation was gone, darkness was expelled, my heart humbled and filled with gratitude... . My Lord and my God."

Then, "looking up, I thought I saw that same light (as he had seen, interiorly, before), though it appeared different; and as soon as I saw it, the design was opened to me, according to the promise, I ... cried out: Enough, enough, O blessed God." (James, p. 218-219)

Charles G. Finney (1792-1875) significantly influenced the nature and the language of American revivalist evangelical preaching. His emphasis of grace and works added a perfectionist element to Protestant evangelical religion that was particularly a mark of the American frontier in the nineteenth century. As Kerr and Mulder note, this affected the American emphasis on self-reliance and the entrepreneurial spirit. (Conversions, pp. 103-104)

Finney describes the malaise and awareness of sin that marks many stories of conversion. In October of 1821, "I made up my mind that I would settle the question of my soul's salvation at once, that if it were possible I would make my peace with God." (Conversions, p. 104) During that week, "I had become very nervous; and in the night a strange feeling came over me as if I was about to die." He started for his office, but was stopped by "an inward voice: 'what are you waiting for? Did you not promise to give your heart to God?...'"

He reports that at this moment "the whole question of Gospel salvation opened to my mind. ... I saw, as clearly as I ever have in my life, the reality and fullness of the atonement of Christ." (Conversions, p. 105)

Finney stopped and changed his course from his office to a secluded wooded area, north of the village in the state of New York where he lived. He "penetrated into the woods out of sight of the village" and found a place where some large trees had fallen across each other, leaving an open space in between. "There I saw I could make a kind of closet. I crept into this place and knelt down for prayer.... I said, I will give my heart to God...." Yet he experienced a sinking feeling of despair. "A great sinking and discouragement came over me... ." He felt "an overwhelming sense of my weakness..." Then, "just at that point this passage of scripture seemed to drop into my mind with a flood of light: 'then shall ye go and pray unto me, and I will hearken unto you. Then shall ye seek me and find me, when ye shall search for me with all your heart.' I instantly seized hold of this with my heart." (Conversions, p. 107) He returned to his office, feeling that all sense of sin and guilt had left him.

But before entering his office, he retired to a back room to pray. William James records Finney's vision:

All at once the glory of God shone upon and round about me.... A light perfectly ineffable shone in my soul, that almost prostrated me on the ground. ... This light seemed like the brightness of the sun in every direction. It was too intense for the eyes. ... I think I knew something then by actual experience, of that light that prostrated Paul on the way to Damascus. (James, p. 252)

Finney continues:

There was no fire and no light in the room; nevertheless it appeared ... perfectly light. As I went in and shut the door after me, it seemed as if I met the Lord Jesus Christ face to face. It did not occur to me then, nor did it for some time afterwards that it was wholly a mental state. On the contrary, it seemed to me that I saw him as I would see any other man. (James, p. 254)

Finney writes that he fell down and wept at Jesus' feet, "and poured out my soul to him. .. It seemed to me that I bathed his feet with my tears. "

After this experience, Finney returned to his office and sat by the fire. Then he describes a shattering baptism of the Spirit.

Without any expectation of it, without ever having the thought in my mind that there was any such thing for me, without any recollection that I had ever heard the thing mentioned by any person in the world, the Holy Spirit descended upon me in a manner that seemed to go through me, body and soul. I could feel the impression, like a wave of electricity, go through and through me. Indeed, it seemed to come in waves and waves of liquid love.

(James, p. 255)

Finney describes his reaction: "No words can express the wonderful love that was shed abroad in my heart. I wept aloud with joy and love." (James, p. 255)

Finney led evangelical revivals throughout New York in the 1820s and '30s and later served on the faculty of Oberlin College, Ohio, from 1835 to 1875 and as president from 1851 to 1866. (Conversions, p. 104)

Joseph Smith (1805-1844), founder of the Church of Jesus Christ of Latter-day Saints (Mormon Church), recorded a revelation that occurred in his fifteenth year in Manchester, New York. Like many other similar stories, Smith reports his concern over contending religious groups and his own consciousness of sin. He was reading the epistle of James, chapter one verse five: "if any of you lack wisdom let him ask of God...." Smith says, "never did any message of scripture come with more power ... than this did.... It seemed to enter with great force into every feeling of my heart." On this day in 1820, he sought a secluded place and began to pray. He then reports that he was immediately set upon by a dark power that threatened his obliteration. Then he called upon God "to deliver me out of the power of the enemy which had seized upon me... ." At that moment he was freed from this force and "saw a pillar of light exactly over my head, above

the brightness of the sun... ." He saw "two Personages, whose brightness of glory defy all description, standing above me in the air. One of them spoke unto me pointing to the other— 'This is my Beloved Son. Hear Him.'" Smith was told to join none of the sects of the area.

Three years later, while praying in his room, "I discovered a light appearing in my room, which continued to increase until the room was lighter than at noonday." He described an angel named Moroni, dressed in a robe of "exquisite whiteness." Moroni told Smith of gold plates buried in a nearby hill. While he was not to retrieve them then, he would be told later to do so. This vision was repeated three times. According to Smith, in 1827 he obtained the plates, translated them, and published the work as the Book of Mormon, which, along with the Bible, became the founding scriptures for the Mormon Church. (See, Pearl of Great Price, Joseph Smith, 2:11-12, 15-20)

A significant portion of the expansion and colonization of the West was accomplished by the Mormons, under the direction of Brigham Young, Smith's successor, after Smith was murdered, along with his brother Hyrum, by a mob in Illinois. The Mormon trek to the Great Basin of the West, extending into California, Texas, Mexico, and New Mexico, along with the states of the Rocky Mountains, constitutes one of the more fascinating chapters in American political and religious history.

William James, quoting from E.D. Starbuck's *The Psychology of Religion*, relates the experience of Mrs. Jonathan Edwards, in the mid-eighteenth century:

Last night was the sweetest night I ever had in my life. I never before ... enjoyed so much of the light and rest and sweetness of heaven in my soul... . I lay awake, sometimes asleep, and sometimes between sleeping and waking. But all night I continued in a constant, clear and lively sense of the heavenly sweetness of Christ's excellent love, of his nearness to me, and of my dearness to him: with an inexpressibly sweet calmness of soul in an entire rest in him. I seemed ... to perceive a glow of divine love come down from the heart of Christ in heaven into my heart in a constant stream, like a stream or pencil of sweet light. At the same time my heart and soul all flowed out in love to Christ, so that there seemed to be a constant flowing and reflowing of heavenly love, and I appeared to myself to float or swim, in these bright, sweet beams, like motes swimming in the beams of the sun, or the streams of light which come in at the window. ... There was but little difference, whether I was asleep or awake... . As I awoke early the next morning, it seemed to me that I had entirely done with myself. ... The glory of God seemed to swallow up every wish and desire of my heart. ... (James, p. 276-77)

James, in commenting on the psychology of this religious experience common to Catholic saints and Protestant converts, says: "Religious rapture, moral enthusiasm, ontological wonder, cosmic emotion, are all unifying states' of mind, in which the sand and grit of selfhood incline to disappear, and tenderness to rule. The best thing is to describe the condition integrally as a characteristic affectation to which our nature is liable, a region in which we find ourselves at home, a sea in which we swim... . Like love or fear, the faith-state is a natural psychic complex, and carries charity with it by organic consequence." (p. 279)

James continues the narrative of Mrs. Edwards, as recorded by Professor Starbuck:

When I arose in the morning of the Sabbath, I felt a love to all mankind, wholly peculiar in its strength and sweetness, far beyond all that I had ever felt before. The power of love seemed inexpressible. I thought, if I were surrounded by enemies, who were venting their malice and cruelty upon me, in tormenting me, it would still be impossible that I should cherish any feelings towards them but those of love, pity, and ardent desires for their happiness. (James, p. 280)

Jonathan Edwards (1703-1758) was one of the greatest American theologians and sided with those Christians during the Great Awakening who looked toward evangelical passion rather than intellectual conviction as the centerpoint of conversion. As noted by Kerr and Mulder, Edwards concluded that "our people do not so much need to have their heads stored, as to have their hearts touched." (*Conversions*, p. 67)

Like the Eunuch with Philip in a first-century conversion, or St. Augustine, St. Teresa, George Fox, John Bunyan, John Wesley, or Charles G. Finney and countless others, Wesley, in recording his experiences of conversion notes the effect of a particular passage of scripture as a beginning point. He read 1 Timothy 1:17:

'Now unto the King eternal, immortal, invisible, the only wise God, be honour and glory for ever and ever, Amen.' As I read the words, there came unto my soul, and was as it were diffused through it, a sense of the glory of the Divine Being; a new sense, quite different from anything I ever experienced before. Never any words of scripture seemed to me as these words did. ... From about that time, I began to have a new kind of apprehensions and ideas of Christ, and the work of redemption... . An inward, sweet sense of these things, at times, came into my heart; and my soul was led away in pleasant views and contemplations of them. And my mind was greatly engaged to spend my time in reading and meditating on Christ... . (Conversions, p. 68)

Edwards wrote of meditating often upon the passage in Matthew, 18:3: "'except ye become as little children...:' It has often appeared to me delightful, to be united to Christ; to have him for my head, and to be a member of his body; also to have Christ for my teacher and prophet." (Conversions, p. 69)

Edwards recounted a vision of Jesus: "once, as I rode out into the woods for my health, in 1737, having alighted from my horse in a retired place, as my manner commonly has been, to walk for divine contemplation and prayer, I had a view, that for me was extraordinary, of the glory of the Son of God, as Mediator between God and man... . The person of Christ appeared ineffably excellent, with an excellency great enough to swallow up all thought and conception—which continued, as near as I can judge, about an hour, which kept me the greater part of the time, in a flood of tears, and weeping aloud. I felt an ardency of soul to be, what I know not otherwise how to express, emptied and annihilated; ... to be full of Christ alone... . I have, several other times, had views very much of the same nature... ." (Conversions, p. 69)

From the beginning of this essay, there has been a Pauline theme: the expansion of Christianity through barriers of time, place, ethnicity; race and gender; between many different Christian traditions; and, through a common mystical tradition, at least the suggestion of inter-faith communion. No more aliens, all in the image of God.

This vision leads to ontological and cosmological integration, the reality of St. Francis' vision of Brother Sun and Sister moon and stars; and to a theology based upon a feeling of intimacy with God and a literal view of our creation in the image of God. The Abba prayers of Jesus and Paul epitomize this sense of intimacy. The consequential morality is again one of integration: as children of God we should love one another. The metaphors of Paul appear: we are parts of one body; or a building fitly framed together. We are no more strangers or aliens, but fellow citizens of the Kingdom of God, in the household of faith.

The concluding witnesses continue this theme.

William James relates the story of a Canadian psychiatrist, R.M. Bucke, who studied the phenomena of what he called "cosmic consciousness." Bucke described this as follows:

The prime characteristic of cosmic consciousness is a consciousness of the Cosmos, that is, of the life and order of the universe. Along with the consciousness of the Cosmos there occurs an intellectual enlightenment which alone would place the individual on a new plane of existence—would make him almost a member of a new species. To this is added a state of moral exaltation, an indescribable feeling of elevation, elation, and joyousness, and a quickening of the moral sense, which is fully as striking, and more important than is the enhanced intellectual power. With these came what may be called a sense of immortality, a consciousness of eternal life, not a conviction that he shall have this, but the consciousness that he has it already. (R.M. Bucke, *Cosmic Consciousness: a Study in the Evolution of the Human Mind*: p.2, Phila.: 1901, as quoted in James, at 398).

James describes Dr. Bucke's own experience which led to his study. Bucke said that he was driving "in a hansom to my lodging," thinking about the evening he had just spent with friends:

All at once, without warning of any kind, I found myself wrapped in a flame-colored cloud. For an instant I thought of fire, an immense conflagration somewhere close by in that ... city (where he had spent the evening); the next, I knew that the fire was within myself. Directly after which there came upon me a sense of exultation, of immense joyousness accompanied and immediately followed by an intellectual illumination impossible to describe. Among other things, I did not merely come to believe, but I saw that the universe is not composed of dead matter, but is on the contrary, a living Presence; I became conscious in myself of eternal life. It was not a conviction that I would have eternal life, but a consciousness that I possessed eternal life then; I saw that all men are immortal; that the cosmic order is such that without any peradventure all things work together for the good of each and all; that the foundation principle of the world, of all the worlds, is what we call love, and that the happiness of each and all is in the long run absolutely certain. The vision lasted a few seconds and was gone; but the memory of it and the sense of the reality of what it taught has remained during the quarter of a century which has since elapsed. I know that what the vision showed me was true. I had attained a point of view from which I saw that it must be true. (Bucke, as quoted by James, at p. 398-399)

Martin Buber records the visions of Anna Katharina Emmerich (1774-1824), a Roman Catholic sister:

The angel summons me and leads me hither and thither. I travel with him very often. He takes me to persons whom I do not know... . He even takes me across the sea; but it is swift as a thought, and then I see so far, so far! ... when he comes to me to lead me on some journey, I usually see first a brightness, and then a form suddenly emerges shining from the night... . When we travel it is night above us; but a shimmer flies over the face of the earth. We travel from here through familiar landscapes to regions farther and farther away, and I have the sensation of uncommon distance... .

My leader floats sometimes before me, sometimes besides me. I never see his feet move... . He is so transparent and shining... . He is without head covering and wears a long priestly robe... .

I know nothing of myself, I thought only of Jesus and my holy vows. My sister nuns do not understand me... . But God has hidden from them many other mercies that he showed me... . When I worked in the garden, the birds came to me, sat on my head and shoulders, and we sang praises to God together. I saw my guardian angel always at my side... . I have been flying and seeing the whole day.... I see a light-filled world that is always understandable through and through, right through to the inner origin and coherency of all appearances... . (Buber, pp. 135-138)

Later, Buber quotes the sayings of the Hasidim:

Occasionally one may experience the separation that there are so many other firmaments and spheres, and he stands on one point of the little earth, and the whole world is as nothing before God, who is the limitless one and who made limitations and set location in himself in order to make the worlds. And although he grasps this with his understanding, he cannot climb up to the upper worlds, and so it seems to him as if he were seeing God from a distance. But if he serves with his might, then he clings to the great might and elevates himself in his mind and breaks all at once through all the firmaments and transcends angels and hypostases and seraphim and thrones. (Buber, pp. 149-50)

In Mormon scripture, which might be considered as a sort of pseudepigraphic literature by Christians of other traditions, Joseph Smith records what he considered to be a vision of Moses: "Moses beheld the earth... . There was not a particle of it which he did not behold, discerning it by the power of God. ..." God then tells Moses:

And worlds without number have I created. ... And by the Son I created them, which is mine only Begotten

... there are many worlds that have passed away by the word of my power. And there are many that now stand, and innumerable are they unto man; but all things are numbered unto me, for they are mine and I know them. ... And as one earth shall pass away, and the heavens thereof even so shall another come: and there is no end to my works, neither to my worlds.

For behold, this is my work and my glory—to bring to pass the immortality and eternal life of man. (Pearl of Great Price, Moses 1:27, 33, 35, 37-39)

In a later passage of this work, Smith portrays a dialogue between Enoch and God. Enoch sees all creation, and sees God weeping: "The God of Heaven looked upon the residue of his people and he wept." Enoch, shocked that God Almighty, Creator of all, wept. "How is it that thou canst weep, seeing that thou art holy, and from all eternity to eternity?" God says: "These are thy brethren... And to thy brethren have I said that they should love one another but ... they are without affection, and they hate their own blood." (Id., Moses 7:28-33)

Deep within the Jewish and Christian tradition is the impulse of sensitivity toward the alien: "When a stranger resides with you in your land, you shall not wrong him. The stranger who resides with you shall be as one of your citizens; you shall love him as yourself, for you were strangers in the land of Egypt; I the Lord am your God." (Lev. 19:33-34)

Deuteronomy repeats the injunction of Leviticus: "For the Lord your God ... shows no favor and takes no bribes but upholds the cause of the fatherless and the widows and loves the stranger, providing him with food and clothing. You too must love the stranger, for you were strangers in the Land of Egypt." (Deut. 10:17-19)

The intertwining of cosmic consciousness and compassionate morality is manifest by a certain coherence between the intuition of St. Francis and findings of biology and physics in this century. As scientists Barbara Jackson and Rene Dubos put it:

There is something clarifying and irresistible in plain scientific fact. The astonishing thing about our deepening understanding of reality over the last four or five decades is the degree to which it confirms and reinforces so many of the older moral insights of man. The philosophers told us we were one, part of a greater unity which transcends our local drives and needs. They told us that all living things are held together in a most intricate web of interdependence. They told us that aggression and violence, blindly breaking down delicate relationships of existence, could lead to destruction and death. These were, if you like, intuitions, drawn in the main from the study of human societies and behavior. What we learn is that they are factual descriptions of the way in which our universe actually works. (Jackson & Dubos, p. 85, *Only One Earth*, New York: Penguin Books, 1972)

Father Thomas Berry, a noted biologist, said: "If the earth does grow inhospitable toward human presence, it is primarily because we have lost our sense of courtesy toward the earth and its inhabitants, our sense of gratitude, our willingness to recognize the sacred character of habitat, our capacity for the awesome, for the numinous quality of every earthly thing."

And again: "One of the finest moments in our new sensitivity to the natural world is our discovery of the Earth as a living organism." (See generally T. Berry, *The Dream of the Earth*, San Francisco: Sierra Club Book, 1988)

The final witness is Thomas Merton (1915-1968), with St. Paul, St. Francis of Assisi, and Mahatma Gandhi, the most vital to the essayist (Jesus as God Incarnate is unfair competition). Merton was born in Prades, France, in the Catalan country near the Spanish border. Educated in England and Columbia, a Catholic convert of the deepest spirituality. Taking vows in one of Catholicism's strictest orders, the Cistercians or Trappists, he took vows not only of poverty, chastity, and obedience, but silence. Then this most eloquent Christian monastic burst out in a torrent of writing which makes him among the most widely

read Christians of all time. His *Seven Storey Mountain*, a youthful spiritual autobiography of the genre of Augustine's *Confessions* and Bunyan's writings, became an instant bestseller worldwide and is considered a spiritual classic.

Merton's appeal among all Christian traditions and across boundaries of other religions is enormous. He corresponded with people as varied as His Holiness, the Dalai Lama and Joan Baez; and Central American revolutionaries and politicians of every variety. He spoke the language of a universal spirituality, the perennial philosophy, but with a style that allowed this century to understand the message of Saints from Augustine to Boehme, John of the Cross, Teresa of Avila; and Hildegard von Bingen to Evelyn Underhill. He also linked this message of deep spirituality to a social awareness that propelled him into a sometimes unwilling spiritual leader to those opposed to war and in favor of human rights. He spoke the language of the young with the wisdom of the past and he was transparent, whether or not he intended always to be. He seemed to be constitutionally incapable of subterfuge.

Deciding upon his conversion story is not easy, since he claimed several as the "high point." Kerr and Mulder, with good reason, chose his account of his conversion to Catholicism, as related in *Seven Storey Mountain*. One might also choose his account of his decision to join the Trappists. Another might be among his last writings, on his final and fatal Asian journey, where he saw the sitting and the reclining statues of the Buddha at Polonnaruwa, Ceylon: "Surely, with Mahabalipuram and Palonnaruwa my Asian pilgrimage had come clear and purified itself. I mean, I know and have seen what I was obscurely looking for. I don't know what else remains but I have now seen and have pierced through the surface and have got beyond the shadow and the disguise." (*The Asian Journal of Thomas Merton*, pp. 235-36, New York: New Directions, 1975.)

But we will choose two others. First, his vision of humanity at the corner of Fourth and Walnut in Louisville, where he had gone from the monastery at Gethesemene, for hospitalization:

In Louisville, at the corner of Fourth and Walnut, in the center of the shopping district, I was suddenly overwhelmed with the realization that I loved all these people, that they were mine and I was theirs, that we could not be alien to one another even though we were total strangers. It was like waking from a dream of separateness, of spurious self-isolation. ... The whole illusion of a separate holy existence is a dream. ... The sense of liberation from an illusory difference was such a relief and such a joy to me that I almost laughed out loud. ... It is a glorious destiny to be a member of the human race, though it is a race dedicated to many absurdities and one which makes many terrible mistakes; yet, with all that, God Himself glorified in becoming a member of the human race. A member of the human race! To think that such a commonplace realization should suddenly seem like news that one holds the winning ticket in a cosmic sweepstake. ... There is no way of telling people that they are all walking around shining like the sun. ... Then it was as if I suddenly saw the secret beauty of their hearts, the depths of their hearts where neither sin nor desire ... can reach ... the person that each one is in God's eyes. If only they could all see themselves as they really are. If only we could see each other that way all the time. There would be no more war, no more hatred, no more cruelty, no more greed ... I suppose the big problem would be that we would fall down and worship each other. But this cannot be seen, only believed and understood... (T. Merton, *Conjectures of a Guilty Bystander*, New York: pp. 156-58, Doubleday Image Book, 1966)

And the end and the beginning:

Now I shall ascend to the top of this religious city, leaving its modern history behind. I climb the trembling, twisted stair into the belfry. The darkness stirs with a flurry of wings high above me in the gloomy engineering that holds the steeple together. Nearer at hand, the old clock ticks in the tower. I flash the light into the mystery that keeps it going, and gaze upon the ancient bells.

And now my whole being breathes the wind which blows through the belfry and my hand is on the door through which I see the heavens. The door swings out upon a vast sea of darkness and of prayer. Will it come like this, the moment of my death? Will you open a door upon the great forest and set my feet upon a

ladder under the moon, and take me out among the stars? (T. Merton, *The Sign of Jonas*, pp. 359-360 New York: Harcourt, Brace and Jovanovich, 1953)

I believe that we humans, like all forms of life everywhere, are students. In the past several thousand years, we have been taught, and some have learned, the most basic laws of nature, the laws of life. These laws – which simply must have deep significance to cosmically evolved lifeforms – must ultimately be based upon the emotion of love, the search for truth, achieving respect instead of fear in the face of difference and diversity. There can be no serious question that love and truth are significant to the purposes and the unfolding of the Cosmos.

Since it would not be possible to viscerally appreciate the scientific truth and significance of this assertion literally until late in this century, how can scientists possibly be so hubris as to discount the hypothesis that great world religions have – as billions of faithful believe – been fostered by more highly evolved beings, attempting to "groom" a relationship with a younger species of life called humanity? If a million years from now we chose to groom, say, a more sophisticated descendent of the species *chimpanzee* into a more mature form of life, would we not employ similar types of educational processes to impress systems of belief?

If you were the proprietor of a nursery school called human civilization on a planet called Earth, would you not employ great teachers and teachings to guide a primitive and promising species to this crucial knowledge? Would such humans not naturally create great religions and churches to enshrine and pass down such guidance to their descendants, however imperfectly?

And could you allow your students to advance beyond their nursery without clear demonstration of this wisdom learned?

**TEACHERS HAVE TAUGHT US
THROUGH THE AGES.
THEY ARE WATCHING US NOW...**

At the absolute least, UFOs represent a genuinely unknown psychological phenomenon at work in the mind of man. UFOs represent one of only two fundamental intermediate paradigms for the debate of our time, between science and religion. The other intermediate paradigm, the near-death experience, has several qualities that parallel the UFO phenomenon.

At stake is the nature of our most important myths. Whatever the answer, it will seal the reach of humanity for the next thousand years.

The Matrix of Beliefs

The Question of the Ages!

Are we seeing in our skies things beyond "normal"?

Old physics says they are impossible, new physics disagrees

If real, they are relatively discrete and "etheric"

They appear to have multiple agendas -- is there an integrated saga?

They appear to be empowered with:

technologies of spacetime propulsion

facility to draw energy from spacetime

capacity to manipulate spacetime through consciousness alone

In other words, "godlike" powers

The following sections set forth some of the most astonishing information ever presented to the people of Earth, much of it for the very first time.

The first two sections provide background information on the phenomenon in question, one coming from a historical perspective, and the other from a more institutional perspective. The texts come from two of the most reputable investigative reporters of various anomalies in recent history. Naturally, there is substantial overlap between their work.

The History

The term "saucer" was used to describe an unusual sky object on January 24, 1878. The Denison Daily News in Denison, Texas reported that local farmer John Martin watched a round, dark object that looked like a "saucer" moving high in the sky "at a wonderful speed."

Sixty-nine years later on June 24, 1947, an Idaho salesman named Kenneth Arnold would use the same word to describe strange crescent-shaped objects moving in the sky. Arnold was flying his small airplane over the Cascade Mountains in Washington state, approaching Mt. Rainier around 3 PM from the west. At 9,200 feet over Mineral, Washington, "a tremendously bright flash lit up the surface of my aircraft," Arnold later wrote in his book *The Coming of the Saucers* © 1952. "I observed ... a formation of very bright objects coming from the vicinity of Mt. Baker flying very close to the mountain tops and traveling at tremendous speed. ...I watched as these objects rapidly neared the snow border of Mt. Rainier..." Arnold counted nine objects flying in two parallel rows, four in front and five in back. "...Their flight was like speed boats on rough water," Arnold wrote. He told reporters in Pendleton, Oregon, "they flew like a saucer would if you skipped it across the water." The phrase "flying saucers" stuck with the media which tried to keep up with hundreds of eyewitness sightings in the United States that year.

Three years earlier in 1944 when American troops were fighting Germans and Japanese in World War II, pilots reported "strange flares" and "bright orange lights that were under perfect control." The lights could move rapidly, come to a complete stop, remain motionless for minutes at a time, and then disappear like a lamp turned off by a switch.

The French word for fire is feu and a popular wartime comic strip, Smoky Stover, made the pun "Where there's foo, there's fire." So, "foo" became pilot lingo for the fiery lights that haunted their planes. The "foo fighters" were invisible to radar while easily pacing jets right off wing tips. Pilots were unnerved when the red-orange balls shot straight up in vertical jumps that no other known Allied aircraft could do.

Before and during World War II, there were rumors that Germany was developing or back-engineering round aircraft. If true, whose technology were the Germans back-engineering and where are those discs today? Hitler also implied his scientists had "death rays" to conquer the world. But if there were any truths to these persistent rumors, why didn't Hitler and his Third Reich use the advanced technologies before their defeat?

When the German scientist Wernher Von Braun and others tested German Vengeance-2 (V-2) rockets at White Sands Missile Range, an inexplicable number of rockets went off course or blew up and rumors were that discs sometimes were present when there were problems.

The Las Cruces Citizen reported on May 22, 1947 under the headline "Peculiar Phenomena Is Blamed as V-2 Rocket Goes Astray" that Lt. Col. Harold R. Turner, Commanding Officer of White Sands, blamed "peculiar phenomena" for the erratic test flight of a German V-2 rocket launched May 15, 1947 at White Sands Proving Ground which landed only six miles east of Alamogordo at the town of Indian Springs. The rocket carrying a warhead installed by the Naval Research Laboratory was spotted at its landing about 55 miles from the launching site where it was fired at 4:09 PM. A crew was sent out immediately to recover the rocket body and warhead."

Throughout centuries before World War II, discs and other unusual machines in earth's skies and waters have been reported around the world. In his classic 1965 book, *Anatomy of A Phenomenon*, French astronomer and computer scientist Jacques Vallee cited University of Peking, China discoveries of granite carvings "possibly made in 45,000 B. C." Those stone carvings depict cylindrical-shaped objects in the sky upon which humanoid figures stand.

Another European researcher, B. Le Poer Trench reported in his 1960 book *The Sky People* that the former director of the Egyptian Museum at the Vatican, Professor Alberto Tulli, had an Egyptian papyrus from Thutmose III (1504-1450 B. C.) that was translated in part: "In the year 22, of the third month of winter, sixth hour of the day ... the scribes of the House of Life found it was a circle of fire that was coming in the sky." There was also "a foul odor," no sound, and a size estimated to be "one rod long and wide." A rod is defined as 16.5 feet. Over several days, the number of bright "fire circles" increased and filled the sky. The Pharaoh and his army watched as "these fire circles ascended higher in the sky towards the south."

The Bible has many references to "pillars of fire," Isaiah's whirlwind chariots of fire, Ezekiel's "large cloud glowing with fire" that contained wheels within wheels, unusual entities such as the six-fingered and six-toed giants of Gath and other tall beings with glowing faces and long white robes that suddenly appear and disappear.

The Mahabharata and the Ramayana epic poems of India describe events more than three thousand years ago that mention round, flying vehicles called vimanas which made loud noise, could move in any direction and traveled on some kind of ray.

After World War II

Throughout 1947 there were hundreds of eyewitness sightings of round, oval, crescent, wedge and cigar-shaped aerial vehicles. The most famous U. S. incidents were the "flying saucers" reported by Kenneth Arnold near Mt. Rainier, Washington and the alleged crash of one or two UFOs between Corona and Roswell, New Mexico in the first week of July 1947.

According to a TOP SECRET/MAJIC "Briefing Document: Operation MAJESTIC-12 Prepared for President-Elect Dwight D. Eisenhower: (EYES ONLY) 18 November, 1952," a TOP SECRET Research and Development /Intelligence operation known as Majestic-12 was established by President Harry S. Truman in a classified Executive Order on September 24, 1947 to study and assess the unidentified flying object mystery. The term "MAJIC," with a "J," might have been derived from the word MAGIC, with a "G," which was used in the 1930s by Director of Naval Intelligence, Walter Anderson, as a collective code name for cryptology and its super secret codebreakers.

J. Andrew Kissner, New Mexico House Representative for District 37 in Las Cruces, researched early United States efforts to collect and analyze flying discs. He suggests that the terms MAJIC and MJ-12 might also be associated with the Manhattan (Engineering District) Joint Chiefs of Staff Integrated Command – (Z Division, Group) 12. Originally, Division Z was involved in the TOP SECRET nuclear weapons development at Los Alamos in the early 1940s.

By 1952 and the change of administrations, President Truman had already signed the National Security Act in July 1947 which created the National Security Council. Also under that Act, the Central Intelligence Agency (CIA) was organized from the Office of Strategic Services (OSS) and the Central Intelligence Group (CIG) which had played important roles in cryptanalysis during both world wars.

The dozen scientists, military leaders and businessmen assigned to the TOP SECRET/MAJIC Majestic-12 (MJ-12) Research and Development/Intelligence group were listed in this order in the Eisenhower briefing document (Appendix 1):

1. Navy Admiral Roscoe H. Hillenkoetter, first Director of the Central Intelligence Agency.

2. Vannevar Bush, electrical engineer, Scientific Adviser to President Truman and Chairman of the National Defense Resources Commission.
3. James Vincent Forrestal, appointed by President Truman to be the first Secretary of Defense after the enactment of the National Security Act of 1947. Died on May 22, 1949 at Bethesda Naval Hospital after falling four stories through a plate glass window.
4. Army General Walter Bedell Smith, took James Forrestal's place in the MJ-12 group in 1950 after Defense Secretary Forrestal's death.
5. Air Force General Nathan F. Twining, head of the Air Material Command at Wright Field (later Wright-Patterson AFB), Dayton, Ohio and later became Chairman of the Joint Chiefs of Staff in the Pentagon.
6. Air Force Chief of Staff Hoyt Sanford Vandenberg, former Director of the Central Intelligence Group (CIG), the forerunner of the CIA.
7. Jerome Hunsaker, aeronautical engineer and Chairman of the National Advisory Committee on Aerospace.
8. Sidney W. Souers, businessman and close friend of President Truman's, headed the Central Intelligence Group in 1946 that became the Central Intelligence Agency in 1947. Later he was an honorary director of the McDonnell Douglas Corp.
9. Gordon Gray, attorney, Secretary of the Army, Special Assistant to President Truman and Director of the Psychological Strategy Board for the CIA.
10. Donald H. Menzel, Chairman of Harvard University's Department of Astronomy.
11. Army General Robert Montague, Director of the Anti-Aircraft and Guided Missiles Branch of the Army Artillery School and Commanding General of Sandia Base, Albuquerque, New Mexico.
12. Lloyd V. Berkner, electrical engineer, developer of radar and navigation systems, organized the International Geophysical Year in 1950 and created the Distant Early Warning radar system.

The following is a partial history of 1947 UFOB events from the MJ-12 briefing paper for President-Elect Eisenhower:

"On 24 June, 1947, a civilian pilot flying over the Cascade Mountains in the State of Washington observed nine flying disc-shaped aircraft traveling in formation at a high rate of speed. Although this was not the first known sighting of such objects, it was the first to gain widespread attention in the public media. Hundreds of reports of sightings of similar objects followed. Many of these came from highly credible military and civilian sources. These reports resulted in independent efforts by several different elements of the military to ascertain the nature and purpose of these objects in the interests of national defense. A number of witnesses were interviewed and there were several unsuccessful attempts to utilize aircraft in efforts to pursue reported discs in flight. Public reaction bordered on near hysteria at times.

"In spite of these efforts, little of substance was learned about the objects until a local rancher reported that one had crashed in a remote region of New Mexico located approximately seventy-five miles northwest of Roswell Army Air Base (now Walker Field).

"On 07 July, 1947, a secret operation was begun to assure recovery of the wreckage of this object for scientific study. During the course of this operation, aerial reconnaissance discovered that four small human-like beings had apparently ejected from the craft at some point before it exploded. These had fallen to earth about two miles east of the wreckage site. All four were dead and badly decomposed due to action by predators and exposure to the elements during the approximately one week time period which had elapsed before their discovery. A special scientific team took charge of removing these bodies for study. (See Attachment 'C'.) The wreckage of the craft was also removed to several different locations. (See Attachment 'B'.) Civilian and military witnesses in the area were debriefed, and news reporters were given the effective cover story that the object had been a misguided weather research balloon.

"A covert analytical effort organized by General (Nathan) Twining and Dr. (Vannevar) Bush acting on the direct orders of the President (Truman), resulted in a preliminary consensus (19 September, 1947) that the disc was most likely a short range reconnaissance craft. This conclusion was based for the most part on the craft's size and the apparent lack of any identifiable provisioning. A similar analysis of the four dead

occupants was arranged by Dr. (Detlev) Bronk. It was the tentative conclusion of this group (30 November, 1947) that although these creatures are human-like in appearance, the biological and evolutionary processes responsible for their development has apparently been quite different than those observed or postulated in homo-sapiens. Dr. Bronk's team has suggested the term 'Extra-terrestrial Biological Entities,' or 'EBEs,' be adopted as the standard term of reference for these creatures until such time as a more definitive designation can be agreed upon.

"Since it is virtually certain that these craft do not originate in any country on earth, considerable speculation has centered around what their point of origin might be and how they get here. Mars was and remains a possibility, although some scientists, most notably Dr. Menzel, consider it more likely that we are dealing with beings from another solar system entirely.

"Numerous examples of what appear to be a form of writing were found in the wreckage. Efforts to decipher these have remained largely unsuccessful. (See Attachment 'E'.) Equally unsuccessful have been efforts to determine the method of propulsion or the nature or method of transmission of the power source involved. Research along these lines has been complicated by the complete absence of identifiable wings, propellers, jets or other conventional methods of propulsion and guidance, as well as a total lack of metallic wiring, vacuum tubes, or similar recognizable electronic components. (See Attachment 'F'.) It is assumed that the propulsion unit was completely destroyed by the explosion which caused the crash.

"A need for as much additional information as possible about these craft, their performance characteristics and their purpose led to the undertaking known as U. S. Air Force Project SIGN in December, 1947. In order to preserve security, (sic) liason between SIGN and Majestic-12 was limited to two individuals within the Intelligence Division of Air Material Command whose role was to pass along certain types of information through channels. SIGN evolved into Project GRUDGE in December, 1948. The operation is currently being conducted under the code name BLUE BOOK, with (sic) liason maintained through the Air Force officer who is head of the project.

"Implications for the National Security are of continuing importance in that the motives and ultimate intentions of these visitors remain completely unknown. In addition, a significant upsurge in the surveillance activity of these craft beginning in May and continuing through the autumn of this year (1952) has caused considerable concern that new developments may be imminent. It is for these reasons, as well as the obvious international and technological considerations and the ultimate need to avoid a public panic at all costs, that the Majestic-12 Group remains of the unanimous opinion that imposition of the strictest security precautions should continue without interruption into the new administration. At the same time, contingency plan MJ-1949-04PP/78 (Top Secret - Eyes Only) should be held in continued readiness should the need to make a public announcement present itself. (See Attachment 'G'.)"

Other sources and documents indicate that in the late 1940s several different and unusual craft were retrieved from New Mexico and elsewhere not mentioned in the Eisenhower briefing. The description of decayed bodies might have been deliberate misinformation, even for Eisenhower, to avoid having to discuss the dissections and storage of more than one type of being.

A March 22, 1950 Federal Bureau of Investigation Memorandum to FBI Director Hoover said: "An investigator for the Air Forces stated that three so-called flying saucers had been recovered in New Mexico. They were described as being circular in shape with raised centers, approximately 50 feet in diameter. ...the saucers were found in New Mexico due to the fact that the Government has a very high-powered radar set-up in that area and it is believed the radar interferes with the controlling mechanism of the saucers." Radar is a government acronym for Radio Detecting and Ranging which uses various microwave frequencies.

1948 – 1998: Chronological Highlights Concerning Unidentified Flying Objects

If a future historian studied world newspapers from the last half of the 20th Century, he or she would find that unusual sky objects referred to as "flying saucers," UFOs or UFOBs (unidentified flying objects) were

frequently reported in the United States and around the planet. If that historian also studied U. S. government documents about those UFOs and its policies of denial and misinformation to keep the public and press ignorant of the facts, a chronological outline after 1947 would include the following highlights.

1948

January 7, Fort Knox, Kentucky — Shortly after noon, the Kentucky State Police received many phone calls from residents in Maysville, Owensboro and Irvington, who reported a high-flying UFO moving west at high speed. The police relayed the information to the control tower of Godman Air Force Base near Fort Knox, Kentucky. The base commander and a number of other observers watched the object through binoculars. There were different descriptions of the same oddly shaped aerial craft, perhaps from different angles: silvery-white "ice cream cone" tipped with red; conical or teardrop-shaped changing to round; and umbrella-shaped. A similar craft was described in a 1954 War Department training manual about "Extraterrestrial Entities and Technology, Recovery and Disposal" in a section labeled "Description of Craft." (See: 1954 April below.)

At Godman AFB, three P-51s were scrambled to identify the UFO, led by Captain Thomas Mantell. The three planes had no oxygen aboard as they began to climb toward the unidentified craft. Mantell radioed the tower:

"The object is traveling at half my speed and 12 o'clock high. I'm going to close in right now for a good look. It's directly ahead of me. The thing looks metallic and of tremendous size. It's going up now and forward as fast as I am. That's 360 miles an hour. I'm going up to 20,000 feet, and if I'm no closer, I'll abandon chase."

Mantell continued to climb, but the other two pilots radioed: "This strange object is too high for us to catch. It's going too fast." And they turned back. An eyewitness who saw the crash said that Mantell's P-51 went into a dive and began to disintegrate a few thousand feet above the ground. Mantell was dead amid wreckage spread over a half mile area.

Writer Harold Wilkins in his 1954 book *Flying Saucers On The Attack* wrote about the Mantell case: "On the day of the crash, about 5 PM (1700 hours), came a report from an airfield at Columbus, Ohio that a glowing disc was seen hurtling across the sky at an estimated speed of 550 miles an hour. It was white and orange and emitted an exhaust some five times its own length. This was at Lockbourne air base and the observers said the disc was followed from the observation tower for more than twenty minutes. It glowed from white to amber, appeared round or oval, and traveled in level flight. At one time it seemed to 'motion like an elevator,' and then appeared 'to touch the ground.' No sound was heard from it, and it finally faded and lowered towards the horizon.

"At the Clinton County Army Air Base at Wilmington, Ohio, observers reported: 'A flaming red cone trailing a gaseous green mist tore through the sky at 7:55 PM (19:55 hours).'

"This apparition looks very much like the machine that over four hours earlier smashed Mantell and his plane. Or, if not, it was one of the same type. At the same control tower, a staff sergeant and corporal saw 'the red cone maneuvering for thirty-five minutes when it seemed to vanish over the horizon. ...It seemed to hang suspended in the air at intervals. Then it came down (and) then ascended at what looked like a terrific speed. The intense brightness from this phenomenon in the sky pierced through a heavy cloud layer which intermittently passed over the region.'

"It is to be noted that thousands of people witnessed this phenomenon. Now came an amazing fact about the appearance of this phenomenal visitant: It was seen at places set apart by a distance of 180–190 miles and at an immense height. Calculations by radar and the theodolite (small surveying telescope) indicated

that in order to be visible to the eye in such circumstances such a stupendous machine must have been well over 500 feet in diameter! ... The answer is that it has been computed by later theodolite observations and mathematical calculations that the length of this colossal cosmic machine that smashed up Mantell and his plane was about 15,000 feet!"

After the terrible crash, rumors spread that Mantell had been shot down by an extraterrestrial spacecraft. But the first U. S. Air Force explanation was that Mantell had been chasing Venus. Later, the Navy said it had been testing classified Skyhook Balloons used for high-altitude photographic reconnaissance.

The U. S. government's reliance upon "balloons" to help explain away disc encounters is explained as official policy in the April 1954 War Department training manual about "Extraterrestrial Entities and Technology, Recovery and Disposal" in Chapter 3, Recovery Operations, Section I. Security, Topic 12. Press Blackout, Paragraph c. Deceptive Statements: "It may become necessary to issue false statements to preserve the security of the (extraterrestrial recovery) site. Meteors, downed satellites, weather balloons and military aircraft are all acceptable alternatives..."

January 22, Dayton and Fairborn, Ohio — Creation of Project SIGN, the code name of the first USAF investigation into UFOBs, as the government called them, implemented by the Intelligence Division of the Air Material Command (AMC), Wright Field, Ohio (now known as Wright-Patterson Air Force Base). AMC was later renamed the Air Technical Intelligence Center (ATIC). Its function was to "collect, collate, evaluate and distribute to interested government agencies and contractors all information concerning sightings and phenomena in the atmosphere which can be construed to be of concern to the national security."

July 24, 20 miles southwest of Montgomery, Alabama — Captain Clarence S. Chiles and John B. Whitted were flying an Eastern Airlines DC-3 from Houston to Atlanta at 2:45 AM when they saw a large red light headed toward them from the east. The encounter was summarized by USAF Captain Edward J. Ruppelt (Chief, Project BLUE BOOK, 1951-1953) who wrote in his 1956 book *The Report on Unidentified Flying Objects*:

"The UFO was now almost on top of them. Chiles racked the DC-3 up into a tight left turn. Just as the UFO flashed by about 700 feet to the right, the DC-3 hit turbulent air."

The pilots described the UFO as cigar-shaped with an underside that had a "deep blue glow." There were "two rows of windows from which bright lights glowed," and a "50-foot trail of orange-red flame" shot out the back.

A few days before on July 21, 1948, over The Hague in Holland, Dutch observers also reported a cigar-shaped UFO with two parallel rows of windows.

Ruppelt wrote: "A few days after the DC-3 was buzzed, the people at ATIC (Project SIGN) decided that the time had arrived to make an 'Estimate of the Situation.' The situation was the UFOs; the estimate was that they were interplanetary! ... The document pointed out that the reports hadn't actually started with the Arnold Incident (near Mt. Rainier, Washington on June 24, 1947). Earlier reports came from a weather observer in Richmond, Virginia who observed a 'silver disc' through his theodolite telescope; an F-47 pilot and three pilots in his formation who saw a 'silver flying wing,' and the English 'ghost airplanes' that had been picked up on radar early in 1947 proved this point."

After the Chiles/Whitted Sighting near Montgomery, Alabama, Project SIGN prepared an "Estimate of the Situation." Classified TOP SECRET, the report concluded that UFOBs were extraterrestrial vehicles. The estimate received considerable attention until it reached Chief of Staff General Hoyt S. Vandenberg who did not like the conclusion and later had the report destroyed. General Vandenberg did not explain that he was a member of the TOP SECRET Research and Development/Intelligence operation known as Majestic-12 appointed by President Truman in the summer of 1947 in which it was agreed that "imposition of the

strictest security precautions should continue without interruption into the new administration."
Translation: no one outside Truman and MJ-12 were to know that extraterrestrial entities in very advanced craft were interacting with earth.

After General Vandenberg destroyed SIGN's "Estimate of the Situation," the USAF changed SIGN to Project GRUDGE on February 11, 1949. A final Project SIGN report reflected the tension between the extraterrestrial "estimate" and Gen. Vandenberg's rejection of that assessment:

"No definite and conclusive evidence is yet available that would prove or disprove the existence of these unidentified objects as real aircraft of unknown or unconventional configuration. It is unlikely that positive proof of their existence will be obtained without examination of the remains of crashed objects. Proof of non-existence is equally impossible to obtain unless a reasonable and convincing explanation is determined for each incident."

October 1, Fargo, North Dakota — It was 9:00 PM when 25-year-old 2nd Lt. George F. Gorman in the North Dakota Air National Guard wanted to land his F-51. The control tower told Gorman that a Piper Cub was close by and he saw the small airplane below him. At the same time, a light passed on his right. The tower had nothing on radar. Gorman was curious and closed in on the light to what he estimated was a thousand yards. The light was blinking on and off and Gorman thought it was six to eight inches in diameter. He could not see any other shape around the light.

Captain Ruppelt summarized what happened next: "Suddenly the light became steady as it apparently put on power; it pulled into a sharp left bank and made a pass at the tower. The light zoomed up with the F-51 in hot pursuit. At 7,000 feet, it made a turn. Gorman followed and tried to cut inside the light's turn to get closer to it, but he couldn't do it."

Then the light turned on Gorman and came straight on a collision course. Gorman dived and the "UFO" passed over the '51 canopy with only a few feet to spare. Again, both the F-51 and the object turned and closed on each other head on, and again the pilot had to dive out to prevent a collision. All of a sudden the light began to climb and disappeared."

Gorman told ATIC investigators, "I had the distinct impression that its maneuvers were controlled by thought or reason." Project SIGN investigators went over Gorman's plane with a Geiger counter and found it was more radioactive than a similar airplane used for comparison.

1949

February 11 - Project SIGN was re-named Project GRUDGE. Despite General Vandenberg's deliberate interference with SIGN's estimate that discs were extraterrestrial, and perhaps due to the Mantell crash and the Gorman "dog fight" with the light over Fargo, someone in government wanted the Air Force to control UFO investigations. But, clearly a policy decision had been made to use misinformation and ridicule to keep the public and media out of the loop. Consequently, Project GRUDGE seemed to publicly concentrate on the people who reported UFOs in an apparent effort to neutralize public interest by forcing eyewitnesses to accept natural explanations.

Yet, even Project GRUDGE's final report conceded that 23% of its 244 cases were unidentified. However, GRUDGE implied that all those unidentified cases might be due to mental problems: "There are sufficient psychological explanations for the reports of unidentified flying objects to provide plausible explanations for reports not otherwise explainable."

The report concluded that the investigation of UFOs should be reduced in scope so that only those reports "clearly indicating realistic technical applications" would be submitted to the Air Technical Intelligence Center (ATIC) and ultimately and secretly to MJ-12. It did however, suggest that the Psychological Warfare Division be informed since mass hysteria could ensue if Cold War enemies placed aerial objects

over the United States and started rumors that they were alien craft.

It was also decided that government investigations gave UFOs too much credibility, so the USAF issued a press release on Dec. 27, 1949 announcing the termination of Project GRUDGE only ten months after its start. However, the organization continued to operate quietly, its data remained classified, and GRUDGE was reassigned to USAF Capt. Edward Ruppelt in September 1951.

May 22, Bethesda, Maryland — First U. S. Secretary of Defense, James Vincent Forrestal, fell through a plate glass window four stories to his death at the U. S. Naval Hospital. He had become America's first Secretary of Defense with the enactment of the National Security Act of 1947 which President Harry S. Truman signed in July. Forrestal resigned effective March 28, 1949 after two years of a deteriorating mental condition. Navy doctors said Forrestal suffered from "a severe depression of the type seen in operational fatigue during the war."

What exactly provoked the Secretary to plunge through the glass window to his death is still a mystery, but there has been speculation that it had something to do with the government's secrets about alien life forms.

1950

January 29, South Table Mountain, Colorado — An eyewitness reported a silvery-green oval disc hovered about fifty feet above a hill and then landed slowly in a ravine. Its diameter was about sixty feet and a band around the middle revolved. After a green light flashed beneath the landed disc, it shot upward at very high speed leaving behind a pungent smell.

March 18, Lago Argentino, Argentina — A rancher watched two objects come out of the sky and land. He walked to within about four hundred feet of the silver craft which gave off a greenish-blue vapor and "an intense smell of burning benzine." A large, flat section on top was revolving above a transparent cabin in which he could see four tall men working at instruments. The men looked at the rancher and shone a light in his direction at the same time a blue light illuminated the craft. The vapor increased and "flames" that alternated red and green came out of the craft's base. Then the craft rose with a faint hum and flew off leaving bluish trails.

May 11, McMinnville, Oregon — Paul and Evelyn Trent watched and photographed a disc at about 8 PM over their home. "The object was coming in toward us," Evelyn Trent said, "and seemed to be tipped up a bit. It was very bright — almost silvery — and there was no noise or smoke."

Paul Trent said he took the first photograph, re-wound his film, and the round craft accelerated toward the northwest as he took a second photograph. Both frames were snapped within thirty seconds. The couple could not guess size, speed or distance, but Paul Trent said, "It was moving awfully fast." After considerable government and civilian testing, the Trent images are considered to be authentic photographs.

August 15, Great Falls, Montana — Nicholas Mariana, General Manager of the Great Falls baseball team, photographed two silver discs through a telephoto lens he had on his 16mm movie camera. While he filmed for about twenty seconds, his secretary also watched. The developed film showed two circles of bright light. In October 1950, the U. S. Air Force looked at the film and dismissed it as "too dark" to distinguish recognizable objects.

Mariana was outraged when he received the film back and insisted that about 35 frames were missing which most clearly showed the discs spinning. Public controversy raged for years while behind the scenes the Air Force actions were consistent with the MJ-12 policy of secrecy and denial to protect national security.

1951

Winter, Mt. Kilimanjaro, Kenya, Africa — Crew of a British airliner reported a "bullet-shaped, metallic"

object "vertically marked on sides." There was a large "fin" at the "rear." The bullet object glowed brightly with a colored radiance and seemed to rapidly whirl on itself. The craft hung in the air motionless for seventeen minutes above Mt. Kilimanjaro's 19,710 feet mountain top as the crew watched it through binoculars. Then the craft rose higher to 40,000 feet, paused and kept rising vertically until it was out of sight.

June 19, 1951, Sonderborg, Denmark — A mechanic heard a whistling sound and saw a craft land in a meadow. He approached the object to within 150 feet and found himself paralyzed. He also noticed the birds stopped singing and the cows weren't moving either. Four brown-skinned men emerged from the craft wearing black shiny suits and see-through helmets. Eight smaller objects also came out of the craft and hovered above it. The men seemed to make repairs on the craft's deck. Then the machine flew up to about 300 feet, hesitated, and then rose rapidly out of sight. Only then could the mechanic move again.

1952

March — USAF Captain Edward Ruppelt had quietly continued Project GRUDGE investigations after its official demise. Then, in March 1952, the Air Force changed GRUDGE to a more public Project BLUE BOOK which again emphasized natural explanations for the public, while the genuine and secret analyses of photographs, films, drawings and eyewitness interviews from around the world were carried out by secret intelligence units.

June 21, Oak Ridge Laboratory, Tennessee — Operated by the Atomic Energy Commission and so sensitive that air traffic above the lab was prohibited. However, a Ground Observer Corps (GOC) spotter reported a slow-moving light over the lab. An F-47 on combat air patrol followed the light between 10,000 and 27,000 feet. The pilot said he could not see any silhouette around the white light which he estimated to be six to eight inches in diameter and blinked on and off. At times, the light would go steady as if increasing in power and come straight at the F-47, reminiscent of the Gorman case over Fargo, North Dakota in 1948.

July 2, Tremonton, Utah — Naval Chief Warrant Officer Delbert C. Newhouse, his wife and two children were driving on a highway near Tremonton around 11 AM when they saw a dozen objects moving in the sky. Newhouse was an experienced photographer who had worked more than a thousand hours on aerial photograph missions and twenty-two hundred hours as chief photographer.

He had a Bell and Howell 16mm movie camera in his car trunk. Using a three-inch telescopic lens, he shot about 40 feet of color film of the aerial objects before they disappeared. He described them as flat and circular "like two pie pans, one inverted on top of the other."

The public side of the Air Force's Project BLUE BOOK reported the objects were probably "a flock of birds." Meanwhile, the Naval Photographic Interpretation Laboratory was conducting a frame-by-frame evaluation. After studying the film for a total of one thousand hours, Naval analysts concluded that the objects glowed, were under intelligent control, and were not birds, balloons, or aircraft.

In 1976, the Tremonton film was subjected to computer image processing by a civilian group known as Ground Saucer Watch (GSW). The UFOs were calculated to be about five to seven miles from the observer; were 50-foot diameter discs that were thicker in the middle than at the edges; and traveled in a controlled formation.

July 19-20, Washington, D. C. — Between 11:40 PM on the 19th and 5 AM on the 20th, two radarscopes at Washington National Airport picked up eight unidentified targets moving 100 to 300 mph and violating the restricted air space above the White House and the Capitol. Erratically, the objects would suddenly accelerate at high speeds and stop in the air. Numerous airline crews also reported strange lights that moved up, down and sideways which correlated with erratically moving radar blips.

Radar controllers at Andrews AFB also tracked the unidentified targets and at one point visually saw a huge, fiery red-orange sphere. Jet fighters arrived around 3:30 AM and the UFOs disappeared, only to reappear after the jets left.

The same thing happened one week later over the Capitol at 9 PM on July 26, 1952. Four to twelve UFOs were tracked on radar at various times. Into the next day, July 27, at 2 AM, USAF interceptors were scrambled. Although the UFOs had been present for several hours, they disappeared just as the two jets appeared on the radar screens. After about ten minutes, the aircraft were sent back to Wilmington, Delaware. At the exact moment the interceptors disappeared from the radarscopes, the UFOs reappeared.

At 3 AM, more jet interceptors took off from Wilmington. About twenty minutes later, Washington radar operators had them on their scopes. This time the UFOs remained visible on radar as well. One of the pilots said the blue-white lights were extremely bright as they formed a ring around him. The frightened pilot asked what he should do, but the radar control room had no answer. Then the lights moved away. Unidentified targets were tracked on radar until dawn.

On July 28, 1952, the New York Times headlined "'Objects' Outstrip Jets Over Capital – Spotted Second Time in Week by Radar, but Interceptors Fail to Make Contact."

Under pressure from the news media, the Air Force held a press conference on July 29, 1952. Major General John Samford, Chief of Air Force Intelligence, explained that the unknown targets observed over Washington were the result of "temperature inversions." The media accepted that government explanation without much criticism. But the press was not told that the chief radar controller confirmed the UFOs made strong and bright radar blips consistent with solid moving objects, not the diffuse and shapeless blobs produced by temperature inversions.

Later, Project BLUE BOOK's spokesman, Albert Chop, who had been an eyewitness during the Washington UFO flyovers, also rejected the temperature inversion explanation. Further, in contradiction to Major General Samford, Project BLUE BOOK classified the objects as "unknown."

September 24, Cuba — A Navy pilot was making practice passes for night fighters when he saw an unusual orange light. Immediately after he landed, he filed this report:

"As the light approached the city from the east, it started a left turn. I started to intercept. During the first part of the chase, the closest I got to the light was 8 to 10 miles. At this time, it appeared to be as large as an SNJ and had a greenish tail that looked to be five to six times as long as the light's diameter. This tail was seen several times in the next ten minutes in periods of (about) 5 to 30 seconds each. As I reached 10,000 feet, it appeared to be at 15,000 feet and in a left turn. It took 40 degrees of bank to keep the nose of my plane on the light. At this time, I estimated the light to be in a 10 to 15 mile orbit.

"At 12,000 feet I stopped climbing, but the light was still climbing faster than I was. I then reversed my turn from left to right and the light also reversed. As I was not gaining distance, I held a steady course south trying to estimate a perpendicular between the light and myself. The light was moving north, so I turned north. As I turned, the light appeared to move west, then south over the base. I again tried to intercept, but the light appeared to climb rapidly at a 60-degree angle. It climbed to 35,000 feet, then started a rapid descent.

"Prior to this, while the light was still at approximately 15,000 feet, I deliberately placed it between the moon and myself three times to try to identify a solid body. I and my two crewmen all had a good view of the light as it passed the moon. We could see no solid body. We considered the fact that it might be an aerologist's balloon, but we did not see a silhouette. Also, we would have rapidly caught up with and passed a balloon.

"During its descent, the light appeared to slow down at about 10,000 feet, at which time I made three runs

on it. Two were on a 90-degree collision course and the light traveled at tremendous speed across my bow. On the third run, I was so close that the light blanked out the airfield below me. Suddenly it started a dive and I followed, losing it at 1,500 feet."

November 2, New Mexico and Arizona — During 1952, many airmen and scientists saw mysterious, bright green fireballs light up night skies, continuing a trend that had begun in 1948 when green fireballs were reported throughout the southwestern United States, extended to the eastern U. S. in 1950, and seemed concentrated again in New Mexico and Arizona in 1951 and following years.

On November 2, 1952, a green ball larger and brighter than a full moon "exploded in a tremendous paroxysm of light, with no sound" over New Mexico. Dr. Lincoln La Paz, a world authority on meteorites and Director of the University of New Mexico's Institute of Meteoritics, had been consulting with intelligence officers at Kirtland AFB about what the green fireballs might be. Back at Wright-Patterson AFB in Ohio, ATIC's main interest was to see if the green fireballs were focused most in New Mexico where many of America's most sensitive radar and missile testing facilities were. ATIC also wanted to know if the green fireballs had something to do with the UFOB phenomenon.

Dr. La Paz said the green fireballs were not electrostatic phenomena and were not meteorites because the trajectory was too flat, the color was too green and he couldn't find any fragments on the ground, even though he had found spots where the trajectory should have hit the earth if they were meteorites.

November 4, Washington, D. C. — President Harry S. Truman abolished the Armed Forces Security Agency (AFS) and created the National Security Agency (NSA). NSA reports to the Secretary of Defense who sits on the National Security Council (NSC). The Central Intelligence Agency (CIA) serves the NSC. Some government insiders assert that Truman's Majestic-12 Special Studies Group and its successors over the years have reported about disc and extraterrestrial biological entities directly to the National Security Council, or some related subsection of officials who are not elected or appointed and who have more permanent, classified continuity.

December 10, Richland, Washington — At the Atomic Energy Commission's Hanford nuclear plant, a pilot of a patrolling F-94 spotted a light while flying at 26,000 feet, but ground radar saw nothing. The pilot closed on the object which he described as a large, round, white "thing" with a dim reddish light coming from two "windows." After the pilot lost visual contact, he got a radar lock-on. When the F-94 attempted to close on the object again, it would reverse direction and dive away. Several times the jet altered course because collision with the round light seemed imminent.

1953

January — A small group of five eminent scientists were brought together by the Central Intelligence Agency (CIA) to study UFO reports and to determine whether the phenomenon was a threat to U. S. national security.

The Robertson Panel was named after its chairman, H. P. Robertson. A mathematician and physicist, Robertson was also Director of the Weapons System Evaluation Group in the Office of the Secretary of Defense and was on the CIA payroll. Other Robertson Panel members included physicist and Noble Prize-winner Luis W. Alvarez; geophysicist and radar specialist Lloyd F. Berkner, who was one of the directors of the Brookhaven National Laboratories in Long Island, New York; physicist Samuel Goudsmit, who was on the Brookhaven Lab staff; and astronomer and astrophysicist Thornton Page, who was Deputy Director of the Johns Hopkins University Operations Research Office.

In addition to the five panel members, other unofficial participants included astronomer J. Allen Hynek, who was a consultant to the USAF; army ordnance test station director Frederick C. Durant, who served as reporter for the panel; and Commanding General of the Air Technical Intelligence Center (ATIC), William M. Garland.

The CIA was represented by Asst. Dir. of the Office of Scientific Intelligence (OSI) H. Marshall Chadwell, Deputy Assistant Director of the OSI Ralph L. Clark and CIA agent Philip G. Strong. Also present were Air Force officers Edward Ruppelt and Dewey Fournet and Navy Photo Interpretation Laboratory representatives R. S. Neasham and Harry Woo.

Over three days, the panel examined selected cases from Project BLUE BOOK files and screened the 1952 Tremonton, Utah and 1950 Great Falls, Montana 16mm films of aerial discs. On the fourth day, the five scientists discussed tentative conclusions and recommendations and commissioned Robertson to draft a report which they edited.

The panel concluded that there was no evidence of a direct physical threat to national security and that the "continued emphasis on the reporting of these phenomena, in these parlous times, results in a threat to the orderly functioning of the protective organs of the body politic." The Robertson Panel therefore recommended:

"a. That the national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired; and

"b. That the national security agencies institute policies on intelligence, training and public education designed to prepare the material defenses and the morale of the country to recognize most promptly and to react most effectively to true indications of hostile intent or action."

The panel proposed a public education program to train people to identify correctly-known objects and suggested that the Air Force continue BLUE BOOK with an emphasis on convincing the public there was nothing unusual in the skies.

Astronomer J. Allen Hynek, not officially a panel member, was not asked to sign the report with which he disagreed anyway. He thought it unreasonable to write a conclusion about UFOs in four days when he himself had spent more than four years in the field and did not understand the phenomenon. Sixteen years later in December 1974, the CIA finally declassified the report and made copies available.

November 23, Lake Superior, Michigan — An F-89 jet from Kinross AFB in Michigan was asked to investigate an unidentified radar blip. As Air Defense operators watched their radar scopes, the UFO blip suddenly merged with the F-89 blip.

A USAF report said, "The plane was followed by radar until it merged with an object 70 miles off Keweenaw Point in upper Michigan. Kinross AFB spokesmen said the missing plane was equipped with two rubber rafts and that each officer wore a life jacket. One official said, "It seems incredible, but the blip apparently just swallowed our F-89. ...No trace was ever found of the missing men, the F-89 or the UFO." Even the Chicago Tribune headlined "Jet, Two Aboard, Vanishes Over Lake Superior."

1955

August 21, Hopkinsville, Kentucky — At about 7 PM, teenager Billy Ray Sutton told his family he watched a large, bright object land a few hundred feet from the well outside the house. About an hour later, a dog started barking. The family saw a creature about four feet tall with long arms raised over its round head. Its ears were enormous and pointed. The eyes were large, round and glowing yellow.

When the creature was about twenty feet away, two of the men shot at it with a gun. Seemingly unharmed, the creature turned over in a somersault and ran off. Then a second creature appeared at a window. One of the men shot right through the screen and assumed a direct hit. But when he went out to see if the creature was dead, a claw-like hand reached down at him from the roof. Another entity was on a tree branch. The men fired at both creatures. The bullets seemed to ricochet off as if the creatures were covered with invisible armor. The creature in the tree floated to the ground and ran away.

At about 11 PM, the frightened family left the house and drove in panic to the Hopkinsville police station. State, county and city police drove to the farmhouse. On the way, one of the officers saw what he later described as a strange shower of meteors coming from the direction of the Sutton homestead and two passed overhead with a loud swishing sound. At the farmhouse, the police could not find any humanoids or landed craft.

This case was classified as unidentified by Project BLUE BOOK.

1956

April 8, Elboeuf, France — Two brothers and three other witnesses saw an aerial object about twenty-five feet in diameter that glowed yellow-orange with a red dome and rotating fins underneath. The red ball came down from the sky and hovered at tree height and then left at high speed.

July 20, Panorama City, California — Three witnesses described a huge, ball-shaped object. Out of it came three beings nearly seven feet tall. Each had long, blond hair and wore tight, green suits.

1957

July 30, Galt, Ontario, Canada — A man saw a flash of light in the sky and a circular object making a whirring sound landed surrounded by "flames." The disc appeared to have a spinning outer section that moved around a stationary central dome. After thirty minutes, the disc took off leaving the ground blackened and branches broken.

September 14, Ubatuba, Sau Palo, Brazil — Eyewitnesses saw a "flying disc" explode into thousands of fiery fragments which fell onto the beach and sea. The metal tested as nearly 100% pure magnesium and was 6.7% heavier than ordinary pure magnesium. Former NASA scientist Paul Hill calculated that the density anomaly could be explained if the metal were the pure isotope ²⁶Magnesium not found naturally on earth.

October 15, Francisco de Sales, Brazil — Antonio Villas Boas, a 23-year-old farmer was plowing with his tractor at 1 AM. He saw a "red star in the sky" that became "a very luminous, egg-shaped object, flying towards me at a terrific speed. ...Then it began to drop towards the ground very slowly. ...it was a strange machine, rather rounded in shape and surrounded by little purplish lights and with an enormous red headlight in front..." The deposition by Boas given to journalist Joao Martins was translated by Gordon Creighton, Editor of Flying Saucer Review in England. "I could see the shape of the machine clearly, which was like a large elongated egg with three metal spurs in front (one in the middle and one on each side). They were three metal shafts, thick at the bases and pointed at the tips. I could not distinguish their colour, for they were enveloped by a powerful reddish phosphorescence (or fluorescent light, like that of a luminous sign) of the same shade as the front headlight. On the upper part of the machine there was something which was revolving at great speed and also giving off a powerful fluorescent reddish light. At the moment when the machine reduced speed to land, this light changed to a greenish colour, which corresponded to a diminution in the speed of rotation of that revolving part, which at this point seemed to be taking on the shape of a round dish or a flattened cupola" that never stopped turning even when the craft was still.

This early abduction case was also detailed Boas's encounters with beings which took him into the disc where the agenda was to make Boas have sexual intercourse with a female. "Her hair was fair, almost white (like hair bleached with peroxide), smooth, not very abundant, reaching to half way down her neck and with the ends curling inwards; and parted in the centre. Her eyes were large and blue, more elongated than round, being slanted outwards." After the intercourse, Boas said, "That was what they wanted of me — a good stallion to improve their own stock."

November — After the launch of the Russian Sputnik satellites in October 1957, disc sightings increased worldwide. The U. S. Army even admitted that a huge, oval object 'nearly as bright as the sun' was spotted on November 3 at White Sands Missile Range, New Mexico. The bright oval hovered near bunkers used in the first atom bomb explosion on July 16, 1945. Two different military police patrols saw the bright object. Two days later at 5:21 AM on November 5, the U.S. Coast Guard cutter Sebago in the Gulf of Mexico reported a bright light that circled above the ship at speeds up to 1,000 mph. The object was tracked on the ship's radar for twenty-seven minutes.

Reports of unusual aerial craft also came from Australia, France, Great Britain, Egypt, Japan and other countries.

1958

January 16, Trindade Island, Brazil — The Brazilian Navy training ship, Almirante Saldanha, had been converted into a floating laboratory to carry out research for the International Geophysical Year (IGY). The ship was preparing to leave Trindade Island on its return trip to Rio de Janeiro on January 16, 1958. On board was a civilian group of submarine explorers, including professional marine photographer Almiro Barauna.

Around noon, a disk was seen in the sky and one of the crew yelled, "Flying saucer!" Barauna photographed while a hundred officers and crewmen on deck watched the glowing, flattened sphere. Its center was encircled by a large ring or platform similar in shape to the planet Saturn. Barauna took six shots of the craft as it moved back and forth by a nearby mountain for about twenty seconds. Then the craft sped away and disappeared in the distance. Barauna developed the film in a dark room on board. Four of the six exposures showed the strange aerial disc.

When Barauna reached Rio de Janeiro, he made prints and turned them over, together with the negatives, to the Brazilian Navy. They were analyzed by both the Navy Photo Reconnaissance Laboratory and the Cruzeiro do Sul Aero-photogrammetric Service, both of which agreed the photographs were authentic.

For several weeks, the incident was kept secret. However, when the prints were taken to the President of Brazil, he released them to the public personally vouching for their authenticity. They were published in Brazilian newspapers on February 21, 1958, five weeks after they had been taken. But, when the pictures were televised in the United States, USAF investigators declared them to be fakes. That public dismissal was consistent with Majestic-12's official policy of cover-up and denial of an extraterrestrial presence in the interest of maintaining United States national security.

1959

January, Stratford-on-Avon, England — Flying Saucer Review reported that a man watched a fiery, round object come out of the sky and land about three hundred feet away. While a blue haze formed, three figures emerged from the round craft and moved clumsily. The eyewitness said he was unable to move until the craft and its occupants took off again rapidly leaving a glittering trail.

May 20, Tres Lomas, Argentina — Two hunters saw a silver-colored, disc-shaped object with a dome on top resting on the ground about 450 feet away. After it took off, the grass was flattened.

June 26, Boianai, Papua, New Guinea — Many mysterious sky craft had been seen over Papua in 1959. Reverend William Booth Gill, an Anglican priest and graduate of Brisbane University, was in charge of the Boianai mission station. Rev. Gill was looking at the planet Venus around 6:45 PM and saw another sparkling object that moved toward him. He yelled and thirty-seven other people at the mission joined Gill to watch the round UFO. The glowing craft came down to about 500 feet and the eyewitnesses could see its large base and a smaller "upper deck." Four legs protruded from the base and a thin shaft of blue light occasionally beamed upward from the center of the upper deck at a 45 degree angle. Four "men" appeared to be working outside on top of the craft.

At 7:20 PM, the UFO rose through the cloud covering which Gill estimated to be about 2,000 feet. An hour later, the round machine reappeared and descended again. This time, it hovered at a slightly lower altitude. Three more discs appeared, moving up and down through the clouds. The first object, which Gill called the "mother ship," remained stationary for a short time before moving through the clouds and out to sea.

he next night at about 6 PM in a twilight sky, the craft came back and repeated their odd maneuvers. This time the larger disc descended to an altitude of about 400 feet. Two smaller discs remained above. Noticing that one of the occupants seemed to be staring down, Rev. Gill waved. To everyone's amazement, the figure waved back. A Papuan worker waved his arms. Two figures on the craft each raised their arms. Gill used a flashlight to send signals to the humanoids and saw the craft swing back and forth as if in reply. At 6:30 PM, Gill went to dinner. A half-hour later, the large craft was still there, but the smaller discs had disappeared. All the observers went to church for evening services.

The third night on June 28, only one object hovered at low altitude and no crew members were seen.

1960

April 8, Ithaca, New York and Green Bank, West Virginia — Astronomer Frank Drake at Cornell University created and directed Project Ozma, the earliest effort in the Search for Extraterrestrial Intelligence (SETI). Radio telescopes at the National Radio Astronomy Observatory at Green Bank, West Virginia were aimed at Tau Ceti and Epsilon Eridani. Those two yellow sequence stars both lie within eleven light years of our solar system and resemble our own sun in age and type. Thus, the greater likelihood those suns might have planets like our own solar system.

When the receiver was first focused on Epsilon Eridani, a very strong signal was detected. There was great excitement in the control room. However, the mysterious pulse was later attributed by government officials to an Earth-based signal related to a secret military experiment. Or was that more calculated intelligence misinformation? That suspicion was raised by UFO investigators when Project Ozma was ended only three months later in July 1960. Later, Dr. Drake collaborated with Green Bank Observatory Director, Otto Struve, to announce the "Green Bank Formula":

This equation purports to yield the number N of technically advanced civilizations in the Milky Way Galaxy as a function of other astronomical, biological and psychological factors. If it is assumed that one percent of civilizations learn to live with the technology of mass destruction and themselves, then $N = 1,000,000$ planets and the nearest advanced civilization would be on average a few hundred light-years away from earth.

September 23, Labrador — A Canadian ship reported that a cylindrical object with lighted portholes flew from the sky to the ocean surface and then descended straight down into the water off Labrador's north coast.

November 13, La Londe, France — A man woke up when a green light brightened his bedroom. He went to the window and saw a bright, round object about 18 feet in diameter at the railroad tracks 900 feet away. The craft was on tripod legs and emitted orange flashes. A dome on top started spinning, the tripod retracted and the round object rose silently straight up above the trees and sped out of sight.

1961

Washington, D. C., Pentagon — Lt. Col. Philip J. Corso was assigned to be Chief of the Army's Foreign Technology Division in 1961 under the direction of General Arthur Trudeau, Head of Army Research and Development in the Pentagon. In his 1997 book *The Day After Roswell*, Lt. Col. Corso described how General Trudeau ordered him to take unknown technologies that had been retrieved from extraterrestrial craft and stored in Pentagon file cabinets and to get those technologies into U. S. aerospace and other

private industry research and development. The goal, General Trudeau said, was to keep the advanced technologies out of the hands of Cold War enemies and all the spies that had infiltrated the Central Intelligence Agency.

On Page 115, Col. Corso states:

"Among the Roswell artifacts and questions and issues that arose from the Roswell crash, on my preliminary list that needed resolution for development scheduling or simple inquiries to our military scientific community were:

Image intensifiers, which ultimately became 'night vision'
Fiber optics
Supertenacity fibers
Lasers
Molecular alignment metallic alloys
Integrated circuits and microminiaturization of logic boards
HARP (High Altitude Research Project)
Project Horizon (moon base)
Portable atomic generators (ion propulsion drive)
Irradiated food
"Third brain" guidance systems (EBE headbands)
Particle beams ("Star Wars" antimissile energy weapons)
Electromagnetic propulsion systems
Depleted uranium projectiles"

Continuing on Page 116, Col. Corso wrote: "General Trudeau also had relationships with the army contractors who were developing new weapons systems for the military within one part of the company while another part was harvesting some of the same technology for consumer products development. These were (such) companies (as) — Bell Labs, IBM, Monsanto, Dow, General Electric and Hughes — that General Trudeau wanted to talk to about the list of technological products that we'd compiled from our R&D Roswell file."

September 19 — Betty and Barney Hill were driving toward their home in Portsmouth, New Hampshire from Canada through the White Mountains after a vacation. Betty noticed a light in the sky that was big, bright and moving. She looked at it through binoculars and saw a disc from which "slowly, a red light came out on the left side of the object, followed by a similar one on the right."

Barney Hill stopped the car, took the binoculars and got out to look at the "large glowing pancake ... as wide in diameter as the distance between three telephone poles along the road," as Barney later described it. He could see multi-colored lights around the periphery that changed to white. The craft swung in a silent arc directly across the road, not more than a hundred feet from him." He could see a double row of windows. "Behind the clearly structured windows, he could see the figures, at least half a dozen living beings. They seemed to be bracing themselves against the transparent windows, as the craft tilted down toward (Barney's) direction. They were, as a group, staring directly at (Barney.) He became vaguely aware that they were wearing uniforms."

Barney sharpened the focus of the binoculars on one face and saw eyes he had never seen before that terrified him. He ran back to the car and drove away in a panic. "Suddenly a strange electronic-sounding beeping was heard. The car seemed to vibrate with it. It was in irregular rhythm — beep, beep — beep, beep, beep — seeming to come from behind the car in the direction of the trunk. ...(Betty and Barney) each began to feel an odd tingling drowsiness came over them."

When the couple next became conscious, they were still driving in the car but now it was dawn near

Concord and both their wrist watches had stopped running. They were two hours behind schedule and had no idea what happened.

The following day, Barney felt an unexplained soreness on the back of his neck and noticed that his shoes had become scuffed on the tops of the toes. Later, Barney found a ring of warts around his penis and testicles. Betty discovered round, shiny spots on the paint of the car's trunk.

Ten days later, Betty began to have a series of vivid dreams in which she and Barney were taken aboard a flying saucer and medically examined by beings: "Most of the (beings) are my height ... about five feet to five feet four inches. Their chests are larger than ours; their noses were larger (longer) than the average size although I have seen people with noses like theirs — like Jimmy Durante.

"Their complexions were of a gray tone; like a gray paint with a black base; their lips were of a bluish tint. Hair and eyes were very dark, possibly black. The dreams continued for five successive nights."

Betty was obsessed about being exposed to radiation and contacted Pease AFB in Portsmouth, a SAC installation that had received many UFO reports in 1961. The Hills story began to seep out and eventually UFO investigators suggested that the Hills try hypnosis to find out what happened during those two missing hours.

1962

June 26, Verona, Italy — A family of three watched a silver disc the size of a full moon maneuver in the sky near Santa Anastasia church. Later that night, one of them was awakened by intense cold and green light in the room. In the window was a translucent, but sharply defined humanoid body that had a huge, hairless head. The eyewitness screamed and the entity shrank and vanished "like a TV image when one turns off the set."

August 20, Duas Pontes, Brazil — A man told police he saw two spherical objects hovering six feet above ground a few meters from his house. One disc was black with an antenna and a small tail. The other disc was black and white. Both emitted a humming sound and what looked like flickering fire through an opening. The two spheres merged into one, raising dust from the ground while an acrid-smelling yellow mist spread out and enveloped the man. Then the merged craft vanished.

1963

January 4, Rome, Italy — A well-known psychiatrist saw an object on the ground in a deserted city park. It was a fifteen foot-long cylinder with a dome on top and a thick ring surrounded the cylinder. Along the side were a series of round apertures. The cylinder was about three feet above the ground supported on tripod legs. Suddenly the ring started spinning rapidly and a gust of air was felt as the craft rose a few feet above ground and then disappeared in a split second.

February 20, Lecce, Italy — A young man watched through binoculars as a disc spun slowly and almost stationary about fifteen hundred feet from him. The disc had a central upper dome that glowed brighter than the craft's overall yellow-red halo. The eyewitness saw a "particle" (possibly smaller craft) leave the disc, after which the craft stopped spinning, gained altitude with a vertical shifting and left toward the northeast.

March 13, Richards Bay, South Africa — Fred White was fishing when he heard a high-pitched whine coming from the east and saw an object come in his direction and land about 50 feet away, scattering sand. It was at least 60 feet in diameter and was shaped like two plates glued together. Through several oval portholes, White could see light inside. A man with a fair complexion, wearing a metallic helmet, looked at the witness. He wore a sky-blue, one-piece coverall with no visible buttons or fasteners and his hands were covered by shiny mesh gloves. About six minutes later, the craft took off in a gust of warm air and caused static on White's radio.

December — Betty Hill accompanied her husband, Barney, on his first visit to eminent Boston psychiatrist, Dr. Benjamin Simon. It quickly became apparent to Simon that both Barney and Betty needed treatment. There followed a series of visits during which husband and wife independently underwent hypnotic regressions. Separately, each recounted a story of being taken aboard a spacecraft shortly after the first set of beeps.

Barney had kept his eyes closed during most of the experience, but Betty recalled seeing his feet dragging over the ground as the beings took them into the disc. That explained his scuffed shoe tops. The couple said the large-eyed humanoid aliens communicated telepathically. In Betty's repeated dreams right after the encounter, she remembered a huge "Jimmy Durante" nose on one or more of the beings. But the hypnosis description did not emphasize a large nose. Betty remembered the mouth was a straight slit.

The Hills were given medical examinations in separate rooms. At one point, Barney was aware of a circular instrument placed around his groin which seemed to connect to the ring of warts that had grown around his genitals. During Betty's examination, a long needle was inserted in her navel. She was told it was a pregnancy test. Amniocentesis was not widely used until the mid to late 1960s

Afterwards, she was shown a "star map" of glowing dots joined by lines which the "alien leader" said were travel and trade routes. Betty said the beings insisted she would not remember her experience, but she was determined that she would. The couple were returned to their car, the craft increased in brilliance and resembled a glowing orange ball as it left.

Most of the details of Barney's experience were described in Betty's account, but her account contained many details not included in Barney's. Dr. Simon's opinion was that the couple "had suffered severe anxiety reactions after an experience with a UFO" and the Hills' medical insurance claim was paid based on Dr. Simon's assessment.

1964

April 24, Socorro, New Mexico — Deputy Marshal Lonnie Zamora was chasing a speeding motorist on the outskirts of town at approximately 5:45 PM. Suddenly, he heard a roar and saw a blue and orange flame in the sky about a mile to the southwest. Zamora turned his patrol car toward the "fire" and drove over rough terrain. He got within 800 feet of an object that was a metallic shiny-white and looked like an egg standing up vertically. At first, Zamora thought the object was a crashed car standing on end. Then, he noticed two small people in white coveralls beside the object.

Zamora drove forward to about 100 feet from the object. The white-suited figures were no longer visible. As he stepped out of his car and walked toward the "egg," he could see that it was standing on legs. Zamora could see a red colored insignia on the side of the craft that was about 2 1/2 feet wide composed of an arrow tip pointed straight up inside an arc placed slightly above a horizontal straight line. Suddenly, there was a loud roar and Zamora ran to take cover behind his car. The craft began to rise slowly, emitting a light-blue and orange flame. Zamora kept on running away until the roar stopped. When he turned around, the white "egg" was rising slowly and then moved with great speed into the distance.

Zamora was joined by Sergeant Sam Chavez. They examined the site and found burned brush and four depressions in the ground considered to have been made by landing pads. The case was investigated by numerous civilian organizations, journalists, the US Air Force and an agent from the FBI who was in Chavez's office at the time.

Astronomer J. Allen Hynek investigated in his official capacity as consultant to the Air Force. He told the news media it was one of the best substantiated reports. Hynek also told Project BLUE BOOK Major Hector Quintanilla that UFO organizations might use the case to obtain a long-sought Congressional investigation of the UFO situation. Quintanilla contacted the National Aeronautics and Space

Administration (NASA), the Jet Propulsion Laboratory (JPL) and fifteen industrial firms to find out if they were conducting any experiments with lunar landers near Socorro. The reply in each case was negative. This landing, trace and entity case was listed as "unidentified" in BLUE BOOK files.

According to Air Force Office of Special Investigations (AFOSI) Special Agent Richard C. Doty, the "egg-shaped" craft that Lonnie Zamora saw was an "extraterrestrial biological entity" or EBEN vehicle on its way to an official meeting arranged through the MJ-12 group. Doty told me on April 9, 1983 at the AFOSI office inside Kirtland AFB in Albuquerque, New Mexico:

"Remember Lonnie Zamora? (The craft) came down around 6 PM on April 24, 1964, right? Well, it was a mistake. We, or they ... someone blew the time and coordinates. That was an advance military scout ship. We got it corrected and they came back to where they were supposed to be at Holloman AFB the next morning at 6 AM, April 25, 1964." Later, I also learned that the meeting between U. S. officials and Ebens who came in three egg-shaped discs took place east of the Trinity Site (first atomic bomb explosion) near Red Canyon in the northeast corner of the White Sands Missile Range. At this meeting, other sources who have seen 16mm film of the event say there was also a being who had a very large Arabic-style nose, wore Egyptian-looking armor and a high-peaked helmet and who stood silently behind the Ebens holding a rod in its left hand.

"After the Ebens landed in one of their egg-shaped ships, they had devices that looked like large wands. A wand was handed to our commander. When he spoke into the wand, the Eben language came out in another wand held by one of the Ebens. When the Eben spoke into his wand, English words came out of the and the commander was holding, sort of like a loud speaker."

1965

January 11, Washington, D. C. — Six Army Signal Corps engineers stood at windows in the Munitions Building in downtown Washington and watched discs zigzag across the sky toward the Capitol. Suddenly, two delta-wing jets appeared and raced toward the UFOs which took off leaving the jets far behind them. When news reporters tried to follow up on the story, they were told by the Defense Department and by military officials that the incident had never happened.

November 9, New York City, N. Y. — After the great power blackout, actor Stuart Whitman told people he was startled to hear a whistling sound outside his 12th floor window and saw two hovering objects that glowed. One was orange and the other blue. He then heard inside his mind, apparently telepathically, words that indicated the blackout was a "demonstration."

1966

January 19, Horseshoe Lagoon, Australia — A farmer was driving his tractor when he heard a high-pitched sound and saw a gray-blue craft about 25 feet in diameter and about nine feet high rise out of the lagoon. The craft was spinning like a top, rose to sixty feet and then flew off rapidly. The farmer found flattened reeds in several places at the lagoon.

March 20, Milan, Michigan — A police officer saw what he thought was a plane about to crash. He tried to contact police headquarters, but his radio transmitter would not work. As the object got close to his patrol car, the policeman could see it was a huge disk about fifty feet in diameter with a number of multi-colored lights spinning at the periphery. The disc kept pace with the patrol car for about half a mile and then flew off.

October, Boulder, Colorado — The U.S. Air Force entered into a formal agreement to study UFOs with the University of Colorado, having been turned down by the Massachusetts Institute of Technology, Harvard University, the University of North Carolina and the University of California. The project was to be directed by Edward Condon, a highly respected physicist. Although the Air Force's alleged goal was to

have an impartial investigation, Dr. Condon soon made his attitude clear: "It is my inclination right now to recommend that the government get out of this business. My attitude right now is that there's nothing to it ... but I'm not supposed to reach a conclusion for another year ..."

The situation was further aggravated when two of the Condon Committee members, David Saunders and Norman E. Levine, discovered a memorandum which had been written by Project Coordinator Robert Low almost three months before the start of the project. In it, Low seemed to be writing to an insider about a foregone conclusion the study would take.

"Our study would be conducted almost exclusively by non believers who, although they couldn't possibly prove a negative result, could and probably would add an impressive body of evidence that there is no reality to the observations. The trick would be, I think, to describe the project so that to the public, it would appear a totally objective study, but to the scientific community, would present the image of a group of non believers trying their best to be objective, but having an almost zero expectation of finding a saucer. One way to do this would be to stress investigation, not of the physical phenomena, but rather of the people who do the observing — the psychology and sociology of persons and groups who report seeing UFOs. If the emphasis were put here, rather than on examination of the old question of the physical reality of the saucer, I think the scientific community would quickly get the message ..."

Saunders and Levine sent a copy of the memo to Marine Corps Major Donald Keyhoe. Condon learned about the leak in February 1968 and immediately fired Saunders and Levine for insubordination. Two weeks later, Low's Administrative Assistant, Mary Louis Armstrong, resigned, stating that the project members had no confidence in Low's leadership. The National Investigations Committee on Aerial Phenomena (NICAP) and the Aerial Phenomena Research Organization (APRO) who had been cooperating with the Condon Committee withdrew their support.

By June 1968 when Condon's report was completed, the study's credibility was diminished. That might be the reason why Condon sent his report to the National Academy of Sciences (NAS) for review. After receiving their stamp of approval, the Condon Report was released to the public on January 1969.

"Nothing has come from the study of UFOs in the past 21 years that has added to scientific knowledge," the report concluded. "Careful consideration of the record as it is available to us leads us to conclude that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby."

Condon did not mention that more than 25% of the cases examined had remained unsolved. He ignored other contributors to the report who felt their was evidence to support at least an open minded consideration of the extraterrestrial hypothesis. If MJ-12's intention had been to use the Condon Committee to drive a final scientific nail of denial into the UFO mystery to get the public and media off the government's back, the ironic result was even more public controversy and distrust of government. The United States Air Force canceled Project BLUE BOOK in December 1969 and told the public and media it no longer investigated UFOs.

1967

January 25, South Ashburnham, Massachusetts — Betty Andreasson was at home with her family in the evening when a power failure occurred. In the dark, a glowing light was visible through the windows. Moments later, the house lights came on again and Andreasson saw that her family seemed to be frozen in place as if in suspended animation. She, however, was unaffected and watched as four creatures entered the house, passing right through a closed wooden door.

The entities were about 3 1/2 to 4 feet tall. Their heads were pear-shaped, large on top with narrow chins. They had holes for noses and scar-like slits for mouths. Their large almond-shaped eyes slanted around to the sides of their heads. Each sleeve of their dark blue, skintight uniforms had a symbol resembling a bird

with outstretched wings.

The leader began to converse telepathically with Andreasson. He gave her a thin, blue book in exchange for Betty's Bible. About the blue book, Betty said, "There is something there (on the cover). It's very thin. Thin gold. It just looks Egyptian. ...the first three pages were just white light — glowing. ...there is strange writing in it and numbers. ...It's mysterious because of the strangeness of it. ...(There's) a pyramid, but a strange-type pyramid. It has a chute on it, and it has an arrow, some type of an arrow. It's like takeoff things for airplanes..."

The beings took Andreasson outside to an oval craft. Once aboard, she was submitted to a frightening and painful physical examination. Then she was transported to an alien world of high strangeness in which her Catholic beliefs were provoked by 3-dimensional images, possibly holographic, of a spiritual nature and heard "the voice of God."

Andreasson was returned to her home where the members of her family remained frozen like statues. She went to bed and fell asleep while one of the entities watched over her. When she awakened the following morning, her family was up and going about its normal business. The glowing book given to Betty by the beings disappeared.

Two government insiders have told me about extraterrestrial technology referred to as the "Yellow Book." Their explanation for the name relates to the color of the glowing letters and words that appear on white, glowing pages. "...the letters and words look like yellow light. The book doesn't have any pages. It's a rectangle about fifteen inches by nineteen inches. If you saw it laying on a table, you would think it was a flat piece of plastic with a light grey metallic sheen. But when you pick it up in your hands, the words start appearing and they are a yellow color. You move your eyes along as the words appear and they just keep coming as you read. Once you get to the bottom, the next page starts. Followed by the next page, and the next page over and over on the same surface."

September 9, Alamosa, Colorado — An Appaloosa mare named Lady was found stripped of flesh from the neck up and her chest had been opened and internal organs excised. The cuts were bloodless. Rancher Berle Lewis and his wife Nellie said that when they searched the ground, Lady's tracks stopped about 100 feet southeast of her body. "It looked like she jumped around in a circle," Berle said. "But there was nothing else, no tracks of any kind between there and where we found her."

There were no tracks around Lady's body, but forty feet south of her was a broken bush. "Around the bush," said Berle, "was a three foot circle of six or eight holes in the ground about four inches across and three to four inches deep."

Late that summer there had been many reports in the San Luis Valley about strange lights in the sky. So, when the unusual death of the Colorado horse made national and international news, several headlines questioned whether the UFOs might be connected. And that's how the animal mutilation mystery began — and continues to date. It has haunted ranchers and law enforcement agencies throughout Canada, the United States, Puerto Rico, Mexico, Central and South America, Australia, the Canary Islands off the coast of Africa and parts of Europe.

That same autumn Lady died, there had been similar bizarre horse deaths reported in Canada. In August 1967, the Res Bureaux in Kingston, Ontario reported that on the Sarcee Reserve near Twin Bridges in Alberta, a dead horse was found where a witness claimed a "domed saucer craft" had been seen earlier that day.

Another aerial association with the animal mutilation mystery are dark, silent helicopters. Lou Girodo, Chief Investigator in the District Attorney's office in Trinidad, Colorado told me in October 1979 that he thought the helicopters were spacecraft piloted by creatures not from this planet which had technology that could camouflage their discs to look like our choppers. I have also been told by a confidential military source that certain frequencies are related to alien craft, that an agency in our government monitors those

frequencies, and when detected, teams of choppers, jets or vans equipped with radar and electronic gear are scrambled to interfere with and/or monitor alien activities.

Army Lt. Col. Philip J. Corso, now deceased, wrote on Pages 180-182 in his 1997 book *The Day After Roswell*:

"In the Pentagon from 1961 to 1963, I reviewed field reports from local and state police agencies about the discoveries of dead cattle whose carcasses looked as though they had been systematically mutilated and reports from people who claimed to have been abducted by aliens and experimented on. One of the common threads in these stories were reports by the self-described abductees of being subjected to some sort of probing or even a form of surgery with controlled, intense, pencil-thin beams of light" which Col. Corso associated with a laser instrument retrieved from downed spacecraft.

"...Local police reported that when veterinarians were called to the scene to examine the dead cattle left in fields, they often found evidence not just that the animal's blood had been drained but that entire organs were removed with such surgical skill that it couldn't have been the work of predators or vandals removing the organs for some depraved ritual.

"...I also remembered that both civilian and military intelligence personnel attached to the staffs of individuals who worked for the Hillenkoetter and Twining working group on UFOs in the 1950s were actively engaging in research into the kinds of surgical methods that would produce 'crime scene evidence' like this.

"...Although the first public reports of cattle mutilations surfaced around 1967 in Colorado, at the White House we were reading about the mutilation stories that had been kept out of press as far back as the middle 1950s, especially in the area around Colorado. ...Our intelligence organizations and especially the working group believed that the cattle mutilations that could not be obviously explained away as pranks, predators, or ritual slaughter were the results of interventions by extraterrestrials who were harvesting specific organs for experimentation.

"...We had irrefutable evidence that EBEs were landing on farms, harvesting vital organs from livestock, and then just leaving the carcasses on the ground because they knew we couldn't do anything about it."

December 3, Ashland, Nebraska — In the early morning hours, Patrolman Herbert Schirmer encountered a football-shaped craft on the ground supported on a tripod and emitting red lights. Schirmer remembered hearing a shrill beeping noise and seeing a red-orange beam when the object rose up, but he could not account for about twenty minutes of time. The case was studied by the Condon Committee which asked psychologist Dr. Leo Sprinkle to regress Schirmer hypnotically to penetrate the patrolman's amnesia.

Under hypnosis, Schirmer described seeing entities about four feet tall emerge from the craft. He tried to draw his revolver, but said telepathic communication from the beings stopped him. One held a "box-like thing" that emitted a green light or gas that covered the patrol car. Another entity touched his neck and caused pain. Later, Schirmer had a red welt on his neck. The entities telepathically communicated to Schirmer that their origin was a nearby galaxy beyond the Milky Way and they had several bases on Earth. Schirmer asked if the aliens kidnapped people and they told him they had a program known as "breeding analysis" and some humans had been used in those experiments.

1968 to 1972

This was a crescendo period of increasing worldwide reports of UFOs, orange glowing spheres seen over pastures where mutilated animals were found, human abductions and continuing government cover-ups. Some researchers recall the mid to late 1970s as the period when whatever is behind the UFO phenomenon turned the heat up in every direction between 1973 to 1979.

Sadly, abductee Barney Hill died in February 1969 at age 46 of a cerebral hemorrhage. And ironically, the U. S. Air Force terminated Project BLUE BOOK in December 1969 claiming falsely there was no official interest in the UFO phenomenon.

1973

May, Houston, Texas — In addition to their own physical examinations by non-human beings, some human abductees have also reported seeing earth animals in glass cages as if on display, or hooked up to tubes and machines as if being tested, or even subjected to excisions of the same body parts found missing in the worldwide animal mutilation phenomenon.

One such case began in May 1973. A family of five from a suburb outside Houston, Texas traveled together in a car. It was a clear night and they were on their way back home from playing bingo. Judy Doraty noticed a bright, blue-white light pacing the car. She pointed it out to her brother-in-law, her sister, her teenage daughter, Cindy, and her mother. Eventually, they stopped the car by the side of the road in farmland outside Houston to watch the light and Judy was the only person who got out of the car for a better look. When she got back in the car she felt nauseous and very thirsty.

When the family finally drove up to their relatives who had been baby-sitting, they were much later than expected and the light appeared there before everyone. Judy Doraty became hysterical. After that night, she suffered terrible headaches and vivid dreams that panicked her. Finally, she sought medical help in 1978. That led to hypnosis with a medical doctor to relieve her blocked memory about that disturbing night in May 1973. In the first session, Judy described seeing a small animal rising in a pale yellow beam of light into the sky. In further hypnosis sessions, Judy clarified that the animal was a brown and white calf. She also watched "two little men" that had "snake eyes" excise tissue from the calf's eye, tongue and testicles.

The beings communicated to her telepathically that they were "stationed here" and had been testing earth soil, water, vegetation and animal life for quite some time. Judy received information about nuclear testing in space and underwater and a consequential poisonous contamination of earth water. "...it affects the offspring and with each offspring they say (the changes from the contamination) get more prevalent."

Judy's teenage daughter, Cindy, had been terrified about the May 1973 night and had never wanted to talk about it with her mother. But finally seventeen years later on August 6, 1990, Cindy agreed to explore her own amnesia about the incident with hypnosis. She also recalled seeing a brown and white calf rise in a pale yellow beam of light into a disk-shaped object while a blue-white spotlight at the other end of the disc kept moving as if searching the ground. Like her mother, Cindy was taken aboard the craft and was examined by "bug-looking things" with large eyes "like a snake," meaning vertical slit pupils.

Cindy also recalled being shown a laboratory where animal parts such as a dog's snout, pig fetus, dead birds and a calf's tongue were lying on a table.

October 11, Pascagoula, Mississippi — Two shipyard workers, Charles Hickson and Calvin Parker, were night fishing off an abandoned pier on the Pascagoula River outside the city. Both heard a strange buzzing and looked up to see a large, glowing, bluish-white, egg-shaped craft hovering nearby. Terrified, the men watched as a part of the craft opened and three, five-foot-tall entities floated out toward Hickson and Parker. The skin was gray and wrinkled. Where humans would have noses and ears, these possible robots or androids had pointed projections. Each entity had a small opening like a mouth under its pointed "nose." There were no necks and the arms were extremely long ending in hands that resembled lobster claws or mittens. The legs extended straight down from the torso and ended in round "feet."

Two of the creatures took hold of Hickson under his arms while the other grabbed Parker who fainted. All of them floated into the "egg" where still-conscious Hickson was taken into a circular room that was very brightly lighted. He was "levitated" into a horizontal position in the air while a football-sized "eye" seemingly free-floating moved up and down his body as if giving him a physical examination. According

to Hickson, about half an hour later, both men were taken back out to the river bank, the "egg" left and Parker regained consciousness. Hickson and Parker called nearby Keesler Air Force Base and a local newspaper office, but were referred to the sheriff where they ended up around 10:30 PM. The sheriff later stated that something had happened to the two men because they were "scared to death and on the verge of a heart attack."

The following day, Hickson and Parker were interrogated and medically examined at Keesler AFB. The case was also investigated by J. Allen Hynek and University of California civil engineering professor, James Harder, who consulted to the Aerial Phenomena Research Organization (APRO). Calvin Parker was subsequently hospitalized for a nervous breakdown.

October 18, Mansfield, Ohio — During the height of the 1973 UFO flap throughout the U. S. and in Ohio — and only three days after the state's governor, John Gilligan, had seen a UFO near Ann Arbor, Michigan — a four-man Army Reserve helicopter crew encountered a UFO which seemed to exert control over their chopper.

Just after 11 PM on October 18, 1978, a Bell Helicopter UH-1H was traveling over the Mansfield area. Army Reserve crew members Sergeant Robert Yanacsek and Captain Lawrence Coyne saw a red light on the eastern horizon. The light seemed to be pacing them but within a short time came straight toward their helicopter. To avoid a collision, Coyne put the helicopter into a twenty-degree dive at 2,000 feet per minute.

As they reached 1,700 feet, the light was still heading straight for them. The crew braced themselves for impact. Just as the collision seemed imminent, the object stopped about 500 feet above the aircraft. Looking up through a stream of green light which flooded the bubble canopy of the helicopter, the crew saw a 60-foot-long object resembling a streamlined fat cigar. The front end of the UFO was a red light. At the rear was a green spotlight which had swung around to illuminate the helicopter. Between the lighted ends was a gray metallic hull which reflected the red and green lights. A dome protruded at the center. Copilot Arrigo Jezzi tried to make radio contact with an airport, but could not transmit or receive.

The crew felt a bounce and the UFO took off toward the west. As it changed its course to northwest, the green light turned to white. Then the object made a climbing turn and disappeared. Meanwhile, Coyne had caught sight of his altimeter. The needle was rising. All controls were set for a 20-degree dive, yet they had climbed from 1,700 to 3,500 feet with no power and were still climbing at 1,000 feet per minute. The crew felt no G-forces or other noticeable strains. Within six or seven minutes, radio contact was re-established.

1974

September 30 — Newsweek Magazine and other media reported increasing numbers of animal mutilations. "Since last May, more than 100 cattle have been found dead and gruesomely mutilated in Nebraska, Kansas and Iowa. ...A few residents report sighting strange creatures resembling bears and gorillas, and at least one farmer claims that a shiny UFO landed in a field where a slaughtered animal was later found."

In December 1974, one heifer was found dead and mutilated inside a perfect circle of exposed soil surrounded by snow near Kimball, Minnesota. There was not a single track around the animal, implying the heifer had been lowered from above onto the ground.

Cases had been increasing since the late 1960s and no one could understand what was happening. Healthy and alive one day, dead and mutilated the next. Cattle, horses, pigs, goats — even deer and elk. The animals all looked about the same. An ear missing, an eye missing, sometimes a circle of hide taken around the empty eye socket, one side of the lower jaw stripped of all flesh, the tongue cut out from deep within the throat, the sex organs removed in cookie cutter, hide-deep precision and the rectum cored out. No blood. No tracks.

1975

August 13, Alamogordo, New Mexico — Air Force Sergeant Charles L. Moody was in the desert observing a meteor shower at about 1:15 AM when he saw a glowing, metallic, disc-shaped object falling toward the ground about 300 feet away. The disc was about fifty feet long and eighteen to twenty feet wide. As it descended to an altitude of 15 to 20 feet, it wobbled on its own axis. Then it began moving slowly and steadily toward Moody. He jumped into his car, but was unable to start it. The UFO came to a stop about 70 feet away. Moody could hear a high-pitched humming sound. He noticed a rectangular window in the craft through which he could see shadows resembling human forms.

The humming stopped and his body became numb. The next thing he remembered was the object rose into the sky and disappeared. He was surprised when he got home that the time was 3:00 AM. He felt that he had somehow lost about one and a half hours.

The following day, Moody experienced a pain in his lower back. Within a few days, a rash broke out over his lower body. Upon the recommendation of a physician, he began to practice self-hypnosis in an effort to recall what had occurred during the lost time period. Over the next few weeks, he was able to piece together what might have happened.

After being overcome by numbness on August 13, 1975, he watched two beings approach his car. About six feet tall, the creatures wore skintight black clothing. Moody tried to fight them off, but passed out. He awoke on a smooth, flat surface inside the craft and could not move his legs. Next to him stood a humanoid that was shorter than Moody's two captors, only about five feet tall and dressed in silvery white, not black. However, like the other taller ones, he had a large hairless head, a protruding brow, large eyes, small ears and nose, and very thin lips. His skin was whitish-gray. This "leader" asked Moody telepathically if he was prepared to behave peacefully. When Moody agreed to do so, the leader applied a rod-like device to his back which relieved the paralysis.

Moody was taken to another part of the ship where he was shown the drive unit, a device consisting of a large rod surrounded by three glass-canopied holes. Each hole contained a central crystalline object with one rod on each side of it. One rod had a spherical head, while the other was topped by a T-bar.

As he moved about the craft, Moody noticed a sweet, stifling odor. He was told that the aliens' mother ship was situated miles away above Earth. He was promised a future meeting with the occupants, but warned that closer contact with humans would not be attempted for another twenty years. The aliens told Moody that he would have no recollection of the incident until about two weeks later. The leader placed his hands on the sides of Moody's head, rendering him unconscious once more. Moody awoke in his car as the UFO was leaving.

The case was investigated by the Aerial Phenomena Research Organization (APRO) and field investigator, USAF Lt. Col. Wendelle Stevens. An analysis of Moody's claims by Charles McQuiston, co-inventor of the Psychological Stress Evaluator, indicated that Moody was telling the truth.

August 20, Albany, New York — On the evening of August 20, 1975, telephones started ringing in Albany's police barracks, newspaper offices, radio and television stations. Startled citizens were reporting UFOs. State Trooper Michael Morgan was dispatched to the scene of one of the sightings. Upon his arrival, he met a police detective who was already observing a blimp-sized object hovering at five hundred feet over Lake Saratoga. As the reddish, glowing UFO flashed on and off, two smaller objects approached and merged with it. At this point, air traffic controllers at Albany airport were alerted and located the object on a radar scanner. After a few minutes, the two smaller objects broke away and left in the direction from which they had come. The first object moved towards the two nervous policemen and, as it passed over them, the police were dazzled by a brilliant white light shining out of the center of the craft's base. Silently, the craft turned and began to move away slowly.

Suddenly, the UFO disappeared. "It was as if," Morgan remarked, "someone had reached up and turned the lights out."

Meanwhile, the Albany tower operators had been following the movements of the UFO. After tracking the target for 45 minutes, they lost contact with it. However, within a short time, the tower received a call from the pilot of a military airplane flying over the Albany area at 8,000 feet. The pilot warned them that he had just seen a red "fireball" at one thousand feet above him headed toward the airport. The controllers located the object just as it entered the 50-mile range of one of their radarscopes. The anti-clutter device was thrown to ascertain whether or not the blip was an "angel." However, the image still came through clearly. The controllers estimated the object's speed to be 3,000 miles per hour.

About 5 miles outside Albany, the target vanished. The controllers surmised that it had either accelerated to a speed of 5,000 miles per hour or had executed a seemingly impossible vertical maneuver at high speed.

At the same time, large disks and bright lights were seen at a low altitude less than 50 miles north over the South Glens Falls area and as far north as Lake George. The case was investigated by Ernest Jahn who contacted the Smithsonian Institution in Cambridge. They were unable to give any explanation for the sightings. This is considered one of the better documented UFO cases because it involved civilians, police, the Federal Aviation Administration and military authorities and was confirmed by radar.

November 5, Snowflake, Arizona — Seven men ranging in age from seventeen to twenty-eight were thinning out scrub in the Sitgreaves National Forest, near Snowflake, Arizona, 156 miles northwest of Phoenix. At about 6 PM, the men stopped working and left for home. They had gone only about one hundred yards when a strange glow behind some trees caught their attention. Further down the road in a clearing, the group could see a "strange, golden metallic disc" hovering silently about ninety feet away and fifteen feet above the ground. The "golden machine was starkly outlined" against the sky and glowed with a milky yellow color.

Travis Walton later wrote, "I estimated the thing to have an overall diameter of fifteen or twenty feet and to be about eight or ten feet thick. The flattened disc had a shape like that of two gigantic pie pans placed lip to lip with a small round bowl turned down on top. We could see darker strips of a dull silver sheen that divided the glowing areas into panel-like sections. The dim yellowish light given off by the surface had the luster of hot metal.

"There was no visible antennae or protrusions of any kind. Nothing that resembled a hatch, ports or window structures could be seen. There was no motion and no sound from the craft. It almost appeared to be dead in the air."

The driver hit the break, but before the truck had come to a complete stop, Travis Walton jumped out and walked quickly into the clearing. As he stood there looking up at the smooth base of the disc, he could hear a beeping sound. Then the craft began to rumble. As the noise increased, the disc spun on its vertical axis. Walton took cover behind a log while the others shouted at him to get back in the truck. Walton stood up and suddenly a beam of greenish-blue light shot out of the base of the craft and struck Walton in his head and chest. His colleagues saw a bright flash surround his body which stiffened and shot straight up into the air with his head knocked back and his arms and legs extended. Then, Travis Walton was hurled backward onto the ground several feet away.

The terrified driver took off with the other men in the truck. About a quarter-mile down the road, they saw a flash of light shoot up above the trees and disappeared into the black sky. So the group decided they should go back. But neither Travis Walton nor the craft were at the clearing.

Finally, they went to the local sheriff's office to report what they had seen. An unsuccessful search was conducted and Walton's mother was told Travis had disappeared.

Then a week later on November 11, Walton's sister was stunned to hear her brother's voice on the phone. He said he was calling from a pay phone in the nearby town of Heber. His voice was weak. He asked his brother-in-law, Grant Neff, to come and get him. Neff and Walton's brother, Duane, found Walton slumped on the floor of the phone booth in a confused mental state. He was twelve miles from the place where he had disappeared.

Walton remembered being hit by the beam of light and passing out. He also remembered waking up in a low-ceilinged room. The air was hot and damp. Three entities about five feet tall with large, bald, domed heads and "white marshmallowy-looking flesh" were watching him. Although the creatures' mouths, noses and ears were small, their brown, staring eyes were twice the size of human eyes.

Walton said he was frightened, tried to hit them with a rod he picked up in the room, and the entities turned around and walked away. Walton ran in panic out into a curving hall, went into another room where he experimented with a console until a male at least seven feet tall appeared in the doorway. The man wore a clear helmet like an ocean diver might wear and Travis could see his sandy-colored hair and golden eyes.

The man led Walton out of the craft into a huge enclosure where the air was fresher and where several other disk-shaped craft were parked. The two entered another craft where there were three more blond-haired beings. All wore blue, tight fitting jumpsuits, including a female with breasts. The female placed an object that Walton thought resembled an oxygen mask over his face and he passed out.

When he regained consciousness, he was lying back on the road. A disk-shaped craft was rising up into the sky directly above him. Travis could feel intense heat as he watched doors in the base close. When the object had disappeared, he walked to the nearest telephone booth and called his sister not realizing he had been gone for days.

1976

September 19, Teheran, Iran — In a confidential report from the United States military attaché in Iran to the Pentagon, it was reported that at about 12:30 AM on September 19, citizens in the Shemiran area of Teheran began calling Iranian Air Force headquarters to report a strange object in the sky. The UFO was flashing intensely brilliant strobe lights, arranged in a rectangular pattern and alternating blue, green, red and orange in color. Controllers at Mehrabad airport reported the object's altitude to be approximately 5,000 feet.

At 1:30 AM, an F-4 was scrambled from Shahrokhi AFB. When the interceptor approached within a range of just under thirty miles, all instrumentation and communications were lost. The confidential communiqué stated, "When the F-4 turned away from the object and apparently was no longer a threat to it, the jet regained all instrumentation and communications."

Ten minutes later at 1:40 AM, a second F-4 was launched. As the backseater radar operator tracked the object, he compared the size of the radar return to that of a 707 tanker. As the second F-4 pursued the UFO southwards, the unidentified craft maintained a distance of almost 30 miles. Suddenly, another bright object, estimated to be one-half to one-third the apparent size of the moon, came out of the original object. The second UFO sped toward the jet. The pilot attempted to fire an AIM-9 missile, but at that moment his weapons control panel went off and he lost all communications.

As the jet dove out of the way, the UFO circled behind it and then returned to the mother ship. Moments later, another object emerged from the opposite side of the mother ship and descended at high speed. It came to rest gently on the ground, casting a bright light over a 1 1/2 mile area. The F-4 pilot descended to a lower altitude and continued to observe the UFO. The object ascended again, rejoining the mother ship which then departed. As the F-4 came in to land at the airport, the pilot and radar operator noticed overhead yet another cylindrical UFO with steady lights on each end and a flashing light in the middle. Tower controllers saw it as it passed over the jet.

After daybreak, the F-4 crew flew over the UFO landing site in a helicopter. No traces were observed, although a strange beeping signal was picked up west of the location. The occupants of a house in the area reported that they had heard a loud noise and had seen a bright illumination similar to lightning.

1977 to 1989

Over the next thirteen years, discs and other unusual aerial craft were continually sighted, landing sites showed physical traces in soil and grass, animals continued to be mutilated, orange spheres and Bigfoot were seen near mutilation sites, and the U. S. government continued its policy of denial, misinformation and silence about the real facts it had concerning extraterrestrial biological entities and their advanced technologies and possibly other dimensional entities as well.

One incident stands out for the number of military eyewitnesses and very high strangeness, including the implication of time travel.

December 26-30, 1980, Bentwaters AFB, England — Christmas week in December 1980 was a tense and confusing time for several dozen men at the joint United States and English Royal Air Force Base at Bentwaters near the southeastern coast of the British Isles. In the early morning hours of December 26-30, odd lights were seen moving in the Rendlesham forest and various security and military personnel investigated.

Two of the security men, Staff Sergeant James Penniston and Airman First Class John Smith (alias), had a close encounter with one of the lights. Penniston recalls blue and red lights moving in the forest at the East Gate of Bentwaters around 2 AM on December 26, 1980. Afterward, there were a series of meetings and debriefings with superior officers.

Lt. Col. Charles I. Halt, Deputy Base Commander at Bentwaters, told Penniston, "The reports will remain confidential and we should treat the incident as Top Secret and not discuss it with anybody." Penniston remembered being told there was radiation where the lights had been, a dosage equivalent to "five or ten x-rays."

After his encounter with lights, Penniston received a call to report on December 30, 1980 to the 81st Security Police Squadron, Bentwaters. There Major Malcolm Zickler ordered Penniston to report to the Air Force Office of Special Investigations to tell two agents what happened. AFOSI's responsibility is to investigate Air Force personnel crimes and other sensitive matters. Therefore, it is the only organization that can legally intrude into the command structure at any level without commanders having full knowledge.

Penniston did not want to tell the agents all the truth because he thought it was too bizarre. But eventually, the agents demanded that he agree to hypnosis with Sodium Pentothal that would be recorded by two tape recorders. That occurred and Penniston described approaching a white light, seeing a large disc-shaped craft within the light that had raised symbols on its surface, reaching out to touch the symbols and simultaneously receiving binary code information in his mind. The essence of the communication was that the intelligence behind the craft and binary code were time travelers from earth's future. Their mission was to gather chromosomes, genetic material, from humans and animals and to return to their time line several thousand years in the future where their civilization's ability to reproduce has a serious problem and faces extinction.

Penniston was asked under hypnosis if the time travelers were using humans "like breeding stock?" He answered, "No. Like Band-Aids." Penniston said government intelligence already knew what he told them and that it was considered vital to keep it all secret. "It will breach national security and can destroy the system, cause wars, chaos in the streets. That's why it's important to keep it quiet." However, Penniston

shared his story because he said it didn't make any difference. "It's too unbelievable."

December 31, 1982 to July 1986, the Hudson Valley of New York and southwestern Connecticut down to Long Island Sound — Thousands of residents over four years used the same words to describe a sky object: a boomerang that was huge, maybe a thousand feet long and several stories high, moving slowly and silently close to the ground, sometimes with lights and sometimes without. The early sightings seemed concentrated over Westchester County, so the UFO became known as the "Westchester Boomerang."

In their 1987 book, *Night Siege, The Hudson Valley UFO Sightings*, astronomer J. Allen Hynek and Philip J. Imbrogno and writer Bob Pratt said: "Something truly astonishing was happening, but those who are responsible for protecting us — the law enforcement agencies, state and federal governments, and the military — ignored it.

"Hundreds of people living in the affluent suburbs within commuting distance of one of the world's largest and most cosmopolitan cities were astonished, awestruck and frightened by what they could only regard as a very bizarre event, yet the Federal Aviation Administration (FAA), which monitors the air lanes through which the boomerang-shaped object flew repeatedly, persisted in denying its existence.

One case involved a security officer for the Indian Head Power Authority, "Carl," who had also been a New York State Police officer. On June 14, 1984, he and other security guards and Consolidated-Edison nuclear power employees watched a boomerang for twenty minutes. "...during that time I would say it hovered in one area for about fifteen minutes without moving," Carl said. "The lights were incredibly bright and they were steady," Carl said. "It was hovering over the parking lot on the reactor grounds and over some buildings that have lights on twenty-four hours a day. These are bright security lights, and the lights on this object were at least ten times as bright.

"The building it was over is quite large — about eighty feet high — and this object dwarfed it." Carl estimated the boomerang was at least 300 feet long. "When the object turned, it rotated as if it was lying on a wheel. It made a very slow, sharp, ninety-degree turn. The object always moved in the direction of the apex."

Then ten days later on July 24, other security supervisors and guards, including Carl, saw a similar object. "It approached from basically the same direction as before and this time the lights were changing. First, they would all be yellow, then white, and then they all turned blue. The lights were in a semicircle and in the rear, pretty far back, was this red, blinking light.

"As the object approached the plant, I got about as close as 500 feet from it," Carl said. "It looked like an ice cream cone. You could see it was a solid body about the size of three football fields. At this time, it was directly over our heads, and we were looking up at it. It was still moving, but very slowly. I could walk and keep up with it, so it must have been going slower than five to ten miles an hour."

On that date, only one of three reactors at Indian Head was in operation. Carl said, "Ours was the only one working. This object picked the right one to fly over, and that's what got our supervisor worried. This thing got to within thirty feet of the reactor."

A duty officer inside one of the buildings had control over a security camera placed outside the buildings. He turned one of the cameras on top a 95-foot-tall pole. "I turned my camera in that direction and I saw eight bright lights in a V shape, very wide, almost like a half circle. They were at least as bright as the landing lights on a large jet. My supervisor and I panned the camera up and down and the object was very large, bigger than a football field." The duty officer said the object was so big that to see all of it from front to back he had to pan the camera nearly 180 degrees.

"It was one solid structure and very large. We had it on camera for about fifteen minutes. ...It seemed very brazen. It acted like it didn't care who saw it."

Another security officer said, "There was this series of lights in the shape of a boomerang, and behind it was this dark structure, and there were these two things on the bottom that looked like hollow spheres of some sort. They looked like portals that could open up and rockets or something could fly out of there. They were very dark. It was very low. It was so close I actually got scared looking at it."

The few times the FAA or law enforcement commented, the explanations varied from blimps to small planes flying together in formation to hoax everyone. But Dr. Hynek and Philip Imbrogno concluded their book:

"...we feel we have presented an overwhelming amount of evidence that something strange and inexplicable is in our midst; something alien to the world as we know it.

"We do not know what it is. We can only speculate.

"We would like to know what it is, and we believe everyone who saw it would like to know.

"We invite the scientists of the world to take an open-minded, objective look at this phenomenon and help solve the mystery."

September 21 to October 2, 1989, Voronezh, Russia — In this large industrial city with a population of a million people, dozens of children and adults reported seeing unidentified flying objects within the city limits, watched them land, and their occupants come out. One park near School No. 33 was the site of repeated landings and encounters.

For example, on September 26 or 27 (the boy doesn't remember exactly), at 7 PM a student saw an object with portholes. A being about nine feet tall emerged from it. "On his head, I saw two eyes and slightly above them a red lamp. On his breast there was a disk with three spots of different colours, and slightly below it there was a rectangle which started sticking out from the body."

The Komsomolskaya Pravda, Novosti Press Agency and The New York Times summarized the several eyewitness accounts: "the flyover and landing of a mysterious ellipsis-shaped body about 45-feet in diameter and 18 feet thick with a hatch in the middle was seen from various distances. The object remained at a height of roughly five feet above earth, then supports came out and it landed.

"From the open hatch there emerged a 9 foot tall figure which filled the whole of the 'doorway.' Distinctive features: a heavy gait, no neck (the 'head' with something like three luminous eyes was a kind of hemisphere lying directly on the shoulders). The alien — sometimes there were a few of them — walked near the craft for some time, examined the (park) plot, and seemed to take soil samples."

Russian Colonel of the Militia, Lyudmila Makarova, head of the Criminal Expertise Department of the Voronezh Administration of Internal Affairs, headed a group of experts who took measurements on the site of the events. She said, "I don't know what actually happened here, but an increase in the radioactive background is in evidence."

November 17, 1986, Fort Yukon, Arctic Circle — The crew of a Japan Air Lines cargo jet Flight 1628 reported a mysterious and gigantic aerial vehicle shaped like a walnut with bright flashing white and yellow lights followed the airliner across the Arctic Circle as the plane traveled from Reykjavik, Iceland to Tokyo.

The three-man crew radioed air traffic controllers in Anchorage about the huge UFO flying "in formation" with them. The controller in charge of the Boeing 747 picked up a second, unknown object on his radar screen. But Federal Aviation Administration spokesman Paul Steucke said electronically recorded radar data did not show a second object and the FAA "can't reconcile the difference." The U. S. Air Force also reported briefly seeing a second object on radar. The FAA confirmed that lights appeared only a mile from the JAL jet as it crossed the Arctic Circle about 30 miles southeast of the town of Fort Yukon.

When Japan Airlines pilot Kenju Terauchi was interviewed, he said the large walnut-shaped object was as

big or bigger than "two aircraft carriers placed end-to-end." The pilot drew a picture that was carried in international newspapers in which the walnut-shaped craft takes up 2.5 inches and his JAL airliner in comparison is only one-quarter of an inch.

1989 to 1998

Spring — More than two thousand simple circles, Celtic crosses and increasingly complex pictograms have been discovered in southern England's crop fields since 1978 with the largest concentration occurring from 1989 throughout the 1990s. Hundreds more have been reported in more than a dozen other countries including Japan, Australia, the Czech Republic, Germany, the Netherlands, Canada and the United States.

When the circle designs suddenly evolved in 1990 to complex formations that included rectangles, triangles and ovals as well as circles and rings as big as football fields, astronomer Archie Roy at Glasgow University said he was convinced humanity was encountering an advanced intelligence.

Then in 1991, other large formations emerged which resembled ladders and insects. The season culminated with a large geometric shape near Barbury Castle, England found at 6 AM on July 17. The equilateral triangle measured approximately 177 feet each side. At each vertex of the triangle were different circular formations which averaged about 75 feet in diameter. The formation was not in the field as late as 10 PM the evening of July 16 when a television crew was taping nearby. The manager of Waterstone's bookshop in Bristol said that he and two others had seen six pulsing lights and one large dark object cross the sky that night. Others talked about seeing unusual lights over Barbury Castle north of the ancient sacred circle of stones called Avebury.

A warden who lived in a bungalow on the Barbury Castle hill said he "heard the most colossal roar coupled with a pulsing hum at 3:30 AM the morning of July 17, 1991. He compared the roar to a hundred planes going over. This sound ended abruptly after a few minutes, but strangely he never got up to look outside the house.

Grazing sheep near the large formation were not hurt, but the owner found the animals at the opposite end of a large pasture where they had not gone before as if they had been frightened by something.

On July 27, 1992 at 12:30 AM, a group of four witnesses near Woodborough Hill in Alton Barnes, Wiltshire, England saw a disc with red, white and green lights moving around its middle and an amber light that seemed to detach itself from the disc and move off. Large formations in cereal crops had been found before and after the sighting, but there is yet no hard evidence of a disc craft actually making formations.

Biophysicist W. C. Levengood in Michigan has been studying plants and soil from formations around the world since 1991. He has documented a pattern of physical and biochemical changes in affected plants which he hypothesizes were made by a "spinning plasma vortex containing complex microwave and electronic energies." The source of the spinning plasma vortex is unknown.

March 30-31, 1990, Belgian Airspace — On the night of March 30-31, hundreds of police and civilians reported a large triangle-shaped craft flying across Belgium. Eyewitnesses all described the same configuration: one large white light in each corner of the triangle, sometimes one large white light and/or smaller red glowing lights at the center of the triangle. Royal Belgian Air Force radar operators at Glons and Semmerzake confirmed the UFO and two F-16 Fighting Falcons were scrambled to intercept. The craft was moving very slowly at 6,500 feet until the F-16s radar locked on it. Then the triangle accelerated easily beyond the jets and dived to below 650 feet, too low for radar to separate its blip from ground clutter.

Between November 1989 and March 1990, Belgian authorities had received over 2,500 reports of triangular UFOs in Belgian skies. Eyewitness drawings closely match the government's own drawing of a triangular craft as shown in its April 1954 TOP SECRET/MAJIC EYES ONLY "Restricted SOM1-01 Majestic-12 Group Special Operations Manual – Extraterrestrial Entities and Technology, Recovery and

Disposal" in the section labeled "9. Description of Craft" discussed earlier.

February 4, 1993, Gadsden, Alabama — The Gadsden Times headline that day said, "Deja vu! UFOs return to skies over DeKalb?" And the story, datelined Fort Payne, said: "A week of reports of strange lights over DeKalb County has police officials building a file on the county's latest encounter with unidentified flying objects.

"Sue Johnson was drying her hair about 5 AM January 28 when a noise she cannot describe brought her to the kitchen window of her home in Dogtown.

"What she saw practically in her backyard was some sort of airborne object, covered with glimmering red, green and white lights, and moving slowly below the treetops."

The newspaper described several other peoples' encounters with lights and "silent helicopters" at the same time that dozens of cattle mutilations were being reported to police and sheriffs' offices around Fort Payne, Geraldine and Albertville.

Reverend Roger Watkins and his teenage son were wakened around 2 AM by heavy shaking of their Geraldine house. Even their gold fish were knocked out of three fish bowls on the living room coffee table and died. From their second floor windows, Rev. Watkins and his son could see an enormous object about 150 feet in diameter and no more than six feet off the ground at their fence line only a dozen yards from the house.

The Reverend said, "It was shaped like a plate with pulsing lights of many colors all around what looked like silver metal." After about ten minutes, the disc began to lift upward, spinning as it did so, and then vanished.

March 13, 1997, Phoenix, Arizona — Light configurations in triangular or V shapes were observed by hundreds, if not thousands, of residents from northern to southern Arizona. Some Phoenix witnesses said the V-shape turned red at one point and shot vertically upward and out of sight. Others saw large, orange glowing spheres near Luke AFB in Phoenix.

A professional real estate couple in Phoenix watched a dark triangle at around 8:30 PM move slowly near their hill top home. Based on the street grids below, they estimated the triangle's length to be 1.8 miles. The female eyewitness said she could see humanoid shadows at what appeared to be rectangular windows along one of the triangle's sides.

The History is Filed Away

The last half of the 20th Century has been a time of calculated U. S. government denial and misinformation about other life forms existing in our universe in order to preserve the vested interests and status quo of political, economic and religious institutions. Perhaps future historians will judge that dishonest policy as wise following two world wars.

The Aftermath

"...the Government doesn't know what it knows."

--- FBI Agent Investigating UFO issues

There was a time when the United States Government admitted the reality of Unidentified Flying Objects or UFOs.

Air Force Lt. Gen. Nathan F. Twining, former Army chief of staff then serving as commander of the Air Force's Air Material Command, in September of 1947 said this about UFOs:

"The phenomenon reported is something real and not visionary or fictitious.

"There are objects probably approximating the shape of a disc, of such appreciable size as to appear to be as large as man-made aircraft...

"The reported operating characteristics...lend belief to the possibility that some of the objects are controlled either manually, automatically or remotely."

Following the Twining report, an early CIA memo conceded "that the objects are from outer space...is a possibility." A month after Twining wrote his opinion, an Air Force Intelligence "Draft of Collection Memorandum" stated cryptically, "While there remains the possibility of Russian manufacture...it is the considered opinion of some elements that the object may in fact represent an interplanetary craft of some kind."

This openness regarding UFOs soon to changed drastically to a rigid attitude of dismissal and ridicule that set the tone for both government and the mass media's response to the phenomenon for the next 50 years.

But even in 1947 --- a pivotal year in the UFO issue --- strange craft flying in the skies were nothing new. Although unknown to most people, stories of flying disc-shaped objects and even close encounters with their occupants date back to man's pre-history. According to scholar Richard L. Thompson, "there a great deal of material in Vedic literature (Hindu manuscripts that are among the earliest known writings of mankind) about flying machines, called vimanas, that show striking resemblances to UFOs." Biblical accounts, such as Ezekiel's fiery flying wheel, also parallel modern UFO sighting accounts.

The Great Airship Mystery of 1896-97 ranging from the West Coast to the central United States clearly showed that something was seen in the air years before the Wright brothers flew a heavier-than-air machine at Kitty Hawk, NJ, in 1903. Strange flying objects were reported in Brazil, England, Belgium, Holland and Germany beginning in 1910. Large low-flying silent craft, accompanied by enigmatic radio signals, were frequently sighted over Scandinavia in the years prior to World War II.

During the war, allied bomber crews reported being chased and followed by glowing balls of light they called "foo fighters". These objects were believed to be enemy secret weapons until after the war when it was learned that German and Japanese pilots also experienced the pursuing lights and believed they were Allied weapons.

According to several credible accounts, certain men within the US Government were aware that strange objects were flying through earth's skies long before World War II. The government already had a top-secret group of cryptographers working on breaking the Japanese and German military codes. The code word for this operation was MAGIC. Once it became known that objects under intelligent control were in the atmosphere, who better qualified to seek the possibility of communication than the cryptographers of MAGIC? Expanding this group to include men with scientific and aviation backgrounds, MAGIC soon became known as the Group of 12 which later apparently became MAGIC 12. Later still, MAGIC 12 was changed to MAJESTIC 12 or MJ-12 to mislead researchers for security reasons.

Whatever the name, these high-level investigators had precious little hard evidence of the UFO reality --- until mid-1947 when everything changed.

Despite more than 1,000 published accounts of UFO sightings worldwide between late June and mid-July of 1947 alone, it was the experience of Boise, Idaho, businessman Kenneth Arnold that is generally accepted as starting the modern UFO era.

On June 24, 1947, Arnold was piloting a Callair airplane near Mount Rainier when he encountered a formation of very bright horseshoe-shaped objects flying at "tremendous" speed. "They didn't fly like any aircraft I had seen before," commented Arnold, who also was a member of an Idaho search and rescue air team. In later discussing his sighting with news reporters, Arnold described the objects' flight characteristics, saying they flew "like a saucer would if you skipped it across the water." The name stuck. The nation was enthralled with the idea of "flying saucers," especially after a news release from the Army that a "flying disc" had been captured in New Mexico just two weeks after Arnold's encounter.

Today the name Roswell is synonymous with UFOs. Yet, as with the UFO issue itself, what actually happened at Roswell remains both speculative and controversial.

The Roswell case is a microcosm of the UFO issue, with personal beliefs lining up according to each individual mindset. Mindset is simply each person's paradigm or world view based on the totality of his or her own experience.

In this case, one can believe differing government pronouncements, all of which --- with the exception of the initial news release --- state nothing unearthly occurred at Roswell in 1947, or one can believe an immense wealth of information and testimony indicating that something quite extraordinary occurred in the New Mexico desert. Since there is some amount of evidence to support either view, it is left up to the individual mindset to decide what to believe.

Dispassionately dissecting the government's case, one is struck by the scarcity of relevant documentation. A 1997 Air Force publication, prematurely entitled *The Roswell Report: Case Closed*, presented much data which, while impressive in appearance, had little relevance to the Roswell controversy.

For example, the report comments on the fact that actor Robert Stack played in a 1956 film about Air Force medical projects and in 1990 was host to an *Unsolved Mysteries* TV program about Roswell. There is extensive comment about the use of local citizens in the recovery of Air Force balloon launches and photos of balloons and equipment, even a borrowed mule used to transport a balloon --- as if all that somehow explained the events of the 1947.

One section stated, "The examination of events that involved the Walker AFB (Roswell Army Air Force Base was changed to Walker AFB in 1948) hospital that may explain reports of bodies was begun by reviewing the most prominent possible source, which were aircraft accident(s)." For several pages, the report presented comparisons of known crashes to accounts of small bodies at Roswell. Yet, according to their own data, there were no fatal aircraft accidents in the vicinity of Roswell in 1947. The Air Force argument apparently rested on the possible connection between the Roswell crash story and the fatal crash of a KC-97G tanker --- which occurred in 1956!

Many pages of the Air Force report are used to detail studies utilizing anthropomorphic dummies, which were dropped over and recovered from the New Mexico desert. This ingenious explanation falls apart after careful review of the Air Force's own material.

The earliest launch date for testing such dummies is listed as June 23, 1954, seven years after the reported Roswell crash.

Additionally, the report described the test dummies as "72 inches tall (six feet), weighed 200 pounds (with provisions for mounting instrumentation)." This description could hardly account for the numerous witnesses --- accurately quoted in the Air Force report --- all of whom described the bodies at the Roswell crash site as no more than four and a half feet tall. Photos accompanying the report clearly show dummies with a human appearance, both in size and features, and it only makes sense to use such accurate human-like approximations to test parachutes, ejection seats and such.

It beggars the imagination to think that the highly-trained and experienced intelligence officers of Roswell's 509th Bomb Group --- the only unit in 1947 to carry atomic weapons --- could confuse a six-foot-tall human dummy for a four-foot-tall spindly spaceman. In 1997 when the Air Force publicly announced that Roswell was only about a crashed MOGUL balloon and crash dummies, even national news commentator Sam Donaldson quipped, "Do you really expect us to believe that?"

In truth, most Americans didn't believe that. The evidence which flies in the face of the facile Air Force explanation is simply too voluminous and compelling.

More than 400 individuals are now on the public record claiming to have knowledge of a crashed "flying disc" and non-human bodies at Roswell in 1947.

Some of these witnesses present unbelievable and contradictory stories. But others, such as Roswell mortician Glenn Dennis who claimed that Roswell base medical personnel contacted him on how to obtain several small coffins; Brig. General Arthur Exon, a former commander of Wright-Patterson AFB, who said he was aware of both Roswell crash debris and small bodies being shipped to Wright-Patterson and former Chaves County Sheriff George A. Wilcox, who said he was forced to turn over unusual Roswell wreckage to military officers who then threatened both him and his family if he talked about his experience.

Even ordinary people, with nothing to gain from telling their experiences, have come forward. Edward and Helen Farcas in 1997 told Texas news reporters about their separate experiences in New Mexico in 1947. Mrs. Farcas said she saw a fiery object streaked over her home near Roswell. "It was going at a pace that no weather balloon ever went," she recalled. "It was just like a jet engine was stuck on it. That thing was going so fast, honest to Pete. It was shiny, it was bright as all get-out." Eager to tell her husband about her sighting, Mrs. Farcas found Edward had his own story to tell when he arrived home from Roswell Air Base where he was a master sergeant with the 509th Bomb Group. "I saw the vehicles, the trucks, the GI trucks, covered, bringing in this debris from what we heard was the crash of a flying saucer that crashed northwest of Roswell," he said. "I was right there near the flight line. They were under heavy guard. They had a lot of security. They took that stuff and they took it in a big hanger. And they had security around so we couldn't see what it was...I don't talk about the thing too much...until I get provoked and someone says it isn't so. Because it's an incident that's been covered up. There's too much lying going on."

If even half of the people who have given statements about a crashed disc and alien bodies are discounted, the remainder should be enough to convince any open minded person that something quite extraordinary occurred in the New Mexico desert in 1947.

Yet, at the time, military authorities quickly denounced as erroneous a press release from the Roswell base declaring that a "flying disc" had been captured. Base personnel were mistaken, they countered. It was only a weather balloon. And the American public, still imbued with wartime patriotism, accepted this explanation from their leaders. It was only after the political assassinations of the 1960s, the Vietnam experience and Watergate that the public began to realize that government officials could and would lie to them.

It is obvious that there is more to the Roswell story than has been admitted by the government. The military claims nothing unusual took place while some 400 witnesses claim otherwise. Who is telling the truth?

One objective indicator of who's telling the truth may be buried in a 1995 US General Accounting Office report regarding Roswell, which was prompted by a 1994 request from the late New Mexico Representative Steven Schiff. The GAO reported it could find no evidence of a crashed saucer but failed to endorse the Air Force's claim that only a secret MOGUL balloon crashed at Roswell.

Most telling was the fact that GAO investigators discovered that Roswell Army Air Field administrative records from March, 1945, through December, 1949, as well as message traffic from the base between October, 1946, through December, 1949, had been mysteriously destroyed. Schiff's press liaison, Barry

Bitzer commented, "Having spent 24 years in the military, (Schiff) did express some surprise that those records were destroyed, supposedly against regulations and without traceable authorization."

Whatever actually happened at Roswell during July, 1947, it apparently prompted and immediate and profound change in government openness toward UFOs. Changes in the basic structure of this nation's military had been in the wind since December 19, 1945, when President Harry Truman asked Congress to create a unified military establishment. Concurrently there had been a long-standing debate regarding the creation of a centralized intelligence agency to replace the wartime Office of Strategic Services.

But following the Roswell incident, there appeared to be an unnatural urgency to tightening the military and intelligence systems. This culminated with Truman signing into law the National Security Act of 1947 on July 25, less than a month after Roswell. The act went into effect on September 18, 1947.

This act separated the Air Force from the Army and created the military Joint Chiefs of Staff and the Central Intelligence Agency. But according to then Navy Secretary James V. Forrestal "the most important feature of the bill" was the creation of the National Security Council (NSC), after some adjustment comprised of the President, the Vice President and the secretaries of state and defense.

Not only was the 1947 act rushed into law but Congress had no real conception of the ultimate purposes of the legislation. The national mood was still one of wartime security and congressmen were simply given a wink and an assurance that national secrecy required national legislation. "Congress wound up legislating in the dark," commented Pulitzer Prize-winning reporter Tim Weiner.

At the heart of this darkness were the UFOs. Now under the National Security Act of 1947, control of UFO information --- obviously a matter of national security --- was centered in the four members of the NSC. The National Security Council system bypassed Congress, the Constitution, the media and the public.

It was at this same juncture that Truman reportedly created the MJ-12 group by secret executive order to monitor the UFO issue. One MJ-12 document --- not universally accepted as legitimate --- dated September 24, 1947, stated over the apparent signature of President Truman, "Hereafter this matter shall be referred to only as Operation Majestic Twelve."

Several supposed MJ-12 documents have now surfaced including an MJ-12 Operations Manual which presents details of a Roswell saucer recovery as well as descriptions of alien bodies. "So far, secrecy seems to be working," commented one report.

This secrecy may have been instigated by none other than Air Force Chief Twining himself. Following his rather honest report of September, 1947, and at Twining's recommendation, a UFO study group --- designated Project Sign --- was created by the end of that year within the Air Force. Sign members quickly became sharply divided between those who believed UFOs to be secret but ordinary Soviet technology perhaps built from captured Nazi designs and those who subscribed to the extraterrestrial thesis.

"The division grew greater as it became increasingly clear that the 'ordinary' foreign technology explanation was untenable," wrote J. Allen Hynek, then director of Ohio State University's McMullin Observatory, who joined Project Sign in early 1948.

Hynek, like others within Project Sign, started out as a total skeptic, snickering at the "gullibility" of those who professed to see UFOs. "It was not until several years had passed and data of similar nature continued to flow not only from this country but from many others that I had occasion to feel the phenomenon was indeed being proved: there were too many occurrences that couldn't be explained in 'ordinary' terms," he wrote.

Such occurrences included famous early UFO cases like the death of National Guard Capt. Thomas Mantell, who died in January, 1948, when his F-51 plane crashed in Kentucky after chasing a large UFO

detected on radar and reported by Kentucky highway patrolmen. Later in 1948 mysterious green fireballs were reported on numerous occasions in New Mexico and neighboring states. On Oct. 1, 1948, another National Guard pilot, Lt. George F. Gorman reported an aerial dogfight with a UFO at Fargo, ND.

"The object was not only able to out turn and out speed my aircraft, " stated Gorman, "but was able...to maintain a constant rate of climb far in excess of my aircraft. I am convinced that there was definite thought behind its maneuvers."

Faced with accounts such as these, Project Sign members began to accept the extraterrestrial thesis. "With the Soviets practically eliminated as a UFO source, the idea of interplanetary spaceships was becoming more popular," wrote Air Force Capt. Edward J. Ruppelt, who later would head the Project Blue Book UFO investigation.

The Sign staff prepared an "Estimate of the Situation" report for higher authorities which concluded that UFOs represented interplanetary spaceships.

According to Ruppelt, this report drew "considerable comment" as it worked its way through military channels to higher command echelons, "but no one stopped it" --- until it hit the desk of Air Force Chief of Staff Gen. Hoyt S. Vandenberg.

Vandenberg squelched the report, saying he just couldn't accept the idea of interplanetary spaceships. All copies were ordered destroyed, but a few, according to Ruppelt, were kept as "mementos of the golden days of the UFOs."

Interestingly enough, Vandenberg is one of those men listed as a member of the top-secret MJ-12 UFO group. Could it be that he knew more about the issue than the Project Sign staff and took steps to head off any low-level investigation?

Vandenberg's response to the "Estimate of the Situation" report certainly set the tone. Most of the Project Sign staff saw the writing on the wall and departed, leaving only a few minor staffers in charge.

These survivors quickly began to seek more mundane explanations for the bizarre UFO sightings. In a rewritten "Estimate of the Situation", they concluded that Mantell hallucinated and died due to oxygen deprivation while chasing Venus and that Gorman dueled with a lighted weather balloon,. In fact by the time the rewritten report was issued in late 1948, all but seven UFO reports had been explained away.

Meanwhile the new media had caught wind of the Project Sign investigation but, without knowing its proper code name, called it Project Saucer. The Air Force responded to this unwanted attention by announcing the end of Project Sign.

This was not exactly true. Only February 11, 1949, the group's name was simply changed to Project Grudge with significant changes in its operation. "The change to Project Grudge signaled the adoption of the strict brush-off attitude to the UFO problem," noted Hynek. "Now the public relations statements on specific UFO cases bore little resemblance to the facts of the case. If a case contained some of the elements possibly attributable to aircraft, a balloon, etc., it automatically became that object in the press release."

Ruppelt shared the confusion and frustration of the Air Force investigators. "This drastic change in official attitude is as difficult to explain as it was difficult for many people who knew what was going on inside Project Sign to believe...Here were people deciding that there was nothing to this UFO business right at the time when the reports seemed to be getting better. From what I could see, if there were any mind-changing to be done, it should have been the other way..."

Of course, none of this internal consternation was known to the media or the public. The official government position on UFOs had become one of denial --- there was nothing there except

misinterpretations and hoaxes. "Now the public relations statements on specific UFO cases bore little resemblance to the facts of the case," noted Hynek.

Meanwhile the UFOs appeared unaffected by the commotion. They continued to come and go at their leisure, appearing ever more frequently and in increasingly brazen situations. They were frequently observed near our most sensitive military and atomic installations.

Behind the scenes, high-ranking government officials were intensely interested in any UFO information, giving lie to the banal press releases being issued by the Air Force.

Even FBI Director J. Edgar Hoover was denied access to information. In a 1947 memo, Hoover grouched, "...we must insist upon full access to discs recovered. For instance in the (La?) case the Army grabbed it and wouldn't let us have it for cursory examination."

Wilbert B. Smith, a Canadian official, told his superiors he had learned from American scientist Dr. Robert Sarbacher that "flying saucers exist" and that the issue was considered to be of "tremendous significance" by U.S. authorities, who had classified the matter at a "rating higher even than the H-bomb". In the 1980s, Dr. Sarbacher, who served on the U.S. Government's Research and Development Board as well as president and board chairman of the Washington Institute of Technology, confirmed Smith's account in a letter, stating, "Dr. Vannevar Bush (another MJ-12 listee) was definitely involved, and I think Dr. Robert Oppenheimer also...I did receive some official reports when I was in my office at the Pentagon but all these were left there as at the time we were never supposed to take them out of the office...About the only thing I remember at this time is that certain materials reported to have come from flying saucer crashes were extremely light and very tough. I am sure our laboratories analyzed them very carefully....I remember that in talking to some of the people at the office that I got the impression these 'aliens' were constructed like certain insects we have observed on earth...I still do not know why the high order of classification has been given and why the denial of the existence of these devices."

As the 1950s began, Project Grudge foundered, strapped by political, funding and manpower problems. Ruppelt said the project lapsed into a period of almost complete inactivity which he termed the "Dark Ages".

A newsman of the time described one of the only reports issued by Project Grudge as "quite impressive, but only in its ambiguousness, illogical reasoning and very apparent attempt to write off all UFO reports a any cost...to cover up the real story."

Nationally-syndicated columnist Jack Anderson felt the same. "I know a government cover-up when I see one, and I am compelled to say that the Air Force's handling of the UFO reports has all the earmarks of a cover-up," he recently wrote.

Irritated that the media and the public would not just drop the subject of UFOs, high-ranking military officers established a new, reorganized Project Grudge on October 27, 1951, and placed Capt. Ruppelt in charge.

Ruppelt noted a "schizophrenic" approach to UFOs by the Air Force. While on the one hand constantly denying that UFOs existed, Air Force officials on the other hand issued orders to both pilots and air controllers on how to proceed when a UFO was encountered. These orders, known as Communications Instructions for Reporting Vital Intelligence Sightings (CIRVIS), directed pilots to report UFO sightings but kept these reports secret from the public.

This censorship was extended to commercial pilots when Air Force officials met with representatives of the nation's major airlines. Pilots were told to cease reporting UFOs to their companies but instead report directly to military intelligence in Washington. According to Scripps-Howard New Service, prior to this meeting, commercial pilots had been reporting between five and ten UFO sightings per night. Following

the meeting where the new guidelines for reporting were issued as well as admonitions against discussing the issue publicly, these reports dropped to zero.

Almost 500 airline pilots signed a petition protesting this censorship but to no avail. Someone with considerable power was determined to close off public discussion of UFOs.

Ruppelt, meanwhile brought fresh interest to Project Grudge. He personally investigated some of the more publicized UFO incidents. Ruppelt also visited the makers of the military "Skyhook" balloons, a favorite explanation for UFO reports. A day-long discussion convinced Ruppelt that balloons could not account for all UFO sightings.

By March, 1952, with UFO reports increasing not only in quantity but in quality, Project Grudge was scrapped. The Air Force investigation, now working closely with the Air Defense Command, became a separate organization officially called the Aerial Phenomena Group. This name was soon changed to Project Blue Book, which continued as the official US Government response to UFOs until 1969.

Ruppelt's Project Blue Book also instigated another change. Disgusted with the expression "flying saucer" which had come to represent anything and everything strange and unworldly, Ruppelt popularized the term Unidentified Flying Object or UFO, in the belief that this more closely represented the focus of the investigation.

On April 7, 1952, Life magazine published an article entitled, "Have We Visitors from Space?" The piece, which discussed the possibility that UFOs indeed were from other worlds, cited several highly-placed government sources. In fact, believers and skeptics alike agreed that the concept of interplanetary visitors was the personal opinion of several ranking Pentagon officers at the time. But they stopped short of believing, as did several UFO researchers of the time, that the article had been officially approved at the highest-levels to condition the public to the idea of extraterrestrial visitation.

Conditioned or not, both the public and government officials were jolted by events beginning on July 19, 1952. That night about 11:40 p.m., more than eight UFOs were tracked on radar at both Andrews Air Force Base and Washington National Airport streaking over Washington at "fantastic high speeds". The objects were observed by experienced pilots and air traffic controllers along with countless citizens in addition to the radar contacts until nearly daylight. Ominously, these objects were well within Washington's most restricted airspace --- passing over both the Capitol and the White House.

These sightings continued later in July. Each time jet interceptors were vectored to the area of the UFOs, they would disappear until the jets returned to base when they would reappear and continue their aerobatics demonstration.

When the aerial show began, news reporters jammed into the radar room at National Airport but they were quickly ordered out with the excuse that classified radio frequencies would be used to communicate with the interceptors. "I knew this was absurd because any ham radio operator worth his salt could build equipment and listen in on any intercept," Ruppelt wrote. He said he later learned the real reason for dismissing the newsmen was to prevent them from learning the reality of the UFOs should one be brought down.

With little chance that the extraordinary aerial display could be denied, the Air Force called a news conference on July 29. It was largest and longest Air Force briefing since World War II. Maj. Gen. John Samford hedged on many questions asked by the reporters largely because, according to Ruppelt, he simply didn't have an answer.

Samford finally passed the buck to an intelligence officer who speculated that the display over Washington had been caused by temperature inversion, a phenomenon creating pockets of warm air which could both reflect light and be picked up on radar. This explanation, while reported skeptically by the media, was

embraced by UFO debunkers. However, Blue Book investigators determined that each night of the sightings temperature inversions were never strong enough to affect radar. "So the Washington National Airport sightings are still unknowns," Ruppelt concluded.

The Washington incidents were enough to cause Blue Book staffers to decide it was time to end the official secrecy regarding UFOs. This decision was supported by then Navy Secretary Dan Kimbell, who ordered a Navy investigator after experiencing his own UFO sighting while flying to Hawaii.

Both the Air Force and the Navy spent months studying some of the best sightings of the period including a film of fast-moving bright flying objects taken on July 2, 1952, by Navy Warrant Officer Delbert C. Newhouse. Neither Air Force nor Navy photo analysts could offer a conclusive explanation for the objects in the film.

With both the Air Force and the Navy now in the UFO investigation business and with Blue Book members calling for an end to the secrecy, it was obvious that something had to be done to control and contain the issue.

This was accomplished by calling upon the CIA, then one of the most hidden of government agencies and one that had been surreptitiously keeping tabs on UFOs since its inception in 1947. Retired Marine Maj. Donald E. Keyhoe, who in 1956 helped form a private UFO group called the National Investigations Committee on Aerial Phenomena (NICAP), claimed fellow NICAP member and former CIA Director Adm. Roscoe H. Hillenkoetter --- the same Adm. Hillenkoetter named as a MJ-12 member in the dubious MJ-12 documents --- confirmed to him this early CIA interest.

Keyhoe, a man with impressive credentials and highly-placed Washington contacts, said a decision was made to "seize control of the AF investigation and insist on a hard-boiled, ruthless censorship, to kill off public belief in UFOs".

To this end, CIA officials quietly convened a panel of distinguished scientists to make a secret study of the UFO evidence up to that time. The panel was selected by then CIA Director Walter Bedell Smith --- another name on the MJ-12 list --- and included yet another MJ-12 listee, Dr. Lloyd Berkner. The panel was chaired by Dr. H.P. Robertson, a California Institute of Technology physicist with close connections to U.S. intelligence, especially through his study of the German V-2 rocket program during World War II.

One panel member, Dr. Thornton L. Page of Johns Hopkins University, reflected the viewpoint of most of his peers when he later recalled, "At the start I thought it was a lot of nonsense and said so."

The Robertson Panel, as it came to be known, was hampered by men of Page's mindset and thrown off by the highly selective presentation of UFO cases by the CIA, charged one of the attending Air Force officers. "We were double-crossed," commented a Blue Book member. "The CIA (didn't) want to prepare the public --- they're trying to bury the subject. Those agents ran the whole show and the scientists followed their lead. They threw out the Utah (Newhouse) film --- said the Navy analysts were incompetent. We had over a hundred of the strongest verified reports. The agents bypassed the best ones. The scientists saw just 15 cases and the CIA men tried to pick holes in them."

This assertion was supported by astronomer Hynek, by that time too swayed toward the spaceship theory to be allowed anywhere near the Robertson panel. "The panel was not given access to many of the truly puzzling cases," he confirmed, adding, "The Robertson panel did get someplace: they made the subject of UFOs scientifically unrespectable, and for nearly (50) years not enough attention was paid to the subject to acquire the kind of data needed to even decide the nature of the UFO phenomenon."

After just five days of study, the Robertson Panel concluded there was no indication that the UFO phenomenon constituted a direct threat to national security. No one knowledgeable with the panel's operation was surprised.

Intriguingly however, the panel saw fit to delve into the psychological aspect of UFOs while denying any physical reality. Panelists concluded that "the continued emphasis on the reporting of these phenomena does, in these perilous times, result in a threat to the orderly functioning of the protective organs of the body politic", such as clogging defense communications with "irrelevant reports" and causing false alarms which might diminish a rapid response to a Soviet attack.

To remedy this perceived weakness in the defense system, the panel recommended that "national security agencies take immediate steps to strip the Unidentified Flying Objects of the special status they have been given and the aura of mystery they have unfortunately acquired."

With the CIA-dominated Robertson Panel, the US Government thus began a conscious program of dismissal and ridicule regarding UFOs which has continued --- with only minor interruptions --- to this day.

Despite their protestations, Project Blue Book members resumed their role of explaining away all UFO cases. Al Chop, Blue Book's civilian press officer, said, "They killed the whole program. We (were) ordered to work up a national debunking campaign, planting articles in magazines and arranging broadcasts to make UFO reports sound like poppycock." According to Keyhoe, Ruppelt told him, "What Al Chop told you isn't the worst of it. We're ordered to hide sightings when possible, but if a strong report does get out we have to publish a fast explanation --- make up something to kill the report in a hurry and also ridicule the witness, especially if we can't figure out a plausible answer. We even have to discredit our own pilots. It's a raw deal but we can't buck the CIA."

The severity of this program of dismissal eventually resulted in this statement from Air Force Headquarters by Lt. Col. L. J. Tacker, "There never has been an official Air Force conclusion that Flying Saucers are real." Apparently Tacker had not read the Air Force documents previously mentioned.

The success of the new program of denial has been demonstrated by comments from leading government officials such as Georgia Senator Richard B. Russell, House Majority Leader John McCormack and Arizona Senator Barry Goldwater. All have stated that their efforts to learn about UFOs were blocked by some higher power. In a 1979 letter, Goldwater wrote, "This thing has gotten so highly classified...it is just impossible to get anything on it.

In March, 1954, Project Blue Book underwent yet another reorganization. Now UFO reports were screened by the 4602nd Air Intelligence Service Squadron. Only sightings which could not be rationalized away were forwarded to Blue Book, which was required to pass along all unexplained reports to the CIA. This was obviously a clear-cut method to hide away any inexplicable sightings.

By late 1956, a disgusted Capt. Ruppelt had resigned from Blue Book and published a book critical of the Air Force investigation and supporting the idea of extraterrestrial visitation.

What is clear from the record is that by the time of Ruppelt's departure from Project Blue Book, the UFO issue had been taken away from the military and placed firmly in the hands of the CIA and perhaps even higher, more secret, groups.

"The Air Force entered upon a long period of unfortunate, amateurish public relations," wrote Hynek, who remained with Blue Book as a consultant. He noted that "some of the Blue Book evaluations of sincere reports were often so transparent and irrelevant that they had later to be retracted."

The UFOs meanwhile continued to confound both Project Blue Book inactivity and government pronouncements that they simply didn't exist. In 1962, Edward R. Trapnell, assistant for public relations to the secretary of the Air Force, was shocked to learn that at that time the rate of UFO sightings was three times higher than when Blue Book first began.

The most documented cases of the 1950s and 60s included the buzzing of a British Overseas Airways Boeing Stratocruiser by several UFOs just after leaving New York City on June 29, 1954; radar contacts and multiple witnesses tracked a UFO that passed near two US-leased air bases near Ipswich, England, on August 13, 1956; a giant torpedo-shaped UFO which caused both motorists' cars to stop running after it made a brief landing outside Levelland, Texas, on November 2, 1957; a recorded radar contact with a UFO that approached the televised launch of a Polaris rocket from Cape Canaveral, FL., on January 10, 1961; the observation of a landed UFO along with two occupants by Policeman Lonnie Zamora near Socorro, NM, on April 24, 1964 and further UFO demonstrations near Washington, D.C. between December 21, 1964 and January 11, 1965.

By the mid-Sixties, a new wrinkle had been added to simple UFO sightings. Stories of contact with UFO occupants and even abductions began to surface. Contactees such as George Adamski, Howard Menger, Daniel Fry and George Van Tassel claimed to have conversations with extraterrestrials and even taken on trips aboard their craft.

Perhaps the earliest and most publicized abduction case involved a New Hampshire interracial couple, Betty and Barney Hill. The Hills claimed to have recalled under hypnosis an abduction as they drove home on September 19, 1961. The Hill case received widespread publicity in the 1960s, with both a popular book and a movie made from their experience.

Considering the continued government program of ridicule aimed at anyone who sought a serious discussion of UFOs and the increasingly bizarre accounts of UFO contact, it was understandable that during the 1960s, the Air Force tried unsuccessfully to rid itself of the Blue Book UFO project. A suggestion that the National Aeronautics and Space Administration (NASA) take over the UFO probe was discarded because it was believed that any NASA involvement would only convince more people of the reality of UFOs.

By the mid-1960s, pressure to treat UFOs seriously was building from different quarters. Maj. Keyhoe and his NICAP organization tried unsuccessfully to have Congress investigate the issue but the politicians were dissuaded by secret briefings by military and intelligence officers. The news media and the public were becoming wary of the self-serving explanations presented by Project Blue Book.

The public's ire was especially aroused after nearly 100 persons --- including a Civil Defense official, a college dean, students and law enforcement officers --- watched a football-shaped pulsating object land in marshland near Dexter, Michigan, on March 20, 1966. Government investigators, including astronomer Hynek, quickly explained away the sighting as simply will-o'-the-wisp or fox fire. "Air Force Insults Public With Swamp-Gas Theory" cried one newspaper headline, reflecting public indignation. This public response prompted Michigan Rep. Gerald R. Ford to press for a congressional investigation.

Brief hearings were conducted on April 5, 1966, but testimony was tightly restricted to statements from the secretary of the Air Force, the commander of Project Blue Book and Hynek, none of whom ever claimed to have seen a UFO. Nevertheless, public pressure to learn more continued to grow.

Responding to all this, the Air Force announced on Oct. 7, 1966, that a \$500,000 government grant was to be given to the University of Colorado to Study UFOs. Dr. Edward Condon, a physicist with long-standing government ties having worked on the development of both radar and the atomic bomb, was named director of the study. It quickly became known as the Condon Committee. It also quickly became apparent that Condon had no intention of conducting an open-minded, objective study. Less than three months after the contract was awarded, Condon stated, "My attitude right now is that there is nothing to it...But I'm not supposed to reach a conclusion for another year."

Later a memo from the study's project coordinator, Robert Low, confirmed the insincerity of the investigator. Writing to a Colorado University dean even before the project began, Low stated, "Our study would be conducted almost exclusively by nonbelievers who...could and probably would add an

impressive body of evidence that there is no reality to the (UFO) observations. The trick would be, I think, to describe the project so that, to the public, it would appear a totally objective study but, to the scientific community, would present the image of a group of nonbelievers trying their best to be objective but having an almost zero expectation of finding a saucer...If we set up the thing right and take pains to get the proper people involved...we could carry the job off to our benefit."

With these attitudes at the top clashing with those of the field investigators on the bottom, the study group soon broke into rival bickering and contentious factions. One outside consultant, astrophysicist Dr. Jacques Vallee noted, "Not surprisingly, a few months later the work of the committee had come to a standstill."

Like the Warren Commission before it, the Condon Committee operated from predetermined conclusions and a selective choice of evidence. It produced a report which made pronouncements unsupported by --- or even contradicting --- its own raw data.

The Condon Report was issued on January 9, 1969, with the pompous title, Scientific Study of Unidentified Flying Objects, and stated, "Our general conclusion is that nothing has come from the study of UFOs in the past 21 years that has added to scientific knowledge. Careful consideration of the record as it is available to us (emphasis added) leads us to conclude that further study of UFOs cannot be justified in the expectation that science will be advanced thereby."

Of the 12,618 UFO reports in the Blue Book files, Condon's committee chose to study a mere 117 --- none of which dealt with the numerous reports of UFOs detected near sensitive military and defense installations --- then admitted that 30 percent of this small sample defied logical explanation.

The report was immediately attacked from all sides. A subcommittee of the prestigious American Institute of Aeronautics & Astronautics in 1970 stated, "The opposite conclusions could have been drawn from the content of the (Condon) report, namely that a phenomenon with such a high ratio of unexplained cases should arouse sufficient scientific curiosity to continue its study."

Even author Curtis Peebles, a debunker who has dismissed all UFO cases as misinterpretation of natural events, hallucinations or hoaxes, recognized the weakness of the committee's work. "It was impossible for the different factions to come together in a common effort," he wrote. "The Condon Study was a microcosm of the Sixties."

Other critics were less kind. "(The Condon Report is) one of the most deliberate cover-ups ever perpetrated on the public," said John Northrop, founder of Northrop Aircraft Company. "The 21st century will die laughing at the Condon Report," commented University of Arizona physicist Dr. James E. McDonald.

"What sort of scientific investigation is it that assumes the answer before starting," grouched Hynek, adding that several scientists confided to him that it was their study of the Condon Report that convinced them UFOs should be taken more seriously.

But the Condon Committee achieved its purpose --- it was made plain to the scientific community that there would be no merit or grants in the study of UFOs, public and media discussion of the subject was closed off, congressional inquiries were sidetracked and Hynek, by now an outspoken champion of further UFO study, was dropped after 20 years as an Air Force consultant. All records of the Condon Committee were transferred to a private home and burned.

Toward the end of 1969, a relieved Air Force high command, buttressed by the Condon Report, terminated Project Blue Book which in hindsight can be seen to have been nothing more than a public relations front with the best cases being passed under the table to a more secret UFO group. Many of the strongest UFO cases in the Blue Book files disappeared. The government had officially closed the book on UFOs. It seemed that the UFO era had come to an end.

The only problem for the government was that those pesky UFOs refused to go away.

In fact, from the Sixties through the end of the 1990s, reports of UFO sightings and contact only increased. The more notable cases included a rash of sightings beginning in September, 1965, in New Hampshire and lasting through late November when a massive power outage blacked out most of the northeast; the well-documented abduction account of devout Christian Betty Andreasson from her Massachusetts home in January, 1967; the reported abduction of Nebraska Patrolman Herbert Schirmer who said he was told of an alien "breeding analysis" program; the first documented animal mutilation of the horse "Lady" (misidentified in some accounts as her mother "Snippy") in Colorado during September, 1967; many UFO reports made by U.S. servicemen during the Vietnam War; the reported abduction of two Mississippi fishermen in October, 1973; the widely-publicized abduction report of laborer Travis Walton from a national forest in Arizona in November, 1975; the irradiation of Betty Cash, Vickie Landrum and her seven-year-old grandson near Houston, TX, in December, 1980, when the women claimed to have encountered a large spherical UFO belching flames and surrounded by helicopters; the largely unreported UFO encounter by U.S. Air Force personnel --- including the base commander --- in late December, 1980, in the Rendlesham Forest near Ipswich, England, and the notorious controversy over sightings and photographs of UFOs over Gulf Breeze, FL, between November, 1987, and May, 1988.

Sightings and abduction claims have only increased since the U.S. Government ended any official interest with the closing of Project Blue Book in 1969. Added to this are the secondary issues of the animal mutilations and the enigmatic crop circles, which while mostly confined to the English countryside also have been reported in the United States and many other countries. The mutilations, which have been reported almost all states and have continued through 1998, still are attributed to predators or Satanists by a indolent news media. However, the fact remains that after more than 30 years, no one has been prosecuted for draining all blood and surgically removing organs from animals.

Another secondary issue involves one of the US Government's most secret places --- the Groom Lake facility in southern Nevada better known as Area 51. It was in this remote desert location that top-secret aircraft such as the U2 and SR-71 were developed. Today, more hush-hush projects are underway, protected by government-hired private security agents employed by the Wackenhut Corporation. "Multiple reports from well-qualified observers lend substantial credence to the existence of numerous secret aircraft flying from remote bases in the southwestern US, regardless of the political, funding or technical arguments against that possibility, " reported the prestigious periodical Aviation Week & Space Technology, whose editors concluded "there is substantial evidence that another family of craft exists that relies on exotic propulsion and aerodynamic schemes not fully understood at this time."

Today there is no doubt that such super-secret craft with amazing technology are being tested at Area 51 and other locations. The question has become, "Where did the United States get such technology?" The mundane answer would be that we simply have some smart scientists and engineers. While this is undoubtedly true, there is a more unearthly answer. Many people, including Astronaut Edgar Mitchell, believe that some of our most recent aircraft use technology gained from crashed or donated UFOs. The late Col. Philip Corso revealed that in the early 1960s as head of the Foreign Technology Desk of the U.S. Army's Research and Development Department, he personally presented select American companies with technology obtained from the 1947 crashed Roswell alien disc.

The statements of Corso, Mitchell and others support the testimony of physicist Robert Lazar who has publicly claimed to have reverse engineered UFOs at Area 51. Numerous attempts to discredit both Lazar's work record as well as his scientific explanations of UFO workings have met with little success. The available evidence indicates Lazar may well have done what he claims and no one has clearly refuted his physics.

Despite all this, the US Government continues to maintain it has no interest in UFOs. In addition to the information regarding Area 51 and other locations now available, the recent release of documents revealed an ongoing government UFO investigation . The old 4602nd Air Intelligence Service Squadron evolved

into the 1127th Air Activities Group which investigated UFOs under a program called Project Moon Dust. Initially the government denied Moon Dust's existence but recanted after more documents came to light, including a State Department memo to "All American Diplomatic and Consular Posts" advising that Moon Dust was to be notified in all "cases involving examination of non-US space objects or objects of unknown origin."

Col. George M. Mattingley, Jr., chief of the Congressional Inquiry Division in the Office of Legislative Liaison, attempted to correct the record by admitting that Project Moon Dust and another program, Operation Blue Fly, did exist for the purpose of retrieving fallen Soviet space equipment but were discontinued due to lack of activity in the late 1950s. However, other released documents indicated that Moon Dust and Blue Fly were still operational in the late 1980s, though perhaps under another name.

It is now obvious that while the government ended its official UFO inquiry --- Project Blue Book --- in 1969, its covert investigations continue today.

Regardless of whether the MJ-12 documents now in public hands are authentic, there exists a highly-secret group at the top of the American power structure that operates in the manner they describe. Washington newsman Anthony Kimery was told that Project Blue Book was disbanded to make way for a "top-secret government agency to assume centralized control over UFO-related matters."

All investigations into the legitimacy of the controversial MJ-12 papers have hit dead ends. Some serious questions have been raised about type faces and signatures on the papers. However, even an inquiry by the FBI to determine if any security violations had occurred could neither fully discredit nor authenticate the documents. Pulitzer Prize nominee and author Howard Blum quoted one FBI agent involved in the MJ-12 probe as saying, "All we're finding out is that the government doesn't know what it knows. There are too many secret levels. You can't get a straight story. It wouldn't surprise me if we never know if the papers are genuine or not."

The US Government's fixation on UFO secrecy apparently extends to other nations as well. Many foreign officials have stated that they were told not to talk about UFO incidents by US authorities. United Nations documents confirm that ranking US military officers are "at the heart of UFO operations". Dr. Robert F. Creegan with State University of New York traveled to Britain in the mid-1980s seeking information on UFOs. He later reported, "It was made evident to me that the British...had to appease the American military-industrial complex and so could not assist one in a search for truth."

In 1991, President Bill Clinton appointed his close friend Webster Hubbell associate attorney general of the Justice Department. According to Hubbell, Clinton asked him specifically to find out "Who killed JFK?" and the truth regarding UFOs. Hubbell said he felt he was stonewalled and was unable to secure this information for his chief.

Following Hubbell's disclosure, Dr. Steven Greer, director of the Center for the Study of Extraterrestrial Intelligence (CSETI), revealed that in 1993, he presented a UFO briefing to then CIA Director Adm. James Woolsey. According to Greer, an upset Woolsey was stymied in his attempts to obtain relevant documents from CIA files.

If even the President of the United States and the director of the CIA cannot get to UFO information, it would appear as though secrecy in this issue has extended far beyond any normal security considerations. It prompts many to wonder, "Who's really in charge?"

It is a supreme irony that the American public, who pay such lip service to the ideals of freedom and openness, should have allowed the creation of a national-security state that may be suppressing what can only be the greatest discovery in all of mankind's history --- that we are not alone in the universe.

The New Majestic Twelve Documents

What would happen if an extraterrestrial spacecraft crashed to Earth in [Pleasantville](#), USA, in 1947?

At a time when the most advanced technology personally familiar to the common man was a Ford truck, at a time when we had no transistor, no laser, no satellites, no moon landing, no Hubble Telescope, no Star Wars or Star Trek, and not even a hand calculator, how would leaders react to such an astonishing and frightening event?

Read the [Day After Roswell](#) to consider one highly respected and decorated Army colonel's story. Although his view of the Cold War is somewhat paranoid – very typically so for his generation – Colonel Philip Corso received a glowing commendation and forward from Senator Strom Thurmond for the book, which made it into the first printing and was later retracted when the subject matter was revealed. Corso signed an affidavit testifying to the truth of his statements before his death in 1998. Note that Corso's co-author William Birnes is widely known to have exaggerated and mistaken certain details from the original manuscript, which I have had the opportunity to see at a distance.

Also read [Project Mindshift](#) and consider whether there may exist a connection between modern science fiction and the UFO situation.

In 1998, several remarkable new MAJESTIC 12 documents have emerged which dramatically expand the image available to examine of the alleged organization originally charged with the assessment of the UFO situation. These remarkable documents can be examined at ...

http://www.thewordistruth.org/narr_article.cfm?id=765

An authentication analysis has been underway since 1996, and continues today. The ongoing and up-to-date authentication discussion can be found at ...

http://www.thewordistruth.org/narr_article.cfm?id=116

Now that the new MAJESTIC 12 documents are in broad circulation, it is appropriate for me to make a few comments regarding their authenticity and their role in support of the hypothesis contained in The Truth.

Let me first state for the record five key philosophical points that frame my sponsorship of the publishing of these documents:

- 1- I have no economic motive in advancing this hypothesis or these materials. I have every conceivable career disincentive for pursuing this research. However, this line of discovery in my opinion is more important than any individual's career, and I am putting my money where my mouth is to do this.
- 2- Only those who have taken the time to read extensively in the domain are qualified to assess the historicity of the UFO phenomenon. Outright rejection of the evidence without comprehensive review of the research in print across hundreds of books is close-minded, unscientific, and indeed irresponsible in the extreme. It is also quite understandable given decades of government disinformation which, right or wrong in its genesis and continuation, was specifically designed to create a "giggle factor" surrounding the subject.
- 3- I will not selectively listen only to the evidence that simply agrees with my own previously stated views, nor will I reject evidence because it is contrary to conventional presumptions of scientists. The case "for" the reality of the UFO phenomenon is rather comprehensively summarized in The Truth, and as credible and rigorous new evidence materializes, it will be added to the site. As I discover rigorous skeptical examinations of individual documentary or historical evidence, I will

include them also as part of the appropriate sections of The Truth, and/or use them to modify my own position as reflected in the narrative. Everyone will have the ability to read such perspectives and decide for themselves what is true.

- 4- The UFO phenomenon can no longer be dismissed because of an apparent incompatibility with the laws of physics, such as the speed of light limitation on interstellar travel. There are now numerous well-grounded physics papers and books in circulation that clearly point towards the ability to engineer spacetime itself, which effectively provide clear plausibility to the concept of gravitational propulsion. If we have the intellectual courage to take the Drake equation and project into it technology capable of engineering gravity, we will be left not only with the plausibility of something like the observed UFO phenomenon, but the overwhelming likelihood of it. This is a simple scientific fact.
- 5- I am unwaveringly committed to a rigorous pursuit of the truth, wherever that may lead. www.TheWordIsTruth.org will contain my best effort to present the complete and true story spanning the subjects touched upon within it.

With those points as a foundation for the evolution of my book, I would like to state my own views on the question of how the authenticity of the MJ-12 materials bears on the historicity of the events they describe.

After years of analysis of previously-published MJ-12 documents (such as the work conducted by Stanton Friedman) and particularly in light of the newly released MJ-12 documents, one thing is clear to virtually all serious researchers regardless of whether they believe in the pristine authenticity of the new materials: many of the MJ-12 documents simply must have been authored by or within the military-intelligence community of a superpower. This fact alone speaks volumes when considered next to the mountain of other UFO evidence. If the documents are pristine and true, they were written by the individuals therein mentioned or assistants. If the documents are partial or complete forgeries, then they were written by an intelligence agency of the government of either the United States or the Soviet Union. In this sense, even the serious-minded skeptics are hard pressed not to agree that they are "authentic" in terms of military-intelligence authorship. The question is, could they be authentic in military-intelligence authorship and not authentic in detail? And if so, what does that say about the most important authentication question of all: the basic history they describe?

It is almost certain that the security infrastructures created to contain the history of the crash of an extraterrestrial vehicle in 1947 would ultimately wind up creating forgeries for whatever purpose. Three ulterior purposes immediately spring to mind: (1) documents seeded with small but critical flaws, destined to one day leak and discredit their entire chains of custody and all of the surrounding research, thereby helping to seal the cover on the program, (2) documents fabricated to mis-inform Cold War allies or enemies or proxies thereof about the details of the events, and (3) documents fabricated to disinform internal constituencies: competing branches of government, particularly nosy investigators, diligent reporters, or the public at large. But whether every single MJ-12 document is completely accurate in historical detail, genuine in authorship, or pristine in generation is not the issue. It is obviously possible that an intelligence agency of either superpower fabricated one or more of the documents for one of the purposes described above, or some other purpose. However, I believe that it is exceedingly improbable that such documents were created in a vacuum – created as complete fiction, in the complete absence of an authentic phenomenon and original historical events. The mere existence of such documents as these, containing the verifiable details that they do, is powerful evidence for the reality of the basic UFO phenomenon, irrespective of whether a "crash" occurred in 1947.

Indeed, I have personally sat across the table from top leaders and brilliant minds of the military and science, on multiple occasions, who have confirmed the basic truth of the UFO phenomenon. Those who know me best know that I would never have bet my reputation and my career without such explicit confirmation. I have nothing – nothing – to gain by lying. I am telling the truth. Based upon what these leaders have told me, I do not believe that most elected officials or military intelligence officials have much

more knowledge than the general public on the subject of UFOs. The best private information I have been able to secure is that the organization responsible for managing the domain is comprised of less than 1000 people and was long ago privatized and pulled entirely outside of the machinery of the political and military command structure. It reports to no publicly elected or appointed leader, but rather a self-selected governing body which today is comprised of a larger number of industrialists than military or civil officials. It is believed that a growing minority of this governing body wishes to move towards public release of the secret in the near future.

For those involved in UFO research, I strongly suggest that you focus your energies on tying together the historical events and people described in the documents, rather than exclusively concentrating on the history of the pages themselves. As far as "proving" the pristine authenticity of the MJ-12 documents and their history is concerned, it is really only critical to validate any one of the principal documents. If only a single major document is validated, then MJ-12 was factual, and its confirmed existence and basic mission is to be added to the already overwhelming and far more powerful testimonial evidence in favor of the reality of the UFO phenomenon. Focusing too much time on the provenance of the pages themselves is a mistake, because the most compelling proof that their storyline is basically true – short of new materials or events unfolding – is bound to come in the form of other corroborating historical research and witness testimony.

In the final analysis, the skeptic is charged with doing far, far more than discrediting these newly released documents through speculative criticisms based upon typographical errors or one or two seemingly anachronistic details, because the historicity of the documents is not the most important question. The most important question is the historicity of the phenomenon they describe. There is **OVERWHELMING** evidence that the UFO phenomenon is real. Therefore, ANY such well-crafted documents – pristine in every detail or not – argue in behalf of the reality of the UFO phenomenon. It is astronomically unlikely that the massive and generally self-consistent evidence of extraterrestrial activity over the past five decades is simply a large coincidence or the product of a several good hoaxes.

I ask the skeptic to step forward and comprehensively refute all the evidence: the millions of sightings, the thousands of reported landings, the thousands of abduction experiences, and the countless highly strange accompanying phenomena for which no one yet has a clear explanation: crop circles, cattle mutilations, etc. The refutation must take into account the following facts: (1) compelling UFO evidence spans all nations, modernized or not, regardless of whether their populations have been exposed to science fiction, (2) the evidence spans far more than 50 years – rather it goes back thousands of years, peppered throughout the ancient books and scriptures of our ancestors, and (3) the evidence is found to be exactly as it should be found when describing a phenomenon advanced far beyond humanity: it borders on the incomprehensible. How is a family of monkeys to interpret a Palm Pilot III? Or a Boeing 777? Or a football game? Or a scientist shooting at them with a dart to tranquilize, abduct, examine, and release them? Such a comparison is entirely fair and completely literal.

I am not aware of the existence of sufficient contrary data to refute the massive accumulation of evidence supporting the reality of the UFO phenomenon. Indeed, let me restate perhaps the only truly powerful scientific argument against its plausibility: gravitational propulsion is not possible, therefore we have not been and are not being visited by beings from other worlds. This argument is ultimately the only basis upon which the UFO phenomenon can be rejected as a product of our collective imagination.

So I ask you this: what if it is possible to engineer gravity? 100% of the scientific presumptions against interstellar travel – and by direct implication extraterrestrial visitation – must immediately be extinguished if there is a single credible demonstration of practical gravity engineering. There is good evidence to believe that open science is now flirting with such a demonstration, and it is reported in my book.

But perhaps the most significant motive to consider seriously the possibility that the UFO phenomenon is based in fact is that any integration of the majestic history of science with the profound history of faith would clearly demand some connective concept of such a high order. The reason I have not "called out" the

MJ-12 documents within The Truth web site more prominently than the narrative is because we can begin to comprehend the UFO phenomenon only if we are capable of putting it into a coherent world view. How else can the implications of such astonishing information possibly be considered? The Truth represents one continuing effort to rigorously integrate a world view given such knowledge. It proposes that several billion faithful human beings across history have indeed been doing their faltering best to follow their truth, just as several hundred million scientists have done more recently. If we reject the hypothesis of The Truth and nothing replaces it that can as coherently connect science and faith in history, then we must ask ourselves how we can avoid spiraling towards one of three unambiguous and harsh futures: science deconstructing faith as fantasy, religion destroying science as evil, or perhaps economics destroying both as inefficient.

If the hypothesis of The Truth is correct, or if another hypothesis can bring these questions into coherence with equal completeness, then there is indeed a grander integrated story of our history. In that case it is not only important, but vital at this time to step beyond our preexisting world view and expand the boundaries of our imagination. If humanity is indeed the subject of a multimillennium process of education, if not genesis itself, it is of fundamental importance that we demonstrate our ability to think, study and teach on a new level.

Will we choose to step out of our [Truman Show](#)?

If you wish to receive a regular update on happenings in the UFO research community, I recommend you subscribe to Michael Lindemann's [CNINews](#). As Mr. Lindemann does, you must keep an open mind and remember that the UFO domain is littered with fantasy and garbage. At the core of this can be found information of high quality and extreme importance. It's taken me over a decade to separate one from the other.

**TEACHERS HAVE TAUGHT US
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THEY ARE WATCHING US NOW.
THE COSMOS IS THEIR OCEAN...**

Imagine that one day a new city is constructed somewhere on Earth, a "Universe City", where a spacetime port is established as a centerpoint of interaction among Earth-dwellers and visitors from elsewhere.

Imagine a place of learning in such a city where every classroom is a different world's history book, and every field trip, a voyage to another planet. What are the kinds of things we would learn at such a place?

Their Technology

Dr. Hal Puthoff, a respected theoretical physicist, had the following to say about a book titled [Unconventional Flying Objects](#) by Paul Hill:

"To the degree that the engineering characteristics of UFOs can be estimated by empirical observation, in my opinion the above-referenced, recently-published book provides the most reliable, concise summary of engineering-type data available. The data were compiled over decades of research by a Chief Scientist-Manager at NASA's Langley Research Center who acted as an informal clearinghouse for UFO-related data. The strength of the compilation lies in its thoughtful separation of wheat from chaff, and the analysis of the former into coherent patterns, including detailed calculations. Perhaps surprising to the casually interested, under careful examination the observations, rather than defying the laws of physics as naive interpretation might suggest, instead appear to be solidly commensurate with them, as the following discussion shows.

One of the most consistently-observed characteristics of UFO flight is a ubiquitous pattern in which they tilt to perform all maneuvers. Specifically, they sit level to hover, tilt forward to move forward, tilt backward to stop, bank to turn, and descend by "falling-leaf" or "silver-dollar-wobble" motions. Detailed analysis by Hill shows that such motion is inconsistent with aerodynamic requirements, but totally consistent with some form of repulsive force-field propulsion. Not satisfied with paper analyses alone, Hill arranged to have various forms of jet-supported and rotor-supported circular flying platforms built and tested. Hill himself acted as test pilot in early, originally-classified, versions, and found the above motions the most economical for control purposes. Pictures of these platforms are included in the text.

In an effort to examine the force-field propulsion hypothesis yet further, Hill analyzed a number of cases involving near-field interactions with an apparent craft in which some form of force was in evidence. These include examples in which a person or vehicle was affected, tree branches were parted or broken, roof tiles were dislodged, objects were deflected, and ground or water were disturbed. Under close analysis the subtleties of these interactions combine to point unequivocally to a repulsive force field surrounding the craft, while discriminating against propulsion mechanisms involving jet action, pure electric or magnetic effects, or the emission of energetic particles or radiation (although the latter may accompany the propulsive mechanism as a secondary effect).

Further detailed investigation indicates that the particular form of force field propulsion that satisfies observational constraints is what Hill labels a directed acceleration field; that is, a field that is, in general, gravitational-like in nature, and, in particular, gravity-canceling. Such a field acts on all masses in its sphere of influence as does a gravitational field. Corollary to this conclusion is that observed accelerations ~100 g's relative to the environment could be sustained without on-board high-g forces.

One of the consequences of the above identification of field propulsion type by Hill is his conclusion, supported by detailed calculation, computer simulation and wind-tunnel studies, that supersonic flight through the atmosphere without sonic booms is easily engineered. Manipulation of the acceleration-type

force field would, even at supersonic speeds, result in a constant-pressure, compression-free zone without shockwave in which the vehicle is surrounded by a subsonic flow-pattern of streamlines, and subsonic velocity ratios. An additional benefit of such field control is that drops of moisture, rain, dust, insects, or other low-velocity objects would follow streamline paths around the craft rather than impact it.

Another puzzle resolved by Hill's analysis is that craft observed to travel continuously at Mach 4 or 5 do not appear to generate temperatures sufficiently high to be destructive to known materials. In other words, UFOs appear to prevent high aerodynamic heating rates, rather than permitting a heating problem, then surviving it with heat-resistant materials as is the case of the Shuttle whose surface temperatures can reach 1300 oC. The resolution of this potential problem is shown by Hill to derive from the fact that the force-field control that results in the prevention of shockwave drag as discussed above is also effective in preventing aerodynamic heating. In effect the airflow approaches, then springs away from the craft, depositing no energy in the process.

A further example of the type of correlation that emerges from Hill's analytical approach is provided by an analysis of the economy of various flight-path profiles. It is shown that high-angle, high-acceleration departures on ballistic-arc trajectories with high-speed coast segments are more efficient than, for example, intermediate-level, horizontal-path trips, both in terms of required impulse-per-unit-mass and time-of-flight parameters. This he correlates with the observation that UFO departures are of the dramatically high-angle, high-acceleration type.

Also of interest is Hill's analysis of the spectra and intensity of an apparent plasma sheath surrounding such craft, the details of which correlate with what one would expect in terms of it being a secondary effect associated with the propulsion system, for example, a blue shift and intensity increase during a "power-up" phase, and the opposite during hover or landing maneuvers. An additional fine point that emerges from this analysis is resolution of the paradox that observation on a direct line-of-sight to a near part of the craft can reveal a metallic-like structure while the attempt to observe the outline of the craft, necessarily by an oblique line-of-sight, results in an indistinct blur. Analysis shows this to be a reasonable outcome of an expected re-absorption of reflected light by the surrounding plasma in the longer-length path associated with the more oblique view.

Another typical nugget of information is found in Hill's discussion of the results of the analysis of a possible UFO artifact, the famous Ubatuba magnesium fragments claimed to have originated from an exploded unidentified craft near Ubatuba, Brazil. Laboratory analysis of the samples found the magnesium to be not only of exceptional purity, and anomalous in its trace composition of other elements, but 6.7% denser than ordinary pure magnesium, a figure well beyond the experimental error of the measurement. Hill's calculation shows that this observation can be accounted for by assuming that the sample contained only the pure isotope Mg26, rather than the naturally-occurring distribution among isotopes Mg24, Mg25 and Mg26. Since the only isotope separation on a significant scale in terrestrial manufacture is that of uranium, such a result must be considered at least anomalous, and possibly as evidence for extraterrestrial manufacture.

Additional calculations concerning the parameters of interstellar travel (including relativistic effects), and the energetics of such travel, have been performed and are included in tabular and graphical form. The wealth of material in these sections, along with discussion of the broad implications of this material, reveal the dedication and thoroughness of Hill's approach to his self-assigned task.

In the final analysis, one must conclude that Hill has assembled as good a case as can be made on the basis of presently available data that the observation of some "unconventional flying objects" is compatible with the presence of engineered platforms weighing in at something around 30 tons, which are capable of 100-g accelerations and 9000-mph speeds in the atmosphere. Perhaps more important for the technical reader, however, is Hill's supporting argumentation, based on solid analysis, that these platforms, although exhibiting the application of physics and engineering principles clearly beyond our present-day capabilities, do not appear to defy these principles in any fundamental way.

Their Science

"Any technology sufficiently advanced is indistinguishable from magic."

-- Arthur C. Clarke

What must the sciences be for life forms perhaps millions of years evolved beyond humanity?

Perhaps their sciences might be blanketed by a new science of generalist studies called omniscience, defined as a discipline for and belief in establishing the truth among the experiences of life. It would qualify as a religion because it demands faith in one tenet above all, that a love for truth is enshrined as the path towards betterment. It qualifies as a science, because its hypotheses are readily and objectively testable.

Omniscientists would test hypotheses made from learning the secrets of the specialists seeking fact and the studies of the generalists seeking meaning. Indeed, in such a vision, truth would be the product of fact and meaning.

Whatever they call their sciences and their faiths, what we will learn from them will boggle our minds.

The first visitors to our world must have mastered the science of space-time.

With space-time as their mechanism, whether they be strictly mechanical or not, the spacecraft of these beings must have the ability to move by warp propulsion, yielding travel effectively at arbitrary superluminal velocities. Their craft slip through the fabric of space-time as if they are gravitationally falling towards their destination. They travel into the depths of space-time, leaving the present of their point of origination and voyaging towards the present of their destination.

They can leave Earth and travel among worlds as we do among cities on vacations and business trips. At the mid point of their voyages, if they stop, they witness the literal past of both their source and destination, in the form of old light just then reaching their point in space-time. With a sufficiently powerful telescope pointing back at Earth, they could resolve and record events occurring as they did hundreds of years ago here. But they probably wouldn't need to, because there can be little question that at least some visitors to this world somehow recorded at least several important moments in Earth history. Is it possible that we could one day watch a 3-dimensional film of a real tyrannosaur on a hunt for food? Or the crucifixion of Jesus?

But when exploring space, this view of the past of your destination is useful, for it teaches you about a place before you ever reach it. Crafts are equipped to examine the light striking them from their destination, for all kinds of navigation and scientific processes.

With spacetime machines, these beings have acquired the means to tap the vacuum of spacetime for unlimited and ecologically cost-free energy. Basketball-size generators are sufficient to power gravitational spacecraft, or any other machinery and electronics requiring energy. Every home is lit, every shower is warm, every vehicle is fueled, and there are no dangling powerlines, burning gasolines, or constipating dams.

They may even have developed the ability to employ control of space-time to accomplish such wonders as teleportation or replication – essentially through some kind of Xerox machine for patterns in space-time. Perhaps even the ability to communicate over cosmic distances instantly and in real time.

Their biological sciences will be even more astounding. They will have the ability to work DNA as a sculptor forms clay. Imagine equipping a college biology student with a new kind of bioengineering tool

like "Visual Basic for DNA" and you'll glimpse the awesome power and responsibility of such knowledge.

If it is ethical to do so, these beings have created all kinds of new plants, animals, and perhaps even servants, through bioengineering the double-helix. They may have even done so on this planet itself in the past.

They have engineered the ability to heal bodies, most likely either through patterned growth stimulation or temporal biological damage reversal.

They have engineered the ability to control their home world environments through managed weather, and form communities in harmony with balanced ecosystems.

They have very possibly engineered entire worlds, and planned world histories for promising young species such as we.

The greatest question I have of their science is where the natural and ethical balance exists between biology and technology.

**TEACHERS HAVE TAUGHT US
THROUGH THE AGES.
THEY ARE WATCHING US NOW.
THE COSMOS IS THEIR OCEAN
AND THEY HAVE BEEN MINDFUL...**

If the hypothesis of this work is correct, then at some point in the foreseeable future the teachers from our faiths will return to Earth in a formal and open way. The process of actually doing so would be sophisticated and long ago generally planned. How would it managed?

Earth's recorded history is replete with examples of why it is absolutely impossible for primitive and advanced intellectual civilizations to come in contact with one another without damage to the lesser developed society. Thus, I believe an enculturization process would be required to mitigate the otherwise potentially lethal shock to foundations of human thought and existance built over thousands of years, confronted with beings from another world. Such a process could easily require half a century.

But why would the beings above wish to keep even their existence formally hidden? Their craft have been buzzing around our skies for years, but they've "never landed on the White House lawn". And how could such a secret possibly be kept from public view within an open government like ours?

If my hypothesis is correct, our passage through the kairos is imminent, and we are advised to look to both science and scripture for advice on our reaction to the phenomenon we are witnessing.

Following are just a few of the many examples of one of the most common themes across the Bible: *Do not be afraid.*

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"Do not be afraid, Mary, for you have found favor with God. And now, you will conceive ... and bear a son, and you will name him Jesus. He will be great, and will be called the Son of the Most High." (Lk. 1:26-38)

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Then, an "angel of the Lord" appeared to shepherds watching their flocks at night; the angel "stood before them, and the glory of the Lord shone around them, and they were terrified." The angel reassured them: "Do not be afraid; for see--I am bringing you good news of great joy for all people: to you is born this day a Savior, who is the Messiah, the Lord." Then, "suddenly there was with the angel a multitude of the heavenly host, praising God and saying,

'Glory to God in the highest heaven, and on the earth peace....'" (Lk. 2:8-14)

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Then the disciples saw Jesus walking toward them on the water. As was God's message so often in the Hebrew bible , where a new challenge frightened the people, and now in what would become a Christian companion testament, Jesus saw their terror and told them simply, "do not be afraid." (Jn. 4:46-54)

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Six days later, Jesus received affirmation for what impended from his Father. Jesus took Peter, James and John to a "high mountain, by themselves." There, "he was transfigured before them, and his face shone like the sun, and his clothes became dazzling white." Mark adds, "such as no one on earth could bleach them."

(Mk. 9:2-3) "Suddenly there appeared ... Moses and Elijah, talking with him. Then Peter said to Jesus, 'Lord, it is good for us to be here.' .." While Peter was still speaking, "suddenly a bright cloud overshadowed them, and from the cloud a voice said, 'This is my Son, the Beloved; with him I am well pleased; listen to him!'" At this, the disciples "fell to the ground" in fear.

Again when faced with numinosity so holy that humans could not comprehend, Jesus said "do not be afraid." Jesus then ordered them, "Tell no one about the vision until after the Son of Man has been raised from the dead." (Matt. 17:1-9) (See also Lk. 9:28-36)

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On Sunday, after the Sabbath, at early morning, Mary Magdalene and "the other Mary" went to the tomb.

And suddenly there was a great earthquake; for an angel of the Lord, descending from heaven, came and rolled back the stone and sat on it. His appearance was like lightning, and his clothing white as snow. For fear of him the guards shook and became like dead men. But the angel said to the women, 'Do not be afraid; I know that you are looking for Jesus who was crucified. He is not here; for he has been raised, as he said: come, see the place where he lay. Then go quickly and tell his disciples. He has been raised from the dead, and indeed he is going ahead of you to Galilee; there you will see him.' (Matt. 28:1-7)

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The New Jerusalem Bible translates this portion of Paul's epistle-general to the gentile communities around Ephesus:

Do not forget, I say, that you were at that time separate from Christ and excluded from membership with Israel, aliens with no part in the covenants of the Promise, limited to this world, without hope and without God. But now in Christ Jesus, you that used to be so far all have been brought close, by the blood of Christ. For he is the peace between us, and has made the two into one entity and broken down the barrier which used to keep them apart, by destroying in his own person the hostility.... His purpose was, by restoring peace, to create a single New Man....

So you are no longer aliens or foreign visitors; you are fellow-citizens with the holy people of God and part of God's household. (New Jerusalem Bible, Eph. 2:11-20)

Keeping A Secret This Big?

How could a secret such this be kept, even by a small group? Let us review an era during which rose the pinnacle of the institutions of secrecy, the CIA's Black Operations, from 1945 to 1998

Secrets and the culture of secrecy are the lifeblood of the intelligence business. For secrecy is the cloak that allows deeds with the dagger to go unnoticed, and often unchallenged. In wartime, there is little argument that secrecy is essential to protect the lives of those going into battle. For the intelligence community, there is little difference between peace, as the public understands it, and war, which is what the spies feel they are constantly waging.

But it was war and not peace that has set the tone for American intelligence over the past 50 years. Prior to World War II, the United States had almost no functioning intelligence service of any kind and while code breaking was in its infancy, spying in the cloak and dagger sense was largely left to the diplomats, who usually find the concept of deception and seduction anathema.

The failure of American intelligence at the beginning of World War II did not mean that the nation had no appreciation of the value of intelligence. On the contrary, from the very beginnings of the Revolutionary War against the British, the colonists showed a keen appreciation of the value of spies. The Sons of Liberty, what the British would have described as terrorists, by modern standards, waged covert war against the Crown before the Revolutionary War. Thomas Jefferson used a mercenary force under William Eaton to try to topple the pasha of Tripoli; President Madison used undercover operations to stir up trouble for the Spanish in Florida. Several other presidents were to follow suit, including Theodore Roosevelt when he encouraged the Panamanian revolt against Colombia that ultimately led to Panama's independence.

Yet by the arrival of World War 2, such episodes had had little impact on America's military culture. The black arts of espionage and subversion were viewed with suspicion and disdain by the military establishment, and formed no part of standard training in either the Army or the Navy. And while the Navy's codebreakers had worked wonders in reading Japanese signals traffic in the 1930's in an operation codenamed Magic, there was no system for analyzing the product to provide sophisticated assessment of its import. Pearl Harbor was the result.

As a dismayed British Admiral reported back from Washington to Winston Churchill in London in 1941: "There is no U.S. Secret Intelligence Service. Americans are inclined to refer to 'their SIS', but by this they mean the small and uncoordinated for of 'Special Agents' who travel abroad on behalf of one or another of the Governmental Departments. These 'Agents' are, for the most part, amateurs without special qualifications and without training in Observation. They have no special means of communication or other facilities and they seldom have a clearer brief than 'to go and have a look.'"

The bombing of Pearl Harbor in 1941 taught Washington and the Defense Department a painful lesson. If there had been adequate intelligence and competent analysis, the ships and their sailors could have been moved from a sheltered and largely defenseless harbor out to the open sea.

To understand what could be done, the America looked to Britain which had been leading the fight against the Nazis in Europe. By 1941, the British Special Operations Executive (S.O.E.) was already running a very effective secret war against the Nazis in Europe and the Japanese in Asia. Running arms and trainers to guerrilla groups, taking an active part in sabotage and intelligence operations and operating extremely sophisticated propaganda and disinformation campaigns, the SOE became the model for what became the Office of Strategic Services, or OSS.

When Franklin D. Roosevelt ordered the creation of the Office of the Coordinator of Information (COI) in 1941, he laid the foundation for America's first truly modern intelligence organization, it was to be not a creature of the military but of civilians. Its head was William J. Donovan, a World War One hero, a Wall Street lawyer and a Republican who happened also to be a Columbia Law school contemporary, and firm

friend, of the Democrat FDR. He had demonstrated a flair for intelligence gathering on several informal missions in Asia and Europe, beginning with his own honeymoon in Japan in 1919, and seemed the natural choice to lead the COI. He was also the enthusiastic choice of the British who had been working hard behind the scenes to try and get a man they considered their close friend into a position of such power.

Donovan was not a man to make the military chiefs any more comfortable about the creation of a civilian intelligence agency beyond their purview. His initial recruits were drawn from the same East Coast Ivy League establishment that produced him. One of his first was Archibald MacLeish, the librarian of Congress. Academics such as historians James Phinney Baxter III, William L. Langer and Conyers Read, and economist Calvin Hoover formed the initial team at COI.

It was at this point that the divisions, compartmentalization and competition that have so characterized America's modern intelligence and military establishments had its roots. Although COI was formed in the summer of 1941, Donovan was never let in on the existence of the Magic codebreaking operation. As he began to work more closely with British intelligence on joint operations in Europe, and importing some of their centuries-matured skills in subversion and deception, military heads started to be suspicious of his growing power base. Even J. Edgar Hoover at the FBI grew nervous. So while COI was performing a function the military had avoided, and was operating at the direct behest of the president, moves were made to kill the infant that was starting to flex its muscles beyond the oversight of the military brass. Donovan saw this, and headed off the challenge by proposing to place COI under the control of the Joint Chiefs of Staff in June 1942, at which point the outfit assumed the name of the Office of Strategic Services (OSS).

As OSS grew, so did the ranks of Ivy Leaguers who staffed it. OSS became a mocking acronym for Oh So Social, as senior personnel who were as comfortable in Wall Street law offices, banks, or genteel East Coast drawing rooms developed the business of covert warfare. The men and women generally came from the same background, understood the same traditions and were outside the traditional culture of Washington. They were distrusted by the insiders and, like many intelligence officers, relished the role of elitist outsiders and so a culture that continues to this day was born. It was a culture that produced the future DCI, and president, George Bush. The DCI under Ronald Reagan, William Casey, was one of the early members of OSS, so the tone of these early days was to be perpetuated decades later.

There was another important foundation stone laid at this time too. The early intelligence community founded and run in wartime, did whatever was necessary to achieve strategic goals or tactical missions. There was little regard to the niceties of the law or the constraints of morality, merely a constant requirement to achieve the mission and to do so in utmost secrecy. Wartime is like that, of course, but peace is a very different world. It would be many years before the American intelligence community embraced the difference between peace and war and understood the distinctions between legal and illegal, moral and immoral. In this, American intelligence was little different from the Soviets, the British or the French but the huge growth of American intelligence during the Cold War combined with its elitist heritage and unchallenged operational ethos created a remote and unsupervised community that, for a democratic society, operated with unusual freedom.

Elitist or not, OSS performed well, cooperating closely with Britain's SOE in running covert operations throughout the war, harrying the Nazis and the Japanese and contributing significantly to the Allied victory. As the end of the war approached, and as Donovan proposed plans for transforming the OSS into a peacetime intelligence agency, the whole operation was very nearly derailed by a black propaganda campaign wielded, it is thought, by J. Edgar Hoover. Newspaper articles alleging the creation of a US Gestapo - "Sleuths Would Snoop On U.S." one read, a superb irony if indeed Hoover was behind the leaks of Donovan's plans - provoked public outrage, and with FDR now dead, Donovan's fate, and that of the OSS, was sealed, victims of inter-agency in-fighting and bureaucratic jealousy.

Donovan's legacy would live on, however. President Harry Truman may have decided to disband OSS, but he believed in the value of a functioning intelligence service, and on January 22nd 1946 issued the directive that created the National Intelligence Authority (NIA), which would oversee the operation of the Central

Intelligence Group (CIG). The first head of the CIG was Sidney W. Souers, a businessman from the Mid West like his friend, President Truman. He was swiftly succeeded by Air Force General Hoyt S. Vandenburg, a man whose diplomacy and background Truman felt would help the fledgling outfit meld gracefully with the military establishment. Vandenburg proceeded to build the CIG into a reasonably sized outfit numbering some 800 officers, largely by taking back responsibility for clandestine operations from the War Department, which had briefly taken control after the disbanding of OSS.

It was the National Security Act of 1947 that took CIG from being an agency that operated at the behest of the Presidency into a fully-fledged, and legitimate, part of the American government under the new name of the Central Intelligence Agency (CIA). It was also this Act that created the loophole through which the CIA has used to justify a swathe of morally, legally and ethically questionable operations, underpinned by the same culture of wartime secrecy that pervaded OSS during the war. This loophole consisted of a phrase tacked onto the end of the CIA's laundry list of legislated responsibilities. These included "advising the NSC (National Security Council) on intelligence, making recommendations on related matters, producing intelligence estimates and reports, performing 'additional services of common concern' for the government-wide intelligence community and performing 'such other functions and duties related to intelligence affecting the national security as the National Security Council may from time to time direct.'" The phrase "such other functions", turned out to be the perfect cover for any covert operation the CIA wished to run.

At the time the CIG transmuted into the CIA, both America and the Soviet Union were trying to consolidate their post-War positions in the rubble-strewn continent of Europe while at the same time trying to undermine that of the other. Economies were in a shambles, social infrastructure virtually non-existent and political systems in Germany and the now-occupied states of Eastern Europe beholden to the military administrations of the Four Powers, America, Britain, France and Russia. The fear and suspicion of this era, fuelled by the existence of nuclear weaponry, created the battlefield on which the new CIA would be waging its covert war for the next forty years. Whether it was in the Soviet Union, its European satellites or in countries that actually were, or were perceived to be, Soviet surrogates the world over, the Cold War defined the CIA.

The transition from the 'Hot War' against Germany and Japan to the Cold War against the Soviet Union and its allies was virtually seamless for many in the intelligence community. Fresh from the defeat of the Nazis, here was a new and just as threatening enemy who allied leaders, such as Winston Churchill, were warning could pose a clear and present danger to the democracies in Europe and America. It was a convenient justification for business as usual.

This is not to deny that in the late 1940's and early 1950's that there was no reason for fear. The acquisition of nuclear power by the Soviet Union created the specter of devastation on a scale even more horrific than that visited on Hiroshima and Nagasaki being inflicted on the American homeland. Even children talked of the "Comms" and the "Red Menace", fallout shelters were common and schoolchildren were taught to hide under their desks in the event of a nuclear attack. In Europe, diplomatic hostility between the Soviets and the other major powers led to increasing isolation of the Soviet controlled sector of Germany from the west, and the ultimate blockade of Berlin. In Asia, America was soon to be at war again, fighting under the flag of the United Nations against North Korea and the Red Chinese.

The CIA had found its *raison d'être*, and in President Dwight D. Eisenhower it had found a sponsor whose vast battlefield experience taught him the value of high-grade intelligence. Eisenhower had the vision to take an area of intelligence operations, such as SIGINT (signals intelligence) and move it to a significantly higher level. Under his watch, the National Security Agency, founded on the day of his election in 1952 (although actually signed into law by President Truman in one of the last acts of his Presidency), became a huge organization whose web of listening posts crisscrossed the globe, pouring unprecedented amounts of intelligence into the US.

The NSA was to grow into the most powerful intelligence agency in the world with responsibility for all US communications security and for Signals Intelligence (SIGINT). Some simple statistics give a measure

of its size. Inside the thousand acre headquarters compound at Fort Meade is around 2 million square feet of office space, seven acres of main frame computers housed underground, 7,560,000 linear feet of telephone wire and 70,000 square feet of permanently sealed windows.

The NSA currently employs more than 20,000 people and has a budget in excess of \$3 billion. Since its inception, tens of thousands of people have worked at Fort Meade at a cost well in excess of \$100 billion and yet such was the culture of secrecy that its very existence remained a secret until the publication of James Bamford's book, *The Puzzle Palace*, in 1982. Even so, inside the intelligence community, the joke that has lasted through the decades remains current: NSA actually stands for No Such Agency.

NSA is just one of several striking examples within the American intelligence community of the culture of secrecy that has inculcated the democratic process for much of this century. From the day it was founded until the present time, very little is known about the detailed workings of the Agency. Even those with inside knowledge will rarely, if ever, talk about what they know and the exact capabilities of the NSA continue to be one of the best kept secrets of our time. Those who have read the raw intelligence produced by the NSA talk with awe about its ability to apparently listen to any telephone conversation anywhere in the world but the details remain thin.

Eisenhower also accelerated the development of computer technology through Project Lightning, a \$25 million research project overseen by the NSA at its new HQ in Fort Meade, Maryland, and employing the brightest brains from corporations such as IBM, RCA, Sperry Rand, Philco, GE and from educational institutions like MIT. Project Lightning was one of the best investments in intelligence ever made. The sheer telecommunications and computing power it placed in the hands of the NSA dwarfed anything anyone else in the world could come up with, and made the United States the pre-eminent gatherer of electronic intelligence in the world. It was also instrumental in giving the NSA a dim, but significant picture of the strengths and weaknesses of Soviet air defenses, through the use of "ferret" missions flown by airborne reconnaissance units which deliberately triggered Soviet radar emissions, which were in turn analyzed by the NSA. An intelligence official who was connected with these missions called their achievement "one of the great secrets of the Cold War", adding, "We could have launched a strategic bomber attack over the polar icecap and the Russians would never have known".

The CIA had no need to feel blind-sided by the creation of the NSA. Eisenhower's other pet project was aerial reconnaissance. While the ferret missions could nibble at the skirts of Soviet airspace, they could not provide detailed information on what was happening deep inside the country. Eisenhower was frustrated the ease with which Soviet officials could easily learn about America's military geography through publicly available information while he was almost blind to what was happening there. His frustration was deepened in August 1953 when the Soviets detonated a hydrogen bomb without the United States having an inkling that it was about to happen. Out of this frustration grew the U-2 spy plane program, developed as a result of a task force led by James R. Killian, president of MIT, with the input of Dr. Edwin H. Land, the inventor of the Polaroid camera.

Land immediately saw the possibilities of combining the newly-developed high-flying U-2 aircraft with the latest in photographic technology, and suggested to Allen Dulles at the CIA that the agency pitch for the job of developing a reconnaissance program based on high-altitude spy photography. Dulles saw the potential immediately, and he, Land and Killian presented the concept to Eisenhower in 1954. The president signed off almost at once, but with chilling prescience closed the meeting by saying, "I believe the country needs this information, and I'm going to approve it. But I'll tell you one thing. Some day one of these machines is going to be caught and then we'll have a storm."

From the beginning, the U-2 program outperformed expectations. From 70,000 feet the aircrafts' cameras took pictures of stunning clarity and detail and Eisenhower rejoiced in the intelligence they delivered. His fears about capture were allayed by his faulty understanding that Soviet air defenses could not reach that high and by CIA officials who assured him that the flimsy nature of the U-2 would guarantee that even if one was to be hit, or to suffer a systems failure, it would disintegrate into so many pieces that the Soviets

would not be able to work out what had happened. It was a classic bit of disinformation by the CIA, who gave the pilots parachutes and cyanide capsules against the very real possibility they would survive either an attack or systems failure.

On May 1st 1960, a U-2 piloted by Gary Powers was shot down over the Ural Mountains. Soviet leader Nikita Khrushchev cleverly leaked the news out in two parts, at first revealing only that an American spy plane had been shot down inside Soviet territory. The Americans assumed the plane and pilot were completely lost and developed a cover story that was immediately blown apart by Khrushchev revealing that not only had the plane been shot down, but it was also still virtually intact, and that the pilot was alive and in custody. White House bitterness at being misled by the CIA spilled into outrage. The president's son, who worked on his father's staff, would later fume, "The CIA promised us that the Russians would never get a U-2 pilot alive. And then they gave the SOB a parachute!"

The debacle was the signal for the shifting of responsibility for secret aerial reconnaissance from the CIA to a new agency that was brought into creation five days after Gary Powers was sentenced to ten years in jail by a Soviet court. The National Reconnaissance Office was handed responsibility for the design, procurement and operation of all American reconnaissance satellites. So secret was the NRO that from the outset its budget was hidden within those of other agencies, a complete cover organization was established to disguise its existence and for 13 years even the existence of the NRO was kept totally secret. It was only a slip in a document prepared by a Congressional committee that included the acronym NRO that led reporters from the Washington Post to speculate about the existence of an organization that employs around 4,000 people with an annual operating budget of around \$5 billion.

That first article did little to lift the veil of secrecy and the existence of the NRO was not officially acknowledged until 1992.

The culture of secrecy was such that the NRO had been able to operate with minimal oversight despite the size of its budget and the thousands of people who worked there and the truly priceless intelligence its satellites were able to deliver to successive Presidents. In 1990, the NRO bought 14 acres more than was needed for a new complex near Dulles airport outside Washington DC. The surplus land was intended for two other buildings that the NRO planned to sell or lease. This piece of property speculation was done without the authority of the Pentagon or the Director of Central Intelligence. In addition, congressional investigators discovered that the \$304 million cost of the new building was 30 per cent higher than was necessary. Finally, they learned that the NRO had quietly stockpiled \$4 billion in surplus cash - more than the State Department's total annual budget. The result was the eventual demise of the NRO and the creation of a new National Imagery and Mapping Agency.

Like the NSA, the NRO with its huge budget, thousands of employees and stunning product that was used by thousands of other members of successive administrations, was able to operate beneath a shroud of total secrecy. While this undoubtedly helped the NRO do its work more effectively, it also demonstrated once again just what can happen when there is little oversight. It also showed how, despite having one of the most open societies in the world, America is able to host enormous secrets and keep them.

The brilliance of the technology behind the NRO's satellites, coupled with the advances being made in SIGINT by the NSA, fostered an almost evangelical belief in technical intelligence gathering among those at the highest levels of government that was to pervade the administration of American secret agencies for years to come. It would take decades for the United States to realize that not every picture is worth a thousand words, that cameras can be made to lie by shrewd opponents and that old-fashioned human intelligence (HUMINT) should not be totally ignored.

Coincidentally, it was in the field of HUMINT that things were going nothing like as smoothly as they were at the NSA and NRO, Gary Powers notwithstanding.

The CIA's first forays into covert operations using human assets were under the control of Frank Wisner, a

veteran of the OSS and just as much a product of the East Coast Ivy League nexus as was his OSS boss Bill Donovan. Wisner was appointed to run the Office of Policy Coordination (OPC), a bland name for an outfit that ran some of the most daring operations in early CIA history. Wisner was the brains behind the establishment of Radio Free Europe and Radio Liberty, the propaganda front organizations that did so much to feed western viewpoints to people behind the Iron Curtain. He was also behind the scheme that floated balloons carrying printed propaganda into Eastern Europe. Most critically, he negotiated with the Army to create the first paramilitary training of CIA operatives at Fort Benning, Georgia and established the precedent that his OPC would coordinate and conduct covert operations behind enemy lines. He saw the time as ripe for such operations, as did the British. There was serious dissent against Soviet rule in the Baltic states and the Ukraine, and both the British and Americans saw the potential for operations similar in style and content to the Jedburgh missions they had both run in France during the war to assist and expand the efforts of the Resistance. The operations had very limited success, and in human terms were a disaster. British and American agents were lost by the dozen, emigres that they had trained and re-infiltrated were caught and shot. Of course they could not know at the time that much of what was being planned was also reported directly back to Moscow by the British traitor Kim Philby and the Canadian spy Gordon Lonsdale. This also led to the debacle in Albania where a British and American covert operations against the Communist leader Enver Hoxha, with a view to reestablishing the monarchy under King Zog, proved abortive and costly.

They were to find more success elsewhere, notably in Iran in 1953 and Guatemala in 1954, where covert action by the CIA led to the establishment of pro-western, and most notably pro-American governments. In neither case was paramilitary force used; the results were achieved through quiet diplomacy, deal-making and promises of financial aid. Whatever the moral and ethical implications of the CIA intervening in this way, they demonstrated that the global game of chess between the forces of free market capitalism and the Communists was under way with a vengeance. Emboldened by these successes, the CIA came to believe that it could run world events according to its own set of rules and make large portions of the world unattainable to Communism; the exact reverse, in other words, of the game being played from Moscow. (Of course winning the game in Iran was crucial not just for that reason. Potential oil revenues were tremendous, and by undercutting similar efforts by the British, the CIA did much to expand American influence in the Middle East.)

After Iran and Guatemala, the CIA's covert plans went badly awry. The Bay of Pigs was the greatest fiasco of all, probably of all time, not only for the ham fisted manner of its execution but also because it demonstrated that the glamorous young president John F. Kennedy was not infallible. JFK was a firm believer in paramilitary covert ops from the start of his presidency, and on February 1st 1961 had ordered the NSC to concentrate more effort on the development of "counter guerrilla forces". By this time he was well briefed on the Bay of Pigs invasion, which took place, calamitously, on April 17th. The debacle was the end of Allen Dulles, the legendary spymaster, who appeared broken by the failure. After a reasonable grace period JFK sacked him. The most important fallout was that Kennedy shifted responsibility for paramilitary operations from the CIA to the Defense Department, and on October 1st 1961 approved the creation of the Defense Intelligence Agency, another set of initials to add to the growing panoply of three letter agencies adorning the American national intelligence landscape.

The DIA's main task was to coordinate the intelligence and paramilitary activities of the various branches of the armed services. It was crippled from the start by too many conflicting demands; the top brass wanted a broad strategic intelligence service, commanders on the ground wanted tactical intelligence. A Defense Department review panel reported in 1970, "The principal problems of the DIA can be summarized as too many jobs and too many masters."

At the CIA, the air of failure deepened as campaigns in Indonesia and Vietnam failed; so did attempts to assassinate Fidel Castro and the Congolese leader Patrice Lumumba. Operations started to spiral into fantasy land with the fabled plots of Operation Mongoose to make Castro's beard fall out, poison him with a diving suit exposed to a bacteriological agent and provoke uprisings against him by declaring him the Anti-Christ. The diving suit fiasco was especially bizarre. James A. Donovan, the lawyer who had

negotiated the spy swap of KGB agent Rudolf Abel for Gary Powers, had also managed to secure the release of 1,179 paramilitaries who had taken part in the Bay of Pigs operation. The CIA arranged for Donovan to give Fidel Castro a new diving suit, but not before the CIA Technical Services Division had impregnated the lining of the suit with a fungus that would cause an extremely unpleasant skin condition, and laced the breathing tubes with the germ that causes tuberculosis. It was a stunning bit of treachery, given that Donovan had negotiated in good faith. For whatever reason, the Donovan assistant assigned to carry the diving suit replaced it with one he had himself bought. Whether he knew, or instinctively mistrusted any gifts the CIA might bring, the lawyer disrupted one of the Cold War's strangest operations.

While the overall picture of CIA operations during this period is one of incompetence, there is an argument, certainly endorsed by the CIA, that use of covert action to influence political events, as opposed to achieving intelligence gathering, was successful beyond Iran and Guatemala. They point to influencing the election of moderates in Portugal in the 1970's and the support for the mujahadeen in Afghanistan with Stinger missiles, a vital part of a campaign that eventually led to the Soviet withdrawal in 1988. Not so worthy was the orchestration of President Allende of Chile in 1973, a democratically elected leader whose policies just happened not to coincide with the CIA's.

In 1975, the Church Committee dragged all these events under the microscope of Senate hearings, in one of the most embarrassing 12 month periods (The Year Of Intelligence) that the Agency has ever lived through. The next year, Senator Frank Church was to wonder that the CIA was directing covert action against "leaders of weak countries that could not possibly threaten the United States....(N)o country was too small, no foreign leader too trifling, to escape our attention." This did the CIA become the scapegoat for subversive actions real or imagined the world over.

Intelligence gathering operations fared somewhat better. After seeing the success of a British operation in Vienna in 1949 code name Silver, in which a tunnel was built under Soviet military headquarters and the phones tapped, the Americans decided to do the same in Berlin, giving it the code name Gold. It was a brilliant scheme in conception, flawed in execution, dotted with near-farcical mistakes and doomed from the start by treachery. As a feat of engineering, it was a marvel that engineers could clandestinely get so close to their target and tap into the enemy's phone wires. It was farcical that the heaters in the tunnel would melt the snow on the road above, causing near heart failure among the operatives, who switched off the heaters and rushed refrigeration units into the tunnel. And it was doomed because from the start of the intelligence gathering in February 1955 to when it ended in April 1956, because the Soviets knew exactly what was going on thanks to the treachery of the British spy George Blake.

Where the Soviets made a mistake was in thinking the Americans could not decipher any of the coded traffic intercepted by Gold. There was so much of it, that planeloads of tapes were flown from Berlin to Washington to be decrypted by a team of CIA analysts, and it was not until 1958, two years after the Soviets shut the tunnel down by pretending to trip over it by accident that the last of the tapes was processed. The intelligence haul was impressive, and provided a key piece of intelligence, almost by omission, that indicated the Soviets did not intend to launch an aggressive attack on Europe. No other indicator of the degree to which secrets are kept hidden from public view is needed than to report that all of the data mined by Gold in the 1950's remained classified well into the 1990's, and much remains secret to this day.

Operation Gold was the model for a similar, but much more sophisticated operation, that took place in the Soviet Union itself in 1979. In an operation code named TAW, the CIA planted a bug on underground telecommunications cables at Trpoitsk, which lies 25 miles southwest of Moscow. A CIA asset had managed to join the construction team that was laying cables for the KGB First Directorate's new HQ at Yasenevo. These cables connected the building with the heart of the communist party power base in Moscow itself. For six years, until the operation was exposed by US spy Edward Lee Howard, the CIA mined real gold from TAW. Former KGB general Oleg Kalugin called it "The CIA's greatest coup. They heard every conversation. Everything."

Two other illustrations might be helpful to understand the degree to which operational intelligence can be kept secret over long periods. In 1952, the American Navy began deploying the first of a complex worldwide undersea surveillance system known as SOSUS or Sound Surveillance System. Acoustic sensors linked to miles of cables were able to detect Soviet submarines hundreds of miles away. The network of sensors stretched from the Atlantic, to the Pacific and the Mediterranean and involved NATO submarines and surface ships, thousands of civilian contractors and thousands more analysts who delivered intelligence assessments on the SOSUS products. Although the system was officially acknowledged in 1960 virtually nothing is known about it today even though it remains active and two new systems are being deployed to improve the detection capabilities.

In the mid-1970s, the CIA ran an operation codenamed IvyBells which involved the laying of a waterproof pod on top of a Soviet communications cable in the Sea of Okhotsk. The pod was able to intercept all the top secret communications between the Soviet submarine and naval bases on the Kamchatka peninsula and other Soviet commands. The pod was serviced by special nuclear submarines that picked up the tapes and replaced them. Ivy Bells worked perfectly for six years until the operation was betrayed by Ronald Pelton, a Soviet spy. Once again, it was an example of hundreds, perhaps thousands, of people intimately involved in a top secret intelligence operation for several years without any compromises.

Keeping secret the intelligence gathered in old wars is a hallmark of both British and American attitudes towards secrecy. The operation at Bletchley Park where during World War 2 British scientists cracked the Nazis' Enigma code was not revealed until over 25 years later, and even then details were not complete.

To understand just how closed American thinking on secrecy remains, one need only examine the historic meeting between CIA Director Bob Gates and his KGB counterpart Yevgeni Primakov in Moscow on October 15th 1992. In a post-Cold War gesture of goodwill, Gates had accepted (at the encouragement of President George Bush) Primakov's invitation to meet and discuss a more cooperative future relationship. Gates was in no mood to fall for any Soviet romancing, and cautioned against any undue openness. "The problem with our people is that they want to say too much," he later recalled. "At the slightest prompting they want to show off how much they know and how they know it. So I had agreed a very limited agenda and a clear structure to the meeting so that we would give a little and if they responded then we would give a little more. But if we gave a little and got nothing, then we would leave." On the face of it, that was reasonable caution. The "little" that Gates chose to offer involved intelligence findings about the North Korean nuclear program. It was bound to be more than the Russians knew, he reasoned, but did not involve anything really sensitive. In other words, it was a pretty thin offering. In return, he was handed a bounty of intelligence on the North Korean chemical and biological weapons program, demonstrating it to be far more advanced than the CIA's own intelligence had suggested.

To illustrate further Gates' state of mind as he approached this historic, and highly secret meeting: he asked his staff to come up with a nugget of intelligence that he could offer the Russians as a gesture of goodwill. What they gave him was Project Jennifer, the 1974 operation to lift a sunken Soviet nuclear Golf-2 submarine from the Pacific seabed. With the help of Howard Hughes who leased the specialist salvage vessel Glomar Explorer to the Agency, they attempted to lift the vessel. It broke in half on the way up, but the bit they were able to keep held two nuclear torpedoes and a wealth of intelligence. Gates thought that by revealing details of this operation, describing how the bodies of six dead Soviet sailors had been buried at sea with full honors and that the submarine's flag would be handed over to President Boris Yeltsin, he would somehow be demonstrating a new commitment to openness. The trouble was his news was as stale as could be. Not only had Operation Jennifer's cover been broken by columnist Jack Anderson, requiring the bid to retrieve the broken half from the seabed to be called off, but former DCI William Colby had written and spoken about it extensively. Yet still the CIA thought that this was an historic admission.

The defeat of the Soviets should have created a new culture of openness. Secrets have been spilling out, flooding out even, from Russia and the former Eastern Bloc. The history of the recent past is being rewritten on the basis of the actual documents relating to some of the greatest moments of the post-war

years. But the American side of the story remains to be told.

Because the United States still considers itself to be at war - or at least the country's intelligence agencies do - the deeply-ingrained culture of secrecy remains in place, ensuring that secrets relating to events that happened many years ago will remain secrets for many years to come.

As recently as July this year the CIA broke a long standing promise to make public secret documents relating to 11 paramilitary operations that took place during the Truman, Eisenhower and Kennedy presidencies, involving anti-Communist efforts in Europe, Asia, Africa and the Caribbean. The promise had been made by two former DCI's, Robert Gates and James Woolsey, but even so, when it came down to it, the CIA reneged, citing budget constraints, a significant irony for an agency that takes a large slice of the \$26.6 billion annual intelligence budget.

DCI George Tenet said the CIA had "a responsibility to the American people, and to history, to account for our actions and the quality of our work." But, he added, the agency did not have the money or the personnel to do the job. He said that the CIA had, a requirement of law, released 227,000 pages on the Kennedy assassination and a stack of files to be used in compiling the State Department's official history of foreign relations in the 1950's and 1960's. The 150 strong CIA unit, made up mainly of retired CIA personnel, tasked with sifting these documents for sensitive data, was simply overwhelmed. When asked how much the sifting operation costs, a spokeswoman said she could not reveal that; it is a secret.

What did emerge in July was a smattering of documents relating to the Bay of Pigs and the overthrow of the Guatemalan government in 1954, but in the case of the latter they accounted for less than 2 per cent of the available files. This is not the first time in recent years that the CIA has promised to release important historical data then failed. In 1992 the agency promised to release the files on the 1954 coup in Iran. Then last year it was revealed that someone had burned most of those files in the early 1960's and even kept that a secret. When he discovered it, then DCI James Woolsey called it, "a terrible breach of faith with the American people and their ability to understand their own history."

Woolsey's words are a fitting epitaph for the culture of secrecy which has so permeated the intelligence industry since World War 2. But there is a broader lesson to be drawn from America's intelligence history in the second half of the twentieth century. A nation that prides itself on its openness, on the accountability of its institutions and its strong democratic foundations has a dark love affair with secrecy. No nation in the world has protected its secrets as well as the United States as the history of the NSA and the NRO demonstrate. Despite congressional oversight of other agencies, there have been remarkably few leaks and a bounty of very well kept secrets. The culture of Need to Know, the institutionalizing of compartmentalization of information combined with an acceptance in successive governments of the overriding need for secrecy has ensured that large parts of the most open society in the world have remained firmly closed.

Little has changed in this culture since the end of the Cold World. Where the files of the Stasi, East Germany's secret police, have been opened for all to see, where many of the KGB's files have spilled out of dark corners, very little of substance has surfaced from American intelligence. Even now, as intelligence moves into cyberspace to create a new generation of offensive and defensive weapons, the billions of dollars being spent are hidden from public view. As we move forward into the new century, America seems certain to carry with it the culture of secrecy that has been so much a part of the present century. With that culture comes secrets we shall never know, secrets we should know and secrets the intelligence community will work very hard to ensure we have no need to know.

**TEACHERS HAVE TAUGHT US
THROUGH THE AGES.
THEY ARE WATCHING US NOW.
THE COSMOS IS THEIR OCEAN
AND THEY HAVE BEEN MINDFUL
OF OUR NEED TO DEVELOP...**

At what moment in the history of a young, blue world would teachers choose to openly reveal themselves to a brash, adolescent race? One thing seems certain: it has happened many times before across the reaches of time, and the knowledge of how to make open contact work well is likely to be found in the history books of the gods.

All factors considered, the most plausible scenario is probably akin to the popularly termed "Prime Directive" in Gene Roddenberry's space science fiction legacy, Star Trek. The Prime Directive demands of spacefaring beings that emerging civilizations be given the opportunity to grow on their own, continually learning at a visceral, species level the fundamental lessons of responsible consciousness. Without such species-wide childhood, the ethical judgment simply cannot exist to deserve empowerment with the fire of the heavens – the ability to travel anywhere with whatever good or ill you bear. No one would argue that a neanderthal should be equipped with a nuclear weapon. So why should humanity be equipped with the power of space-time itself, unless we are good and ready?

In the vision of Star Trek, its Prime Directive accommodates no contact between those traveling in space and life forms developing below on new worlds. But, clearly in our case, we see significant evidence of highly controlled interaction with our species, over many thousands of years. In my view, it is probable that the concept of religion is a fundamental part of the process that underlies the process of contact within whatever real Prime Directive is out there. And is it possible that the real Prime Directive does allow for an intentional or accommodating seeding of "alien" technology at just the right moment, to help give budding science a push, and to evaluate how the civilization responds?

If the hypothesis of this book is correct, would beings as sophisticated as those planning and implementing our seminal religious events be so clumsy as to allow their technology to "accidentally" fall into our hands? Perhaps, and perhaps not.

Nature has a way of keeping her secrets just outside the reach of those who completely lack the ability to employ them wisely, or else no life would exist in the Cosmos. But nature also provides guidance and a vision of the future for developing beings. So must be the situation facing humanity: a controlled process of education, and increasing exposure in response to our successful absorption of the most important ethical lessons of advanced life.

If the hypothesis of this book is correct, then there is a threshold of advancement beyond which a young species may earn the right to membership in a cosmic civilization. Because of the high risks of civil disintegration to an immature culture as described in previous sections, open contact between human civilization and visitors from other worlds could only plausibly occur after several cornerstones of civilization were in place.

What are these cornerstones most likely to be?

I believe there are at least seven key graduation requirements, all of them based upon the presumption that cosmic civilizations are generally founded upon principles of peaceful and harmonious coexistence.

A first test must be the ability of the species to think and act as a group coherently, so that community and order is maintainable as colonization of space is initiated.

A second test must be the ability to interact with more advanced beings without experiencing paralyzing fear, and without projecting the hatreds and paranoia from our primitive and clouded view of reality upon them.

A third test must be the advancement of knowledge to the point of comprehending the science and implications of a new technology as seminal as fire: the use of spacetime itself, even if such knowledge was prompted through "seeding" from above. The new technologies we're dealing with will include gravitational propulsion, overunity "vacuum" energy sources, and a new appreciation of the physical power of conscious thought.

A fourth test must be acknowledgement and action respecting the total power and majesty of life -- understanding that biology and natural evolution are forces of wondrous growth to employ peacefully, never to be fought or used with hostility.

A fifth test must be the ability to preserve historical knowledge with fidelity and permanence, ensuring that the cumulative experience and wisdom of the species is perpetuated for all generations that follow, and enabling a connection into a universal system of knowledge.

A sixth test must be a scientific comprehension of the vital role of religion in human history, and vice versa. Perhaps this book can play one small part in bringing the two closer together.

A seventh test must be a deep comprehension of the importance and sacred nature of truth, love, wisdom, knowledge, and the awesome creative power of intent.

Whatever the ultimate graduation exam may be, we know that we have now crossed one key hurdle: a growing number of us know how the major facts of the human saga can plausibly fit together. To go the rest of the distance and learn the rest of the answers, we must realize, learn, and live in the absolute conviction that truth simply must be an essential principle of highly evolved beings.

As you will find in the utterly fascinating pages that follow, in the past 10 years humanity has come upon discoveries, made inventions, and reached levels of intellectual maturity that strike to the heart of each of the seven tests I propose.

PART III

**EVOLVING IN A PLACE CALLED EDEN
IS A PROMISING YOUNG CIVILIZATION.
WE GROW MORE DANGEROUS
YET WISER EACH DAY.**

**TEACHERS HAVE TAUGHT US
THROUGH THE AGES.
THEY ARE WATCHING US NOW.
THE COSMOS IS THEIR OCEAN
AND THEY HAVE BEEN MINDFUL
OF OUR NEED TO DEVELOP.**

AT WHAT MOMENT IN HISTORY...

A First Test: A Stable Civilization

"It is easier to fight for one's principles than to live up to them."

-- Alfred Adler

While not failing to recognize the human life and cultures lost in the process, the past two centuries have seen the rise of the greatest nation ever known to have existed on Earth.

From the humblest beginnings as pilgrims left persecution behind in Europe, through the pre-nationhood decades as an independent identity began to emerge, and finally through the birth pains of a [Revolutionary War](#), the United States has realized a vision of freedom and equality never before seen.

From a most potent intent encapsulated in a beautifully simple [Constitution](#), a powerful and wise [system of large scale human community](#) has emerged.

As this system of community approaches the millennium, it may be confronted with its greatest challenge and opportunity yet: reinventing itself in the face of fundamental change.

Is it possible to replace the old ladders upon which we stand with new ones, better crafted for the next millennium?

Together we will answer this question.

A Second Test: Maturation of the Culture

Despite the scientific opposition to the concept of UFO visitation, the phenomenon is clearly real and present. Fortunately, the public at large has a far more receptive attitude. Polls have consistently demonstrated that a majority of Americans believe in the existence of advanced forms of life in space, and a large minority believe that the UFO phenomenon is real. In this realm, the public is well ahead of science.

No longer is the subject of UFO experiences relegated to the simplistic terms of "little green men" with Martian credentials. That stereotype is expiring as a figment of ridiculous disinformation.

Apart from the fact that millions of people around the world have witnessed UFOs in the past 50 years, there is another factor which has greatly contributed to a growing belief in the plausibility of the phenomenon: science fiction. And not only has it made the concept more comprehensible, it has reduced the fear factor for a perpetually-fearful human imagination. According to an Associated Press poll taken in late 1997, 86% of Americans believe that intelligent life "out there" is friendly rather than hostile.

Science fiction has also managed to successfully impact the attitude of religiously-minded people toward this question. In the groundbreaking 1994 *Alexander UFO Religious Crisis Survey*, a key question was posed to 1000 Fathers, Pastors, and Rabbis from Protestant, Roman Catholic, and Jewish religious bodies in the United States: "Would official confirmation of the discovery of an advanced, technologically superior extraterrestrial civilization have severe negative effects on the country's moral, social, and religious foundations?" Of the respondents, 77% said no. Asked "Would your congregation perceive any contact made with a technologically advanced extraterrestrial civilization, direct or indirect, as a threat?" 67% of the respondents said no. Only 15% said yes.

Science fiction has indeed had a profound impact on our psychology. We've come a long way since the fright of Orson Welles' 1938 broadcast of *The War of the Worlds*.

Since then, what have seen?

In 1950, *The Flying Saucer*, about an advanced human airplane.

In 1951, *The Thing from Another World*, opening with the American military finding a crashed saucer buried in the Arctic ice.

Also in 1951, we learned that humanity is not quite ready for what is out in space, in *This Island Earth*.

But the most important science fiction film of 1951 was *The Day Earth Stood Still*. In this film, Klaatu -- the alien visitor here to investigate Earth -- is shot while trying to give a gift to the President. Eventually, the military hunts down the alien and kills him, after which he is resurrected by his powerful robot, Gort. But amongst the drama, Klaatu gives a message to a meeting of scientists gathered from around the world:

"I am leaving now. You'll forgive me if I speak bluntly. The universe grows smaller every day and the threat of aggression by one group anywhere can no longer be tolerated. There must be security for all or no one is secure. This does not mean giving up freedom, except the freedom to act irresponsibly. Your ancestors knew this when they made laws to govern themselves and hired policemen to enforce them. We of the other planets have long accepted this principle. We have an organization for the mutual protection of all planets and for the complete elimination of aggression. The test of any such higher authority is of course the police force that supports it. For our policemen, we have created a race of robots. Their function is to patrol the planets in spaceships like this one and preserve peace. In matters of aggression, we have given them complete power over us. This power cannot be revoked. At the first sign of violence, they act automatically against the aggressor. The penalty for provoking their action is too terrible to risk.

The result is that we live in peace without arms and armies, secure in the knowledge that we are free from

aggression and war. Free to pursue more profitable enterprises. We do not pretend to have achieved perfection, but we do have a system and it works. I came here to give you these facts. It's no concern of ours how you run your own planet, but if you threaten to extend your violence, this Earth of yours will be reduced to a burned out cinder. Your choice is simple, join us and live in peace or pursue your present course and face obliteration. We shall be waiting for your answer. The decision rests with you."

This film had a profound effect on the public's view of possible extraterrestrial visitors.

In 1953, *It Came from Outer Space* again referenced a crashed spaceship, this time in the American southwest.

In 1956, *Forbidden Planet* imagines that superior beings left behind technology to turn pure thought into action, as they left the Earth after repressed human emotions -- desire, jealousy, and anger -- wreak havoc.

In 1958, *I Married a Monster from Outer Space* presents a woman who discovers that she is married to an alien.

After a relatively slower period in science fiction feature films, a stunning film by Stanley Kubrick was released. *2001: Space Odyssey* was not received well by critics, but with an advertising campaign like "The Ultimate Trip", it appealed to a new mindset.

The remarkable image that the film is remembered for is the Monolith -- a device of extraterrestrial origin somehow involved in the actual early evolution of humanity. Information was alleged to be published, from various unnamed government sources, in years following the release of *2001*, suggesting that there was indeed alien intervention in human evolution in our distant past, 30,000-50,000 years ago.

In 1966, perhaps the most influential series in science fiction history was presented: *Star Trek*. Today, *Star Trek* is broadcast over 200 times per day in this country alone. There are about 70 million *Star Trek* books in print. The most recent *Star Trek* feature film is still in theaters. Like many of the *Star Trek* feature films, its storyline speaks to the ability to influence time itself.

In hindsight, episodes of *Star Trek* bear striking resemblance to only-recently-uncovered aspects of the UFO phenomenon. Concepts such as time travel, the significance of thought and psychic functioning, the Prime Directive, warp propulsion, a galactic "federation", and innumerable other ideas have sprung up as parallels between fiction and emerging conjectures of reality.

Some would argue that the cause and effect have been reversed here, but that simply does not account for the overwhelmingly vast array of consistent UFO evidence from around the world, from countries without exposure to sophisticated science fiction of any kind.

Whatever its genesis, *Star Trek* has left an enduring legacy of a positive vision of humanity in space in the minds of countless millions of young adults, myself included.

In 1977, Steven Spielberg released the first of two *ET* masterpieces. *Close Encounters of the Third Kind* was a stunningly sophisticated account of how contact might be established between humans and visitors from above. Again, the concepts communicated in the film are strikingly parallel to many of those reported in actual witness testimony.

A few years later, the movie *ET* personalized the phenomenon to the level of human children.

As a frequent guest at the White House, it would be interesting to know if information was ever passed in Spielberg's direction.

Perhaps the most sophisticated space science fiction films of all time belong in the [Star Wars](#) trilogy by

George Lucas. In presenting concepts such as an all-pervasive "force" subject to command through meditative intent, Lucas is, knowingly or not, directly describing what many researchers are openly proclaiming: we do indeed have powers of the mind that impact external physical reality.

Framed within drama on a galactic scale, between the forces of "light" and "dark", there are few more wondrous visions of the mystery and wonder of the Cosmos. And with the trailer now showing for the first of the next installments -- the earlier three prequels -- interest is rapidly spreading among the space-faring imaginations of millions. Indeed, the trailer's images spark the imagination. We may see a story told later this spring more important than we realize.

As Michael Mannion so effectively argues in his book *Project Mindshift*, it is overwhelming likely that as a direct result of the confrontation of American government with the reality of extraterrestrial life, some kind of very rare and fleeting seeding of knowledge is likely to have occurred between the group responsible for the UFO secret and a select few in Hollywood.

A Third Test, Part 1: Engineering Gravity

"Gravity. Surely this force must be capable of an experimental relation to electricity, magnetism, and other forces, so as to build it up with them in reciprocal action and equivalent effect."

-- Michael Faraday (1791-1867), Laboratory Diaries

"(Gravity's) independence of the factors that affect other phenomena and its dependence only upon mass and distance suggest that its roots avoid things superficial and go down deep into the unseen, to the very essence of matter and space."

-- Paul R. Heyl, Scientific Monthly, May 1954

"Since the magnetic moment and the inertial moment are combined in an atom, it may be possible to convert time-varying electromagnetic fields into time-varying gravitational fields."

-- Robert L. Forward, 1963, American Journal of Physics, p. 166-170.

"The experimental method to alter the properties of the vacuum may be called vacuum engineering..... If indeed we are able to alter the vacuum, then we may encounter some new phenomena, totally unexpected."

-- Nobel Laureate T.D. Lee, 1988

"In constructing our theories of gravitation, we should be wary about accepting too glibly many of the prejudices of the present scientific thinking."

--Richard Feynmann, Feynmann Lectures on Gravitation, 1995, Addison-Wesley, p. 17

"Despite its omnipresence, gravity remains the least well tested of all the fundamental forces."

-- Executive Summary, Task Group On Gravity Probe B, Space Studies Board, Board On Physics And Astronomy, Commission On Physical Sciences, Mathematics, And Applications, National Research Council, Washington, D.C. 1995

"...essentially all experts believe that gravitomagnetism must exist."

-- Executive Summary, Task Group On Gravity Probe B, Space Studies Board, Board On Physics And Astronomy, Commission On Physical Sciences, Mathematics, And Applications, National Research Council, Washington, D.C. 1995

"By 2020, high temperature superconductor technology could become a \$240 billion industry."

-- Jack E. Crow, Director National High Magnetic Field Laboratory, Chemical and Engineering News, March 17, 1998, p.38

One of the most fundamental advances in the history of science would be the discovery of the means to engineer gravity. Would it astonish you to learn that open science is on the verge of such a discovery?

First, some basic questions should be answered.

What is gravity?

Gravity is the force of attraction between two objects, which is proportional to their masses and inversely proportional with their distance of separation. You feel gravity in the form of pressure on your butt as you sit reading this document. Either the Earth is pulling on you, or space is pushing on you, whichever way you prefer to imagine the force.

Why is gravity important to the universe?

Gravity is the basis for the rotation of the planets, the disk shape of galaxies, the speculative existence of black holes, the birth and collapse of stars, the roundness of planets and stars, the orbits of planets, moons, asteroids and galactic motion.

Why is gravity important to life?

Gravity is the cause of ocean tides, the force holding the right atmospheric density for biological life to breath, the force condensing the early Earth from gaseous protoplanetary material and dust, and the basis for calculating all satellite orbits (for technological innovations, such as weather forecasting, cellular and telephone networks, global internet communications, navigation such as global positioning systems, etc.).

Like turning a master control knob, if gravity were slowly enough adjusted to sustain life, then taller, more spindly plants and animals might arise under reduced gravity and shorter, more sturdy and squat architectures might arise under higher gravity. This slow biomorphism might lend itself over many generations to both a different shape, size and habit of life.

For example, with high gravity, land mobility becomes restricted. As an example from the rain forests, a fundamental limit on the upper canopy of tall tropical trees is their capability to maintain sufficient water pressure to reach the top leaves for continued growth. How high water can be pumped against gravity sets the cap on the tallest heights sustainable by water nutrients.

How can we detect gravity?

In our sensory world, the influence of gravity is seen readily in the fall of objects towards a bigger mass like the Earth. Thus, gravity gives a sense of up and down for human senses, or perhaps more accurately, "outward" and "inward". However for strong gravity, near a very massive object like a star or galaxy, there are some other means of detection for scientific instruments.

What influences gravity?

Gravity is a property of mass and distance. Most scientists believe that nothing other than mass and distance can influence gravity, and therefore they have long since reached the common conclusion that we are forever bound to our gravity well. Because of this presumption more than any other, we have been led to believe that extraterrestrial visitation is impossibly impractical.

What is mass?

There are two kinds of masses: gravitational mass, from the influence of accelerating forces; and inertial mass, from the persistence of or resistance to a change in motion. The strong motivator for Einstein's theory of relativity was the equivalence of inertial and gravitational mass. A simple way to understand this is through an experiment that uses a simple spring pendulum, sometimes called the Wilberforce pendulum. It was invented by the Englishman, Wilberforce, in the 1800's. To build one, simply put a block or test mass on a spring, which is hinged at the top like a grandfather clock pendulum. Now imagine that there are three kinds of motion that this spring pendulum can undergo: 1) side-to-side motion like a stiff pendulum; 2) up

and down motion like a spring; and 3) twisting motion which pulls up and pushes down the block at the end. These three modes include examples of both gravitational and inertial mass. To understand the differences, consider doing the same experiment in the space shuttle, without the presence of gravity. The spring pendulum does not swing from side to side, because there is no gravity. The spring pendulum does however oscillate and twist in space if extended like a toy spring or 'slinky'. This effect demonstrates inertial mass, or the resistance to changing from a stop or start without the effect of acceleration, except for the tension of the spring itself.

What is the origin of gravity?

Newton did not outline the origin of gravitational attraction, except to describe it as a kind of 'straight line' attraction between two masses. Newton's gravity traveled faster than light, since attraction was instantaneous over great stellar distances.

The triumph of this description was prediction of the elliptical orbits of the planets, including a complete explanation of Kepler's famous laws for the orbits in our solar system.

Einstein described that gravity travelling faster than the speed of light might lead to certain unresolvable experimental problems, mainly associated with what was called the 'ether' or medium for light and information to travel between stars and scientific instruments like ticking clocks.

To Einstein, gravity originated in geometry itself, a kind of 'curved line' attraction between two masses. To understand this view, just consider two ships travelling north from the equator. Although to the ship captains, the ships may appear to be moving on a straight line to the pole, the two ships will eventually meet up as if mysteriously attracted to each other like gravitational attraction. The straight line motion on a sphere, if viewed from space, is a good analogy for how space and time themselves can derive from a curved geometry.

The English physicist, Paul Dirac, solved a set of equations describing the gravitational field, and proposed what kind of particle might transmit gravitational attraction -- called the graviton. Despite enormous creative energy, solutions to these gravity field equations remain scarce. One innovative approach to unifying gravity with other kinds of fields, such as electromagnetism, begins with an explanation of what mass itself might be.

The thing to remember is that the equivalence of gravitational and inertial mass (a strong motivation for Einstein) leads to a relation between the origin of mass itself and the tiny (quantum) oscillations that cannot be gotten rid of (even approaching zero temperature). These oscillations, if they are charged particles, give rise to a formulae for relating quantum forces (zero point forces) to the origin of mass and gravity itself.

The Russian Nobel Prize winner, A. Sakharov, first described what such a relation might look like for Newton's gravity. Quite simply, this picture tries to give meaning to the otherwise vague scientific description, called inertia: why does a passenger fall backwards when a bus or train begins to move forward?

How does gravity change around large and small objects?

Gravity tends to bend light around large objects, as first proposed by Einstein. A description of gravity bending space itself, as well as light, gives rise to a description of such dense and compact stellar objects that light cannot overcome the pull of gravity. These collapsed stars are called black holes.

What is a more difficult question, and what may eventually unlock the origin of gravity and mass itself, is the behavior of how gravity changes around small objects. This field is sometimes referred to as 'quantum gravity' or the study of how to reconcile gravity at a subatomic level, where quantum events and probabilities make Newton's certainty appear as probabilities. If gravity has an origin in small, quantum

events, then mass itself may arise as a resonant or interference effect between closely spaced subatomic particles, which yields a net attraction from an electromagnetic origin.

Because this view of gravity is a quantum phenomenon, has a characteristic frequency, and has its foundation in oscillation of an electromagnetic source, there is the intriguing possibility that these factors may unite or unify gravity with the major forces familiar to most technologists and engineers.

It would take probably one of only three of these factors to be true (quantum scale, frequency effects or electromagnetic origins for gravity) to begin the scientific community on a bold path: to detect, engineer or predict changes in gravity in ways not previously imagined.

Why do we want to engineer gravity?

In considering this question fairly, the only implausible conclusion is outright dismissal of the premise: gravity is the law, therefore understanding its origins, causes, or consequences is not a topic to entertain. That answer is not in the spirit of any true explorer. As Einstein himself ventured: "Of all the communities available to us, there is not one I would want to devote myself to, except for the society of true searchers..."

The explorer wanting to understand gravity must want to travel. Gravity is a great constraint on travel, either on or off the planet. Ninety-plus percent of the mass of current chemical rockets is fuel, the majority of which is burned in the first few minutes to low altitudes.

The Saturn V rocket used to propel 95,000 pounds to the moon required a disposable mass (nearly entirely fuel) of 98.4%. During the first 9 seconds following ignition, the mass equivalent of all the payload energy (the capsule plus astronauts) was burned prior to even leaving the launchpad. Even an average large jet passenger plane carries one ton of mass (2,000 pounds) per passenger.

Although the nearest star (Proxima Centauris) is 4 light years away, the Pioneer spacecraft launched in the 1970s will not enter that star system until the year 28,000. To travel to the 15 nearest stars would require a 100 year round trip, even if 0.1 times the speed of light was possible.

In an energy economy, one person travelling would thus require the labor of a few million people to support that travel.

Even this relative kingdom for the traveler comes not without risks to the voyage. For example, travelling at 0.2 c, a collision with a mere 4 ounce micrometeorite carries the force of two Hiroshima bombs to a craft.

Clearly, overcoming the force of gravity is a necessary step if humans are ever to navigate the ocean of space.

Engineering Gravity

I believe there is a course to engineer gravity, just as scientific endeavors in the last two centuries have actively engineered electrical motors and powerfully driving turbines and pumps.

Human perceptions of gravity are as a pull, with its direction determined by a somewhat vague and ill-defined property called the center of mass. Based on their observation of the stars and navigation in ancient Greece, Eratosthenes and Aristarchus, proposed that the Earth must be round, but the absolute up and down direction for gravity continued to dominate European thought through the Middle Ages.

The argument presented verged on ridicule, because the prevailing view of only an up or down (and no basic concept of 'around') could not sustain any people on the opposite side of the globe. The underworld would seem to fall into deep space. The oceans would even seem to empty into space.

When confronted by the constant tug of gravity, prevailing strategies to overcome this pull lend themselves to some kind of counterforce, a push. Modern science is full of machines that levitate using air and acoustic pressure or electromagnetic and light pulses. Yet one need only recall that an astonishingly short period, less than a hundred years, have passed in the realization of Leonardo Da Vinci's sketches of human flight and the previously thwarted plans for overcoming gravity through strategic use of air pressure. While arguably the basis for the global energy economy and transportation web, counterforces do not reach beyond rocketry or helicopters to the basis for gravity and propulsion itself.

A cursory view of gravity treats this singular force as immutable and constant. The precise position of the stars themselves and even the narrow biological limits for life to develop in the universe seem to hinge on gravity not ever wavering.

The intuitive link was compelling enough that the great astronomer, Johannes Kepler wrongly proposed that the gravitational pull of planetary motion was fundamentally magnetic: "...all the manifold movements are carried out by means of a single, quite simple magnetic force, as in the case of a clockwork (where) all motions (are caused) by a simple weight."

In this spirit of analogy and experiment, the engineering of electricity created the industrial revolution. Familiar electrical and magnetic motors have not spawned a parallel engineering of gravity. Unlike the electrical revolution in this century, no comparable gravitational revolution has allowed mechanical innovation. No obvious prescriptions have developed for gravity modification. Gravity remains bendable only in the realm of large stars or enormous speeds. The next revolution in space travel, power generation and long-distance communication, all may well hinge on this generation's capability to engineer gravity.

Among all the physical forces, gravity and inertia remain omnipresent, but reported almost exclusively as a body of descriptions. In the hunt to unveil the source of gravity, one must keep a close eye for very large and very small numbers. These extremes of nature are the first clues for how one might get a real handle on modifying gravity, primarily because gravity seems to dwell amidst large and small numbers itself.

In a laboratory, changes in gravity seem very small, infinitesimal in fact, over the distances from floor to ceiling. Typically, an experiment must appeal to very high speeds or very huge masses to see a noticeable change in gravity. But in the universe of billions of stars, changes in gravity seem very large, enormous in fact, over the distances measured in millions of light years when a star explodes or collapses. In the universe, the masses of entire stars like the Sun can redistribute themselves with the flash of light from a supernova.

This large and small scale of gravity serves as an important clue to its unveiling. However large or small, it must remain finite, never actually going to zero. Because gravity cannot arbitrarily be turned up or down like a knob or switch, then other competing influences of gravity that might tend to zero become significant candidates for modifying gravity's effects.

No matter how strict the requirements for modifying gravity, whether an apparent physical barrier like the constant speed of light or an engineering barrier like large or dense masses, a "true zero in nature" ultimately is the trump card in the deck. For whatever the numbers for engineering or physical barriers, they remain finite, while dividing by a zero is fundamentally infinite. The search for a true zero in nature is the first clue.

The special case in superconductivity, for which this century has recognized seven Nobel Laureates, is one of those rare cases of a true zero in nature. Superconductivity is self-perpetuating motion of electrons. Once launched under cold or cryogenic conditions, the electricity never dissipates or decays.

This 'real zero' forces a reconsideration of how gravity and electromagnetism can be approached in the laboratory and not just in the realm of colossal stars, near the speed of light, or science fiction.

The second clue is to look at other forces which might couple to gravity. This coupling, whether between electromagnetism or nuclear forces, is not an easy unification to achieve. The multiplicity of forces in the universe seem not to match well with gravity, as the history of science has played out in a series of probative experiments. A link between electromagnetic motors and any kind of proposed gravitational engine began with the British physicist, Michael Faraday, and his laboratory notebooks.

This century of physics has taken its calling from several generations of scientists who sought to engineer the workings of atoms as quantum steps and to this day, still hold out the elusive goal of unifying electricity and gravity. Just as the current energy and information economy relies finally on plugging a device into a power source, drawing either AC current from the wall socket or DC current from a battery, no comparable equivalent to AC gravity exists to balance what is the constant pull of DC gravity. We feel the pull, but cannot push back except through elaborate strategies based on air or acoustic pressure and electromagnetic or light pulses.

A plausible case can be presented for understanding the boundaries of what AC gravity, or gravity modification, might look like. There is also now a factual account of experimental data and consistent explanations based on what little open science currently can claim to understand about either quantum effects on gravity or the coupling between electromagnetism and gravity.

The Finish Experiments

Experiments with rotating superconductors in high-frequency electromagnetic fields have reported anomalous effects on weight measurements (Podkletnov, 1992). The experimental conditions are complex, but for large (>30 cm) diameter, bilayer superconducting disks, rotation introduces a frequency dependence in both the excitation field (2-10 MHz) and in the rotation frequency (linear to ~5000 revolutions per minute, rpm).

The experimental sequence introduces a resistive current, then levitates magnetically the disk under the influence of a low-frequency (60 Hz levitation field) and a high frequency RF (2-10 MHz) modulation. For a three-phase AC field (>150 Watts), the disk rotates without significant friction or flux pinning.

A reduction in the force of gravity of up to approximately 2% was observed.

Status Report on Independent Replication

While not yet in scientific print, the author has access to groups conducting independent replications of the original Podkletnov experiments.

An interim report from one such source is provided below.

"Gravitometer Results to Date

The hypothesis to test is not only whether a gravitational anomaly is detectable above ceramic superconductors, but also to explore the nature of that anomaly, in particular how it depends on distance, superconducting state, and its relative changes upon electromagnetic variation both in the environment and the superconductor.

This path differs from the exploration undertaken by the Finnish group which measured large changes in gravity (peak value, 2.1%) above a particular two-layer superconductor of large diameter. The instruments reported included a pressure detecting barometer and an optoelectronic balance. The balance scale had a counterweight which could be any variety of non-magnetic material and the opposite side of the pulley rested on a spring mechanism common to standard balances.

Three peculiarities feature in these observations in addition to the measurement of gravity change alone. First, a fall in gravity which showed little or no distance dependence (one part in 1000) over a relatively large height (3 m). By comparison any purely gravitational effect or electromagnetic artifact would have diminished by a factor of 100 to 1000 over this distance (from floor to ceiling).

The speculative aspect of this finding is that by definition, such a reading virtually eliminates the presence of artifacts (other than a systematic error) since most thermal or electromagnetic interferences would not have this slow decay with distance. The less understandable aspect of this finding is that this same slow decay does not fit any standard view of how gravity either might be shielded or how a gravitomagnetic counterforce might be generated. All gravitomagnetic forces would diminish according to the standard inverse square distance law.

Second, a fall in gravity appeared to have a cylindrical boundary centered on the disk itself, rather than a conical volume with a point of diminishment along the lines of sight for any force distributed from the much larger projection of the Earth's mass. The conical shape or at least a paraboloid should appear for any ordinary models that might be constructed for how a gravity shield might work. This tapered shape is the result of summing all the mass of the Earth, which should have angular components that erode the boundaries of any apparent field from the sides due to mass "in the line of sight" from the horizon of the earth.

Thirdly, the gravity signal was not apparently steady, but fluctuating both with the type of electromagnetic sources applied to the superconductor and the speed of rotation of the superconductor. A peak in gravity change corresponded with maximum deceleration of the disk rotation and with particular frequency values for the excitatory field.

This time dependence is at least comprehensible for a gravitomagnetic source, since an alternating (sinusoidal) current for either mass or electric currents is a requirement for variation in observed gravity. The influence of rotation is a complex geometry problem except with perhaps unrealistic simplification. The introduction of torsion or rotational effects in general relativity is a current challenge in astrophysics, as in this case.

In summary, the test instrument should measure at least three simultaneous values in any experiment, the field decay with space and time and its corresponding 3-dimensional boundaries. The precision of the original experiments was reported to 2 significant figures, but relative to the background force from the Earth's gravity, represent one part variation per 10,000 (0.1 milli-G, where G is the acceleration of gravity, 32 feet per second, or 9.8 meters per second).

The gravimeter reported in the present configuration, by contrast, measures one part variation in 10 billion (0.1 nano-G), and in addition eliminates a host of competing possible artifacts, such as thermal and electromagnetic variations. The gravimeter is actively temperature controlled at approximately 50 C, thus removing any buoyancy or thermal convective influence on the test mass.

Most amateur experiments in this field are not actively temperature controlled and thus subject to the column of heavy air above a cold superconductor and liquid nitrogen vapors. This colder air is heavier than its warmer surroundings and thus more dense. The denser air would make a suspended object appear lighter above a superconductor. Thermal effects in the Finnish experiment however were controlled by test runs conducted in a vacuum chamber, along with the mysteriously long distance for force

decay that no thermal source could account for.

The importance of controlling electromagnetic artifacts may be less obvious. Rapidly fluctuating electromagnetic stimulation would tend to create complex fields and a version of some electrostatic suspension or inductive effects on the surrounding air and test mass. The requirements for time-varying fields is well-known to produce levitation of conducting objects, such as eddy currents. Electromagnetic artifacts are removed in the gravimeter, however, by shielding the test mass using a highly magnetic plate, called mu metal, that provides not a shield of electromagnetism but instead shunts the magnetic field lines away from any influence on the test mass.

To date, successful gravity measurements on the superconductors have ranged in magnitude from 1-3 parts per million, a much smaller values than the original Finish experiment. However, this variation is not part of a replication for conditions precisely similar to the Finish experiment, with its high speed rotation of superconductors and the very high power levels used.

The magnitude of gravity variation observed is comparable however to a large change in potential energy, such as might be induced by masses far bigger than the actual superconducting disk. No current explanation exists for why the gravity readings are apparently time-varying (such as brief pulses or spikes) and much work continues to examine the absolute precision and reproducibility for each case: both when the superconductor passes through its temperature transition to normal conductivity and when input electrical contacts are added as alternating current of different frequency.

In conclusion, the preliminary results of this ongoing experiment are cautiously encouraging, principally when one considers the inherent complexity of the setup and the potential for previously unforeseen artifacts contributing to any gravitational anomaly."

Breaking Through the Barrier

Three apparent coincidences brew an anomaly. For gravity changes above a superconductor, the significant points are a reported change in weight (0.2-2.1%) of test masses made of different materials, including wood, plastic and silica glass, and a spectacular peak in the gravity signal precisely at the point at which the superconductor begins to manifest quantum effects.

This correspondence is invitingly characteristic of a gravitational instability arising from atomic or sub-atomic behavior. A significant frequency reported in gravity observations is a peak modification (2-5 MHz) at or near the reverse Josephson frequency (3.6 MHz). This relatively narrow frequency band is not dissimilar to what the Sakharov condition predicts for a resonant effect with Newton's gravitational constant (particularly when reconciled with the size of the observed universe, or Hubble constant).

Finally, this experimental case has been subjected to a consistency check with the equations of quantum gravity and proposed as initial evidence for a gravitational instability.

Taken as a group, these considerations particularly sum up overlapping and independent calculations for a gravity frequency. If only one method is correct among the scenarios here proposed, then a realizable method of gravity modification may exist. That is the natural and proper science-speak concerning only one of several remarkable and as-yet privately reported observations. But based upon what I have seen, I would say this: Gravity modification has been demonstrated. ***I have seen the experimental apparatus myself.*** It is in operation in several labs around the world and at one of the most reputable government organizations in the United States. It's implication is simple and utterly profound: gravity is subject to engineering, and we must dispense with 100% of our scientific predispositions against the possibility of interstellar travel and,

by direct implication, extraterrestrial visitation.

What does this really mean? Take Frank Drake's famous equation and equip the calculated number of advanced civilizations with the means for gravity propulsion. What does this yield?

Precisely the kind of UFO phenomenon we observe.

A Third Test, Part 2: Overunity Energy

A continuing search for alternatives to fossil and nuclear fuels as energy sources has intensified over the past few years. This search includes a national commitment of several billion dollars to develop high-energy ("hot") fusion, still controversial in the physics community as to probable success. Complementing this are the so-called renewable energy resources, such as solar and wind energy alternatives that have been under development for several years.

A recent addition to this list, which looks exceptionally promising once viable engineering embodiments can be developed, are environmentally-benign, zero-point energy (ZPE) sources.

The ZPE alternative derives from the fact that quantum theory predicts, and experiments verify, that so-called "empty space" is not truly empty, but rather contains an enormous background of residual electromagnetic energy known as quantum zero-point energy (ZPE). The energy density of this untapped reservoir is conservatively estimated to be on the order of nuclear energy densities or greater. If the ZPE can be "mined" for practical use, it would constitute a virtually ubiquitous energy supply, a veritable "Holy Grail" energy source.

As utopian as such a possibility may seem, proof-of-principle has been demonstrated in the scientific literature. The most-discussed approach exploits a phenomenon called the Casimir Effect, an attractive quantum force between closely-spaced metal plates, named for its discoverer, H. G. B. Casimir of Philips Laboratories in the Netherlands.

The Casimir force, recently measured with high accuracy, derives from partial shielding of the interior region of the plates from the background zero-point fluctuations of the vacuum electromagnetic field. This shielding results in the plates being pushed together by the unbalanced ZPE radiation pressures. The result is a corollary conversion of vacuum energy to some other form such as heat. Proof that such a process violates neither energy nor thermodynamic constraints can be found in the literature as well.

Attempts to harness the Casimir and related effects for vacuum energy conversion are ongoing in laboratories around the globe. Even the U.S. Air Force has considered this possibility as an energy source for propulsion, as can be seen in its request for proposals for the FY-1986 Defense SBIR Program. Under entry AF86-77, Air Force Rocket Propulsion Laboratory (AFRPL) Topic: Non-Conventional Propulsion Concepts we find the statement: "Bold, new non-conventional propulsion concepts are solicited.... The specific areas in which AFRPL is interested include.... (6)Esoteric energy sources for propulsion including the zero point quantum dynamic energy of vacuum space."

Four approaches to ZPE energy extraction have been identified to date. An early one of interest is based on the idea of a Casimir pinch effect in non-neutral plasmas, basically a plasma equivalent of the Casimir plate-collapse effect. A patent issued on this process contains the descriptive phrase "... energy is provided... and the ultimate source of this energy appears to be the zero-point radiation of the vacuum continuum".

Another intriguing possibility is provided by the phenomenon of sonoluminescence, bubble collapse in an ultrasonically-driven fluid which is accompanied by intense, sub-nanosecond light radiation. Although the mechanism of light generation has yet to be determined, Nobelist Julian Schwinger has argued for a Casimir interpretation.

Yet another approach for ZPE extraction is described in a recent patent which proposes use of resonant dielectric spheres, slightly detuned from each other, to provide a beat-frequency downshift of the more energetic high-frequency components of the ZPE to a more easily captured form.

Finally, an approach utilizing micro-cavity techniques to perturb the ground state stability of atomic hydrogen is under consideration. It is based on the concept that the nonradiative nature of the atomic

ground state derives from a dynamic equilibrium process in which radiation emitted due to accelerated electron ground state motion is compensated by absorption from the ZPE.

Under this model there exists the potential for energy generation by the application of the techniques of so-called cavity quantum electrodynamics (QED). In standard cavity QED, excited atoms are passed through Casimir-like cavities whose structure suppresses electromagnetic cavity modes at the atom's transition frequency between excited and ground states. The result is that the so-called "spontaneous" emission time, being driven by vacuum fluctuations is lengthened considerably. In its application to energy generation, mode suppression would be used to perturb the hypothesized dynamic ground-state absorption/emission balance to lead to energy release.

We will soon know which of these remarkable ideas will be most effectively engineerable.

A Third Test, Part 3: Powers of the Mind

"The psyche's attachment to the brain, i.e. its space-time limitation, is no longer self-evident and incontrovertible as we have hitherto been led to believe... It is not only permissible to doubt the absolute validity of space-time perception; it is, in view of the available facts, even imperative to do so."

-- Carl Jung

"When a scientist states that something is possible, he is almost certainly right; when he states that something is impossible, he is very probably wrong."

-- Arthur C. Clarke

There is now conclusive proof in well-executed scientific studies demonstrating the ability of human intention to directly impact certain types of complex physical systems, such as random number generators. The implication of this is that consciousness can influence space-time directly and at a distance spatially and temporally.

I believe the single most important book ever written on this subject was published in 1997 by Dean Radin, Ph.D., titled [The Conscious Universe](#). It is a stunning book. Quoting from the introduction...

"The eventual scientific acceptance of psychic phenomena is inevitable. The origins of acceptance are already brewing through the persuasive weight of the laboratory evidence. Converging theoretical developments from many disciplines are offering glimpses at ways of understanding how psi works. There are explorations of psi effects by major industrial labs, evaluation of claims of psychic healing by the Office of Alternative Medicine of the National Institutes for Health, and articles about psi research appearing in the "serious" media.

As acceptance grows, the implications of psi will become more apparent. But we already know that these phenomena present profound challenges to many aspects of science, philosophy, and religion. These challenges will nudge scientists to reconsider basic assumptions about space, time, mind, and matter. Philosophers will rekindle the perennial debates over the role of consciousness in the physical world. Theologians will reconsider the concept of divine intervention, as some phenomena previously considered to be miracles will probably become subject to scientific understanding.

These reconsiderations are long overdue. An exclusive focus on what might be called "the outer world" has led to a grievous split between the private world of human experience and the public world as described by science. In particular, science has provided little understanding of profoundly important human concepts like hope and meaning. The split between the objective and the subjective has in the past been dismissed as a nonproblem, or as a problem belonging to religion and not to science.

But this split has also led to major technological blunders, and a rising popular antagonism toward science. This is a pity, because scientific methods are exceptionally powerful tools for overcoming personal biases and building workable models of the "truth". There is every reason to expect that the same methods that gave us a better understanding of galaxies and genes will also shed light on experiences described by mystics throughout history."

One of the best individual reports discussed in the book was published by the [Journal for Scientific Exploration](#). I would encourage you to subscribe to this excellent, mind expanding, and rigorous publication.

In [the report](#), conducted by the Princeton Engineering Anomalies Research team at Princeton University, statistically significant psychic-to-physical effects have been reported arising from pre-stated human intention alone, throughout studies conducted over a 12-year period.

Here is the abstract...

"Strong correlations between output distribution means of a variety of random binary processes and pre-stated intentions of some 100 individual human operators have been established over a 12-year experimental program. More than 1000 experimental series, employing four different categories of random devices and several distinctive protocols, show comparable magnitudes of anomalous mean shifts from chance expectation, with similar distribution structures. Although the absolute effect sizes are quite small, of the order of 10^{-4} bits deviation per bit processed, over the huge databases accumulated the composite effect exceeds 7σ ($p = 3.5 \times 10^{-13}$). These data display significant disparities between female and male operator performances, and consistent serial position effects in individual and collective results. Data generated by operators far removed from the machines and exerting their efforts at times other than those of machine operation show similar effect sizes and structural details to those of the local, on-time experiments. Most other secondary parameters tested are found to have little effect on the scale and character of the results, with one important exception: studies performed using fully deterministic pseudorandom sources, either hard-wired or algorithmic, yield null overall mean shifts, and display no other anomalous features."

Or consider [another abstract](#) regarding [psychic studies over 10 years](#) conducted by the Stanford Research Institute in Palo Alto, CA, as disclosed by the CIA in July 1995.

"In July 1995 the CIA declassified, and approved for release, documents revealing its sponsorship in the 1970s of a program at Stanford Research Institute in Menlo Park, CA, to determine whether such phenomena as remote viewing "might have any utility for intelligence collection". Thus began disclosure to the public of a two-decade-plus involvement of the intelligence community in the investigation of so-called parapsychological or psi phenomena. Presented here by the program's Founder and first Director (1972-1985) is the early history of the program, including discussion of some of the first, now declassified, results that drove early interest."

And...

"Research on psychic functioning, conducted over a two decade period, is examined to determine whether or not the phenomenon has been scientifically established. A secondary question is whether or not it is useful for government purposes. The primary work examined in this report was government sponsored research conducted at Stanford Research Institute, later known as SRI International, and at Science Applications International Corporation, known as SAIC.

Using the standards applied to any other area of science, it is concluded that psychic functioning has been well established. The statistical results of the studies examined are far beyond what is expected by chance. Arguments that these results could be due to methodological flaws in the experiments are soundly refuted. Effects of similar magnitude to those found in government-sponsored research at SRI and SAIC have been replicated at a number of laboratories across the world. Such consistency cannot be readily explained by claims of flaws or fraud.

The magnitude of psychic functioning exhibited appears to be in the range between what social scientists call a small and medium effect. That means that it is reliable enough to be replicated in properly conducted experiments, with sufficient trials to achieve the long-run statistical results needed for replicability.

A number of other patterns have been found, suggestive of how to conduct more productive experiments and applied psychic functioning. For instance, it doesn't appear that a sender is needed. Precognition, in

which the answer is known to no one until a future time, appears to work quite well. Recent experiments suggest that if there is a psychic sense then it works much like our other five senses, by detecting change. Given that physicists are currently grappling with an understanding of time, it may be that a psychic sense exists that scans the future for major change, much as our eyes scan the environment for visual change or our ears allow us to respond to sudden changes in sound.

It is recommended that future experiments focus on understanding how this phenomenon works, and on how to make it as useful as possible. There is little benefit to continuing experiments designed to offer proof, since there is little more to be offered to anyone who does not accept the current collection of data."

Most scientists ignore these studies and hundreds of other similar research initiatives. Most scientists are very wrong. They are ignoring one of the most important realms of science that will emerge in the third millennium.

How is "magic" like psi possible? Almost all the candidate theories point towards one of two possibilities. The first is some kind of information communication backward and forward in time, compatible with the Feynmann view of "advanced" and "retarded" electromagnetic waves. In this view, the mind is able to somehow tap and information field outside of the "present moment". The second category of theories point towards the stunning, mysterious but verified characteristic of "quantum mechanics" known as *non-locality*. Some theories even combine the two approaches. From The Conscious Universe...

"One of the most shocking events in twentieth-century science – an event so outrageous that its repercussions are still barely understood – was quantum theory's prediction and subsequent verification of non-locality. This idea challenged the long-held classical assumptions that objects separated in space are strictly isolated. Instead, non-locality shows that physical objects that appear to be separate are really connected in ways that transcend the limits of space and time. This may seem like a stark violation of common sense, but that is what the theory predicts and the experiments show.

At the leading edge of science we see the undeniable fact staring us in the face that the Cosmos itself may possess a certain form of consciousness – at the very least that the potential energy that pervades the Cosmos is directly responsive to conscious intent at arbitrary distance in space and time.

These are stunningly significant discoveries. They deserve reams of coverage across the media. They foretell a fundamental revolution in our comprehension of the role of consciousness in the Cosmos. For modern scientists to institutionally reject such assertions is a sign of how deep and complete the fundamental disconnection within science between experience and fact, between meaning and truth. The culture of science has raised a generation of skeptics who look at new and anomalous data and, considering 100% of it emotional or imagined fantasy, summarily conclude that the concepts are "spooky" and worthy of derision. Indeed, such concepts are spooky, as now-accepted phenomena in quantum mechanics were also once believed to be. These concepts are considered mystical only because we do not understand them fully at this time, but at the core of them we will find profound truths that will soon completely revolutionize science.

The experiments described above are definitive. There is an undeniable power of the mind to directly influence the "random" substrate of the Cosmos. What would such a capability mean when cultivated through a million years of evolution beyond homo sapiens? Can it be enhanced through genetic engineering? Could the oft-repeated spiritual admonition to "believe sufficiently and you will move mountains" be ground in emerging scientific fact as well?

Those who have encountered our visitors first hand uniformly report telepathic communication.

A Fourth Test: Saving the Environment

In my opinion, the most courageous, wise, and ethical human beings on Earth are those who volunteer their time in the service of their world and their fellow humans. These people are also some of the happiest people in society today. For in service of the Earth, they have unlocked a great secret: Earth serves back.

Since the Apollo space missions and publishing of [Silent Spring](#), an awakening sense of our unity with nature has caught hold in the hearts of people all over the world. What have they done to forward the cause of restoring the health of Gaia?

These wonderful organizations speak for themselves...

[Sierra Club](#)

[Greenpeace](#)

[National Audobon Society](#)

[Nature Conservancy](#)

[World Wildlife Fund](#)

[Environmental Defense Fund](#)

[National Wildlife Federation](#)

[Wildernes Society](#)

[League of Conservation Voters](#)

[Worldwatch Institute](#)

[Natural Resources Defense Council](#)

[Rainforest Action Network](#)

[Surfrider Foundation](#)

[Earth Island Institute](#)

[Earthwatch Institute](#)

[Union of Concerned Scientists](#)

[Friends of the Earth](#)

Join one and act!

A Fifth Test: Emergence of Species Mind

See if you can guess who wrote this article...

"The real heart of the matter of selection, however, goes deeper than a lag in the adoption of mechanisms by libraries, or a lack of development of devices for their use. Our ineptitude in getting at the record is largely caused by the artificiality of systems of indexing. When data of any sort are placed in storage, they are filed alphabetically or numerically, and information is found (when it is) by tracing it down from subclass to subclass. It can be in only one place, unless duplicates are used; one has to have rules as to which path will locate it, and the rules are cumbersome. Having found one item, moreover, one has to emerge from the system and re-enter on a new path.

The human mind does not work that way. It operates by association. With one item in its grasp, it snaps instantly to the next that is suggested by the association of thoughts, in accordance with some intricate web of trails carried by the cells of the brain. It has other characteristics, of course; trails that are not frequently followed are prone to fade, items are not fully permanent, memory is transitory. Yet the speed of action, the intricacy of trails, the detail of mental pictures, is awe-inspiring beyond all else in nature.

Man cannot hope fully to duplicate this mental process artificially, but he certainly ought to be able to learn from it. In minor ways he may even improve, for his records have relative permanency. The first idea, however, to be drawn from the analogy concerns selection. Selection by association, rather than indexing, may yet be mechanized. One cannot hope thus to equal the speed and flexibility with which the mind follows an associative trail, but it should be possible to beat the mind decisively in regard to the permanence and clarity of the items resurrected from storage.

Consider a future device for individual use, which is a sort of mechanized private file and library. It needs a name, and, to coin one at random, "memex" will do. A memex is a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory.

It consists of a desk, and while it can presumably be operated from a distance, it is primarily the piece of furniture at which he works. On the top are slanting translucent screens, on which material can be projected for convenient reading. There is a keyboard, and sets of buttons and levers. Otherwise it looks like an ordinary desk.

In one end is the stored material. The matter of bulk is well taken care of by improved microfilm. Only a small part of the interior of the memex is devoted to storage, the rest to mechanism. Yet if the user inserted 5000 pages of material a day it would take him hundreds of years to fill the repository, so he can be profligate and enter material freely.

Most of the memex contents are purchased on microfilm ready for insertion. Books of all sorts, pictures, current periodicals, newspapers, are thus obtained and dropped into place. Business correspondence takes the same path. And there is provision for direct entry. On the top of the memex is a transparent plate. On this are placed longhand notes, photographs, memoranda, all sorts of things. When one is in place, the depression of a lever causes it to be photographed onto the next blank space in a section of the memex film, dry photography being employed.

There is, of course, provision for consultation of the record by the usual scheme of indexing. If the user wishes to consult a certain book, he taps its code on the keyboard, and the title page of the book promptly appears before him, projected onto one of his viewing positions. Frequently-used

codes are mnemonic, so that he seldom consults his code book; but when he does, a single tap of a key projects it for his use. Moreover, he has supplemental levers. On deflecting one of these levers to the right he runs through the book before him, each page in turn being projected at a speed which just allows a recognizing glance at each. If he deflects it further to the right, he steps through the book 10 pages at a time; still further at 100 pages at a time. Deflection to the left gives him the same control backwards.

A special button transfers him immediately to the first page of the index. Any given book of his library can thus be called up and consulted with far greater facility than if it were taken from a shelf. As he has several projection positions, he can leave one item in position while he calls up another. He can add marginal notes and comments, taking advantage of one possible type of dry photography, and it could even be arranged so that he can do this by a stylus scheme, such as is now employed in the telautograph seen in railroad waiting rooms, just as though he had the physical page before him.

All this is conventional, except for the projection forward of present-day mechanisms and gadgetry. It affords an immediate step, however, to associative indexing, the basic idea of which is a provision whereby any item may be caused at will to select immediately and automatically another. This is the essential feature of the memex. The process of tying two items together is the important thing.

When the user is building a trail, he names it, inserts the name in his code book, and taps it out on his keyboard. Before him are the two items to be joined, projected onto adjacent viewing positions. At the bottom of each there are a number of blank code spaces, and a pointer is set to indicate one of these on each item. The user taps a single key, and the items are permanently joined. In each code space appears the code word. Out of view, but also in the code space, is inserted a set of dots for photocell viewing; and on each item these dots by their positions designate the index number of the other item.

Thereafter, at any time, when one of these items is in view, the other can be instantly recalled merely by tapping a button below the corresponding code space. Moreover, when numerous items have been thus joined together to form a trail, they can be reviewed in turn, rapidly or slowly, by deflecting a lever like that used for turning the pages of a book. It is exactly as though the physical items had been gathered together from widely separated sources and bound together to form a new book. It is more than this, for any item can be joined into numerous trails.

The owner of the memex, let us say, is interested in the origin and properties of the bow and arrow. Specifically he is studying why the short Turkish bow was apparently superior to the English long bow in the skirmishes of the Crusades. He has dozens of possibly pertinent books and articles in his memex. First he runs through an encyclopedia, finds an interesting but sketchy article, leaves it projected. Next, in a history, he finds another pertinent item, and ties the two together. Thus he goes, building a trail of many items. Occasionally he inserts a comment of his own, either linking it into the main trail or joining it by a side trail to a particular item. When it becomes evident that the elastic properties of available materials had a great deal to do with the bow, he branches off on a side trail which takes him through textbooks on elasticity and tables of physical constants. He inserts a page of longhand analysis of his own. Thus he builds a trail of his interest through the maze of materials available to him.

And his trails do not fade. Several years later, his talk with a friend turns to the queer ways in which a people resist innovations, even of vital interest. He has an example, in the fact that the outraged Europeans still failed to adopt the Turkish bow. In fact he has a trail on it. A touch brings up the code book. Tapping a few keys projects the head of the trail. A lever runs through it at will, stopping at interesting items, going off on side excursions. It is an interesting trail, pertinent to the discussion. So he sets a reproducer in action, photographs the whole trail out, and passes it to his

friend for insertion in his own memex, there to be linked into the more general trail.

Wholly new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified. The lawyer has at his touch the associated opinions and decisions of his whole experience, and of the experience of friends and authorities. The patent attorney has on call the millions of issued patents, with familiar trails to every point of his client's interest. The physician, puzzled by a patient's reactions, strikes the trail established in studying an earlier similar case, and runs rapidly through analogous case histories, with side references to the classics for the pertinent anatomy and histology. The chemist, struggling with the synthesis of an organic compound, has all the chemical literature before him in his laboratory, with trails following the analogies of compounds, and side trails to their physical and chemical behavior.

The historian, with a vast chronological account of a people, parallels it with a skip trail which stops only on the salient items, and can follow at any time contemporary trails which lead him all over civilization at a particular epoch. There is a new profession of trail blazers, those who find delight in the task of establishing useful trails through the enormous mass of the common record. The inheritance from the master becomes, not only his additions to the world's record, but for his disciples the entire scaffolding by which they were erected.

Thus science may implement the ways in which man produces, stores, and consults the record of the race. It might be striking to outline the instrumentalities of the future more spectacularly, rather than to stick closely to methods and elements now known and undergoing rapid development, as has been done here. Technical difficulties of all sorts have been ignored, certainly, but also ignored are means as yet unknown which may come any day to accelerate technical progress as violently as did the advent of the thermionic tube. In order that the picture may not be too commonplace, by reason of sticking to present-day patterns, it may be well to mention one such possibility, not to prophesy but merely to suggest, for prophecy based on extension of the known has substance, while prophecy founded on the unknown is only a doubly involved guess.

All our steps in creating or absorbing material of the record proceed through one of the senses -- the tactile when we touch keys, the oral when we speak or listen, the visual when we read. Is it not possible that some day the path may be established more directly?

We know that when the eye sees, all the consequent information is transmitted to the brain by means of electrical vibrations in the channel of the optic nerve. This is an exact analogy with the electrical vibrations which occur in the cable of a television set: they convey the picture from the photocells which see it to the radio transmitter from which it is broadcast. We know further that if we can approach that cable with the proper instruments, we do not need to touch it; we can pick up those vibrations by electrical induction and thus discover and reproduce the scene which is being transmitted, just as a telephone wire may be tapped for its message.

The impulses which flow in the arm nerves of a typist convey to her fingers the translated information which reaches her eye or ear, in order that the fingers may be caused to strike the proper keys. Might not these currents be intercepted, either in the original form in which information is conveyed to the brain, or in the marvelously metamorphosed form in which they then proceed to the hand?

By bone conduction we already introduce sounds: into the nerve channels of the deaf in order that they may hear. Is it not possible that we may learn to introduce them without the present cumbersomeness of first transforming electrical vibrations to mechanical ones, which the human mechanism promptly transforms back to the electrical form? With a couple of electrodes on the skull the encephalograph now produces pen-and-ink traces which bear some relation to the

electrical phenomena going on in the brain itself. True, the record is unintelligible, except as it points out certain gross malfunctioning of the cerebral mechanism; but who would now place bounds on where such a thing may lead?

In the outside world, all forms of intelligence whether of sound or sight, have been reduced to the form of varying currents in an electric circuit in order that they may be transmitted. Inside the human frame exactly the same sort of process occurs. Must we always transform to mechanical movements in order to proceed from one electrical phenomenon to another? It is a suggestive thought, but it hardly warrants prediction without losing touch with reality and immediateness.

Presumably man's spirit should be elevated if he can better review his shady past and analyze more completely and objectively his present problems. He has built a civilization so complex that he needs to mechanize his records more fully if he is to push his experiment to its logical conclusion and not merely become bogged down part way there by overtaxing his limited memory. His excursions may be more enjoyable if he can reacquire the privilege of forgetting the manifold things he does not need to have immediately at hand, with some assurance that he can find them again if they prove important.

The applications of science have built man a well-supplied house, and are teaching him to live healthily therein. They have enabled him to throw masses of people against one another with cruel weapons. They may yet allow him truly to encompass the great record and to grow in the wisdom of race experience. He may perish in conflict before he learns to wield that record for his true good. Yet, in the application of science to the needs and desires of man, it would seem to be a singularly unfortunate stage at which to terminate the process, or to lose hope as to the outcome."

In the idea of the "Memex", Dr. Vannevar Bush, Ph.D., Director of the Office of Scientific Research and Development Agency and later Chairman of the alleged Majestic-12, gave birth to a precise and beautifully prescient vision of the Internet. In his 1945 article in the Atlantic Monthly titled "[As We May Think](#)", Dr. Bush correctly set forth a clear vision for technology inventions that would fundamentally advance the knowledge and sophistication of human beings.

He described the ultimate advancement, enabling humanity to accelerate the acquisition of knowledge, equipping every human being with an electronic library accessing the complete store of human knowledge, constructed on associative links exactly like the human brain.

His vision for the public was realized 5 years ago. Since 1993, the Internet has risen to become a literal mind in and of itself -- the mind of humanity. The Web browser is your personal portal with a view into the first global library built by the human animals on Earth, the Internet.

The Internet is not only our library. Today it is a circulatory system for knowledge, dialog, passion, hate, agreement, law, decision, news, services, products, and money. It will ultimately carry every telephone conversation and every broadcast program.

In the end, the Internet accomplishes three things:

- Provides all human knowledge to everyone with access
- Establishes the first mechanism enabling us to ensure that knowledge can be preserved over time with high fidelity
- Democratizes and speeds the flow of information

One day the Internet will become a voting booth for every citizen, a chapel for every faith, a classroom for every child, and perhaps even a connection back to our common heritage, as we venture into the depths of

space.

Now, consider this idea: what if we could connect our Internet to the equivalent knowledge system of our visitors? What wonders would we then learn?

Such a concept has never been possible, until now.

A Sixth Test: Reunification of Science and Spirituality

Throughout the centuries since the time of Christ, Christian churches have guided hundreds of millions of people along an evolving path of faith. The most prominent of Christian faiths, the Roman Catholic Church, has felt the teachings of numerous important theologians: St. Augustine, St. Thomas Aquinas, Popes Leo XIII and John XXIII among others, who have shaped the faith and thought of the Church.

In the life span of the most recent generation, Pope John Paul II has been a powerful voice for Catholics worldwide calling for social justice in the capitalist system, the fall of communism and conformity in doctrinal matters. In late 1998, in perhaps his most powerful statement to date, *Fides et Ratio*, Pope John Paul II calls for reconciliation between faith and reason to promote a rebirth of humanity as we head into the third millennium.

"Faith and reason are like two wings on which the human spirit rises to the contemplation of truth; and God has placed in the human heart a desire to know the truth - in a word, to know himself - so that, by knowing and loving God, men and women may also come to the fullness of truth about themselves" (cf. Ex 33:18; Ps 27:8-9; 63:2-3; Jn 14:8; 1 Jn 3:2).

"This is why I have felt both the need and the duty to address this theme so that, on the threshold of the third millennium of the Christian era, humanity may come to a clearer sense of the great resources with which it has been endowed and may commit itself with renewed courage to implement the plan of salvation of which its history is part."

A constant theme of Christianity, every moment is a time to rejoice in the love of Christ and not for despair and nihilism. Yet, as we stand at a time of greater change than ever before, society seems unable to articulate a vision for the future, which can give meaning to today's youth and provide the foundation for tomorrow.

I too believe it is through the detachment of faith and reason that society and culture have lost the universal truths which give meaning to life.

"One of the most significant aspects of our current situation, it should be noted, is the 'crisis of meaning'. Perspectives on life and the world, often of a scientific temper, have so proliferated that we face an increasing fragmentation of knowledge. This makes the search for meaning difficult and often fruitless. Indeed, still more dramatically, in this maelstrom of data and facts in which we live and which seem to comprise the very fabric of life, many people wonder whether it still makes sense to ask about meaning. The array of theories which vie to give an answer, and the different ways of viewing and of interpreting the world and human life, serve only to aggravate this radical doubt, which can easily lead to skepticism, indifference or to various forms of nihilism."

"These considerations prompt a first conclusion: the truth made known to us by Revelation is neither the product nor the consummation of an argument devised by human reason. It appears instead as something gratuitous, which itself stirs thought and seeks acceptance as an expression of love. This revealed truth is set within our history as an anticipation of that ultimate and definitive vision of God which is reserved for those who believe in him and seek him with a sincere heart. The ultimate purpose of personal existence, then, is the theme of philosophy and theology alike. For all their difference of method and content, both disciplines point to that "path of life" (Ps 16:11) which, as faith tells us, leads in the end to the full and lasting joy of the contemplation of the Triune God."

The search for truth is intrinsic in every man, woman, child, society, science, culture and religion. It is

through this common pursuit that we arrive at meaning in our lives. Reason gives order to thought and to man's understanding of existence. With the Pope's statement, the Church has officially recognized this and moves to support rationality alongside faith.

"On her part, the Church cannot but set great value upon reason's drive to attain goals which render people's lives ever more worthy. She sees in philosophy the way to come to know fundamental truths about human life. At the same time, the Church considers philosophy an indispensable help for a deeper understanding of faith and for communicating the truth of the Gospel to those who do not yet know."

Reason allows humans to discuss matters of faith in the context of universal truths, which, if the hypothesis of this book is true, can unite countless major cultures and religions. Without reason, we have little common ground to discuss and agree upon the universal truths that shape human consciousness.

"Philosophy's powerful influence on the formation and development of the cultures of the West should not obscure the influence it has also had upon the ways of understanding existence found in the East. Every people has its own native and seminal wisdom which, as a true cultural treasure, tends to find voice and develop in forms which are genuinely philosophical. One example of this is the basic form of philosophical knowledge which is evident to this day in the postulates which inspire national and international legal systems in regulating the life."

Reason alone, however, cannot answer all of the mysteries of life. It is more commonly intuition that allows us to pierce the veil of truth into meaning. As has always been the case for the humble and true Christian, it is through living love and freely returning that love that we begin to know more deeply the mysteries of life.

"This means that they acknowledge fully and integrally the truth of what is revealed because it is God himself who is the guarantor of that truth. They can make no claim upon this truth which comes to them as gift and which, set within the context of interpersonal communication, urges reason to be open to it and to embrace its profound meaning. This is why the Church has always considered the act of entrusting oneself to God to be a moment of fundamental decision which engages the whole person. In that act, the intellect and the will display their spiritual nature, enabling the subject to act in a way which realizes personal freedom to the full."

Thus, it is through faith that we realize the potential in our free will, and reach meaning in the truth we understand.

"Men and women can accomplish no more important act in their lives than the act of faith; it is here that freedom reaches the certainty of truth and chooses to live in that truth."

One without the other can result in an equally disturbing emptiness. Reason without faith brings nihilism, while faith without reason is mythology. The Church is now recognizing that through the union of the two, the mysteries of life are more fully appreciated and resonate more clearly in our lives.

"Faith sharpens the inner eye, opening the mind to discover in the flux of events the workings of Providence. Here the words of the Book of Proverbs are pertinent: "The human mind plans the way, but the Lord directs the steps" (16:9). This is to say that with the light of reason human beings can know which path to take, but they can follow that path to its end, quickly and unhindered, only if with a rightly tuned spirit they search for it within the horizon of faith. Therefore, reason and faith cannot be separated without diminishing the capacity of men and women to know themselves, the world and God in

an appropriate way."

Thus, reason contributes to the theological method to substantiate proper moral conduct and discourse, while faith brings us closer to the mysteries and love of God. Therefore, Christian philosophers must pursue intellectual discourse, but ground it in the faith of God's love.

It is through precisely this kind of union that we ultimately arrive closer not only to God by to our fellow man. It is through love and respect, faith and reason that we can begin the renewal of humanity in the third millennium.

"Reflecting in the light of reason and in keeping with its rules, and guided always by the deeper understanding given them by the word of God, Christian philosophers can develop a reflection which will be both comprehensible and appealing to those who do not yet grasp the full truth which divine Revelation declares. Such a ground for understanding and dialogue is all the more vital nowadays, since the most pressing issues facing humanity - ecology, peace and the co-existence of different races and cultures, for instance - may possibly find a solution if there is a clear and honest collaboration between Christians and the followers of other religions and all those who, while not sharing a religious belief, have at heart the renewal of humanity. "

Ancient religious scriptures represent knowledge passed down to us from our ancestors. The very fact that these books have moved people to form and destroy entire empires across the millennia is astoundingly obvious confirmation that the history they recount records generally authentic events, however imperfectly recorded and passed down.

These most sacred books represent the imperfect retelling of the most sacred memories of our fathers and mothers. In the case of the New Testament, the events related therein are less than 100 human generations old.

In this time of great moment, more and more of us are turning again to these books for guidance. But from a scientific point of view, if any one of the great books of scripture truthfully retells of human interaction with great beings from above, then at least a few other such books are almost surely grounded in history as well.

If the hypothesis of this work is true -- that both religion and science are grounded in historical fact -- then the Pope is not only right, but is providing to the Christian faithful one of the most profound instructions of the legacy of the ministry of Jesus Christ. Humanity then faces its most important test: will the faiths of human religions and the disciplines of human sciences pause to teach among each other the purest of their truths, apologize for their crimes against each other, settle down in peace, and enjoy each other's company?

Within this hypothesis, that is what faith now compels us to do. Those who have offended must apologize to those who were injured. We're all in need of giving and receiving apologies derived from our endemic short-sightedness.

The best way to apologize is to ACT. I do not hold hope for those who cannot see the simple and profound logic in making these kinds of statements of apology and repentance to those who our societies have harmed.

As we consider the profundity of recent discoveries of science, and consider the real possibility that we may face teachers involved in the history of our faiths someday soon, every one of us will seek predictions for the future. What will these miracles do to civilization? To governments, and our economies? To our churches and our families? To us as individual people?

I am as anxious to know as you.

A Seventh Test: A Successor to the Consumer Society

"Nothing could be sown or whole which is not first been rent."

-- William Butler Yeates

One year ago, in my position as the CEO of one of the largest, fastest growing Silicon Valley Internet companies on Earth, I began to realize the extremely dangerous trends emerging in the world around me -- trends which indeed we all are unknowingly helping to perpetuate.

I saw a Western economy blissfully ignorant of massive swings in the fortunes of nations. I saw us asleep as our primitive approach to medicine creates lethally resistant strains of microbes. I saw us painfully short-sighted in silently witnessing the flattening of vital preserves of ecology. I saw us unconscious of the frightful life to which we have condemned our brothers and sisters in inner cities.

But most disturbingly, I saw that we in the United States have become the architects of the single greatest challenge to the survival of humanity: the consumer society.

The consumer society has fueled the rise of a great and powerful nation, but it has done so by extracting fuel from the foundations upon which it rests within and around the world. Such fuel is quickly running dry.

Once again, the extraordinary research of Eugene Linden in *The Future in Plain Sight* communicates the impending catastrophe best...

"The genius of the consumer society is that it captures religious needs largely disenfranchised by modern Western life, and translates those spiritual longings into material appetites, the satisfaction of which through purchases further expands the consumer society's reach. In effect, the consumer society is a system that integrates both religion and economics into a culture in which material wealth is valued far more than spiritual wealth. Cultures can and do change, but the question is, Can the consumer society evolve into its successor without upheaval? I believe that it cannot.

One of the perverse laws of the universe is that we least understand those phenomena that have the greatest bearing on our lives and future. So it is with consumer societies - along with population growth, one of the two great phenomena to emerge in this century. For all the scrutiny the consumer society has received over the decades, it is all too easy to focus on the materialistic aspects of consumer behavior, particularly the consumer society's surface manifestations of waste, greed, conspicuous display, and a host of other unattractive activities and values. This is what happened at the 1992 Earth Summit, which became a futile exercise in finger pointing as emerging nations argued that rich-nation consumption, not the exploding populations and rising aspirations of developing countries, were what had put the world in its current environmental pickle.

The arguments are not trivial: the average American has roughly eighty times the impact on the global economy than the average person from India. Environmentalists fear that, as billions of peasants around the world adopt the consumer values of the West, the world's already overburdened ecosystems will collapse under the weight of expanding human numbers leveraged by ever-increasing material consumption. If China develops its vast coal reserves to meet its energy needs, that nation will soon be putting as much CO₂ into the atmosphere as the entire industrial world, nullifying whatever steps the rich nations take to limit greenhouse-gas emissions.

There is no question that rising consumption combined with rising human numbers poses a profound problem for the world, but upon examination, the spread of consumer behavior cannot be so neatly reduced to an indicator of increased consumption and waste. For one thing, as the world has seen in Eastern Europe in the years since the fall of the Soviet Union, the spread of consumer societies can

have the effect of reducing waste and making a society more efficient. Communism in Russia and the Eastern bloc managed to produce all the ills of the consumer society, but almost none of the benefits. The Trabant, the people's car of now defunct East Germany, produced as much as thirty times the polluting emissions of the equivalent-sized cars sold in West Germany. In fact, by closing antiquated East German factories and converting other coal-fired plants to natural gas, Germany has been able to lower the nation's overall CO2 emissions by 10 percent since 1990. The consumer society cannot be dismissed as wasteful.

The consumer society is also something more than a society made up of people who want to buy consumer goods. Given the opportunity, nearly everybody on earth wants to buy goods that make life healthier, easier, and more convenient. Nowhere was this proposition more powerfully demonstrated than in New Guinea during World War II, where Stone Age indigenous peoples became so enamored of the bounty brought along by invading armies that many would build airstrips with the belief that such signs of devotion would prompt the gods to deliver more cargo. Noble as their efforts were, the Cargo Cultists failed to grasp one important aspect of consumer societies: true consumers not only buy goods, they also organize themselves to produce them. When Cargo Cults flourished, only a handful of industrial nations - the U.S., Canada, Australia, followed by Japan and most of Western Europe - had the necessary markets, political structures, and values to qualify as consumer societies. With the triumph of capitalism and democracy over communism, however, the entire world is busily trying to join the club.

India is trying to free its markets and eliminate red tape so that it can hop on the global merry-go-round of buying and producing consumer goods. In such a religious and tradition-bound country, this process has been halting. The protesters who stoned Kentucky Fried Chicken outlets in several cities did so in part because they felt that the Western enterprise would induce the poor to abandon their healthy and inexpensive vegetarian diet for fast food that would put a strain on peasant pocketbooks and health, and would place additional burdens on Indian food production, which even today must strain to feed nine hundred million mouths. At the same time, video vans that roll through rural villages urging the poor to buy Colgate toothpaste instead of using traditional cleaners such as charcoal and the bark of the neem tree have for the most part been greeted with enthusiasm. Are these transformations necessarily bad?

Neo-Luddites, so-called deep ecologists, and a burgeoning crop of radical Christian thinkers led by Jesuit priest and writer Thomas Berry would emphatically argue yes. One attribute of a consumer society, goes this argument, is that it treats nature as raw material to be manipulated by technology for the short-term benefit of humanity, which believes itself to be separate from the rest of the natural order. With no appreciation of natural limits, the consumer society ultimately will destroy earth's life-support systems and itself in the process.

Values, however, are a crucial component of the consumer society. Because consumer spending amounts to so much of the U.S. GDP, buyers can have an enormous effect on what gets produced. As the power of advertising makes clear, most of these purchases are profoundly influenced by the buyers' values and aspirations. Since the early 1970s, automobile buyers have shifted from purchasing ostentatious gas hogs to simple economy cars and then back to ostentatious, gas-hog sport-utility vehicles as the American self-image has interacted with notions of scarcity, confidence in the future, and considerations of comfort and safety in unpredictable ways.

It is worth considering what would happen if people around the world suddenly awakened to threats to the biosphere and demanded that industries protect ecosystems and adopt clean technologies and sources of energies. What would happen if technological progress brought us abundant sources of clean, cheap energy? Could the consumer society become sustainable, to use the word that has become the mantra of the eco-conscious community?

This future is unlikely. It is in the nature of businesses to optimize efficiency, and the consumer society

is supremely adaptable to buyer tastes, but the consumer society is unsustainable. At its core, the consumer society functions more as a religion than as an economic system.

A look deep into the workings of the consumer society reveals a startling paradox, involving the relationship between reason, the irrational, and religion in a consumer society. Antireligious in its nature, and ostensibly built upon reason and technology, the consumer society actually draws upon both religion and irrational forces. This paradox is what makes the consumer society Such a formidable presence in the late twentieth century, even if many of its converts find its fruits empty and unrewarding.

One of the broad trends of Western history has been the gradual diminution of religion as an influence on behavior. In the so-called primitive religions, gods and the spirits of the ancestors encoded in ritual and taboo influence every aspect of life, ensuring that people follow the lessons of survival worked out over millennia by trial and error. The ancient Greeks exiled the gods to Olympus, allowing themselves a much freer hand to do business. Monotheism and then Christianity went the Greeks one better, pushing God off the planet altogether and up into the heavens. With the gods and God out of our hair, all of creation was at man's disposal. When the religious codes of the Roman Church still proved an impediment to business (prohibiting interest, for instance, which put Christian diamond merchants in medieval times at a competitive disadvantage to Jews in the Antwerp marketplace), the Reformation solved the problem by equating worldly success with godliness. Add the factors of progress and willingness to break with tradition and the elements were in place for the emergence of the consumer society, the most supremely adaptable culture the world has yet encountered.

What vast purpose has been served by the inexorable diminution of religion as a force in daily life? Clearly one result has been to allow humans greater latitude to intervene in nature and otherwise take control of the way we conduct our affairs. As humanity has turned away from religion for guidance, it has turned to reason and science, attempting to impose rational management on aspects of life formerly determined by tradition, taboo, or some other expression of cultural authority.

If reason has sapped the passion from modern religion, it has also channeled that power in surprising directions. One signal artifact of consumer societies is that more and more people define themselves either through purchases, through their role in producing goods, or through their role in persuading other people to make purchases. Each of these activities has become invested with aspects of devotional duty, completing the long slow trend toward sanctifying commerce that began with the dawn of monotheism. If the Reformation made it acceptable to strive for worldly success, the advent of the consumer society made holy the acquisition of worldly goods. The true heroes of the consumer society are not those who save but those who spend.

Each consumer purchase - in the aggregate, \$6.8 trillion yearly in the United States - helps expand the hegemony of the consumer society and, by extension, the hegemony of the rational management of human behavior and resources. This is what the consumer society is about; its accomplishment, if that is the appropriate term, is the increase in the power of reason as a force in life. The consumer society does this by capturing religious needs pertaining to such profound needs as the urge to understand one's place in the universe, and translating them into material appetites, the satisfaction of which further extends the hegemony of reason.

Everybody knows that the promises of advertising are false and its logic is specious, but it still works, because advertising and marketing - the connective tissue between the productive side of the consumer society and the inchoate realm of needs and wants - tap into deep and powerful needs. A vast panoply of products are sold through the implicit promise that the purchase will connect the buyer to some desired community or attribute. Rather than actually test himself in combat or in the wild, the corporate bureaucrat can try to satisfy the inner warrior through the purchase of a Humvee or a luxury hunting package tour in Alaska. Even the intangible satisfactions of religion itself are up for sale. Faith becomes an image of faith, in the form of a crucifix worn as an accessory.

And, of course, redemption can be purchased through philanthropy as well. In this transaction, a tycoon can in one gesture erase the sins of a lifetime of marauding and self-interest by making gifts in his declining years, and then find himself celebrated for his goodness far more than humble souls who limited their material ambitions and tried to honor their God in their actions on a day-to-day basis. The consumer society is thus built on a substrate far more complex than a simple desire for convenience and material wealth.

But there is more. The true genius of the consumer society is in its relationship to discontent. As volumes of monographs, books, and articles on the alienation of modern life and the emptiness of materialism have told us, it is impossible to satisfy religious needs through material purchases. The attempt to do so only leads to discontent that manifests itself on the individual level through various forms of anomie, and on the societal level through recurring outlaw movements - protest movements, the counterculture of the late 1960s, New Age mysticism, etc. These periodic explosions of discontent are intrinsic to the consumer society, a product of the basic engine that makes the whole system go in the first place. Rather than suppress these inevitable eruptions, it harnesses them as new forms of consumer interest. Outlaw energy that would bring down the system becomes domesticated into purchasing decisions that help expand the system.

This is the paradox alluded to earlier: the consumer society taps as a source of energy the discontent it helps create. This is what makes the system so supremely resilient and adaptable. Unfortunately, a system that transforms all attempts to change it into consumer interest loses the ability to recognize danger and adapt. If every public expression of fear, anger, or outrage is assimilated as a market opportunity, the system cannot change.

Such a system is both stable and unstable. It is unstable because it produces turmoil and indeed requires it to function, but it is stable because, like the Greek demigod Proteus, it continually changes form without altering its basic substance. What does it mean for the world as the consumer society conquers new cultural frontiers and brings ever more people and ever-larger pieces of the world under its control?

The consumer society is a pyramid sales scheme on a global scale. It is about growth and the exploitation of new markets. Its hallmark is its extreme adaptability. Over the decades, the managers and marketing geniuses who tend the consumer society have optimized corporate abilities to identify, target, and exploit eruptions of consumer interest wherever it surfaces. The result is the Orwellian situation in which one division of a corporation can respond to consumer concern about inner-city violence in its publications, while another division promotes recording artists who celebrate murder and call for killing cops.

Like George Soros, conservative thinker William Bennett believes that the best way to restore some balance is to bring nonconsumer values back into the system. Soros is more concerned with emerging economies around the globe, whereas Bennett worries about the decline of the moral sense at home in America. Both firmly believe that it is possible to have commerce and values, and they are right, although some of the recent precedents, such as the awkward marriage of religion and markets in Iran, would hardly gladden the heart of a capitalist.

Difficult as is the fit between Islamic fundamentalism and a market economy, it is much more difficult to imagine the merging of a consumer society and the values necessary to make peace with the biosphere. Try to imagine the consumer economy without growth. Even the President's Council on Sustainable Development cannot do that. In their wisdom, they define sustainable development as "Sustained economic growth." Try to imagine the impact on today's economy if consumers no longer defined themselves through material possessions, and instead returned to religion, nature, and other traditional nonmaterial sources of satisfaction.

Since the system depends on spending and perpetual growth, it is difficult to imagine that the consumer society can ever become sustainable, perpetual growth being impossible on a finite planet. The consumer society can embrace an ethos that seeks efficiency, but any value change that fostered the simple life and a search for nonmaterial satisfactions would ultimately bring it down.

The market system that underlies the consumer society is amoral. It is also blind, since there is no way of knowing what humanity will need in the future to survive. For decades, the market regarded the Pacific yew tree as nothing more than a nuisance. Rather than sell the yews felled during timber operations, companies would burn them. Then researchers discovered that the bark contained a compound called taxol that helps treat various types of cancer. Unfortunately, the market's recognition of the value of Pacific yews has not yet led to a resurgence of the tree. Now the scarce remaining trees are in danger from timber pirates lured by the high prices the tree's bark commands.

There is no way the market can know what humans might need in the future, or what ecosystems might need right now. Economic activities convert natural systems into capital in almost complete ignorance of the real costs and benefits. Though nature is readily converted into capital, the reverse is not so easy to accomplish, even when the value of the natural resource finally becomes recognized.

Around the world today, from the rise of Islamic fundamentalism to other expressions of radical religious discontent, there are stirrings of a reaction to the consumer society and a search for something beyond material satisfactions. Do these stirrings represent a true threat to the consumer society, or are they just another manifestation of the discontents that the consumer society produces and then domesticates?

Humanity will make the transitions to stable population growth, to an economic system that neither beggars the earth nor marginalizes the great bulk of humanity, and to a value system that recognizes the limits of materialism, but these transitions will not come about smoothly. One thing we can know about the future is that it will be less stable for more people than it is today.

Paleontologist Richard Potts of the American Museum of Natural History argues that, since humanity is adapted to instability, as a species we are well prepared to deal with instability in the future. He also notes that we have become creators of the circumstances that created us: that our pollutants affect the climate the way volcanoes did in earlier times, and that human-induced global warming may bring about rapid shifts that humans have lived through many times during our evolutionary history. In effect, humanity has become a stimulant to the endocrine system of the planet.

That humanity has survived, however, leaves the impression that humanity sat out the cataclysms of fire and ice that periodically devastated the planet suffering no more than inconveniences. In fact, the history of the human ancestral line has been for hominids to appear, flourish for a couple of million years, and then yield the stage to a more adaptable descendant. Even during the more recent past, there have likely been repeated population crashes within the histories of *Homo erectus* and *sapiens* as climates careened from wet and moist to dry and vice versa.

A temporary 40-percent reduction in human numbers, which might have been the norm during periods of extreme instability in prehistoric times, might seem like a small blip on a long, successful evolutionary journey when viewed from the distant future; but our children may take a different view if they live through a period during which 2.2 billion people succumb to various calamities and plagues. I am not suggesting that this is going to happen, but only that we should not take comfort from the fact that, more than any other species save the insects, humans, as Potts put it, "are adapted to that aspect of nature that is most volatile."

Humanity finds itself at a remarkable conjunction. Presentday humans have been the beneficiary of a rare syzygy: fifty years of political stability on top of 150 years of good weather that falls into an eight-thousand-year period of relative climate stability. It could be argued that civilized man has never really

known true instability, and that the industrial and information ages have flowered in a period of almost uncanny tranquillity. Humanity has taken advantage of our long respite from climate instability. We have invented technologies and social systems to insulate us from the vicissitudes of nature. We have bet the world that our fortress will protect us when climate and the environment again become temperamental. We never imagined that our very success would hasten the return of bad times.

What can be done? It is very late in the game. I chose the clues described in the first part of this book precisely because they represent long-wavelength, difficult-to-reverse phenomena. If a doubling of carbon dioxide carries with it climate chaos, we are likely stuck with these consequences, if only because, given the momentum of the global economy, there is very little time left to halt the increase in CO₂. The lifetime of these molecules in the atmosphere is roughly one hundred years, which means that once CO₂ finds its way into the atmosphere it tends to stay there for a very long time. Similarly, the destruction of the world's ancient forests and the fragmentation of its ecosystems cannot be reversed easily, and humanity will have to deal with whatever upheavals accompany this global ecological imbalance.

Despite this, there is no cause for despair. The global climate is such a complex system that some unanticipated reaction of its many components may mute the predicted impact of ever increasing greenhouse gases. Even now, some as yet unidentified mechanism seems to be taking a small amount of CO₂ out of the atmosphere, so that the buildup of greenhouse gases is occurring at a slightly slower rate than was predicted based upon known levels of global emissions.

Moreover, there is much that people and nations can do. We may not be able to head off some measure of instability, but humanity has the power to moderate the impact of the coming upheavals. Nothing will happen, however, unless people around the world recognize the dangers lurking just beyond the turn of the millennium.

We have seen in this century how bad ideas, turbocharged by the integrated global market and the heft of six billion people, can transform the planet. Something so seemingly innocent as a health-conscious interest in sushi has virtually stripped the North Atlantic of bluefin tuna. Asian folk beliefs in the aphrodisiac properties of tiger parts and rhino horn have driven both great animals to the verge of extinction in the wild. Misunderstandings about natural systems embedded in classical economics have encouraged nations to destroy most of the world's original forests and wetlands and view the results as a positive contribution to gross domestic product. We have reached a point in history where we can no longer afford the luxury of bad ideas. To paraphrase Sigmund Freud, the character of our ideas is now the destiny of the planet.

If bad ideas can transform the globe, so can good ideas. Even before Congress acted, public outcry over tuna fishing methods that inadvertently drowned thousands of dolphins forced the world's largest tuna canning companies to boycott fish caught by those methods. Even if Congress acts to end the boycott, it is likely that consumer pressure will continue to enforce the ban. Now a number of prestigious restaurants are employing a similar boycott to give some relief to beleaguered stocks of swordfish in the North Atlantic. More and more people seem to care about not only what they eat, but where it was raised and how it was caught. Consumers seem to be creating an ad hoc and ecological analog to kosher dietary restrictions.

The extraordinary reversal in attitudes toward family size shows how attitudes can change rapidly in vastly different cultures at the same time. As indicators of environmental stress and climate chaos become more compelling, and as people wake up to the threat of an unstable world, it is possible that there will be a sudden shift in values.

Even if the world enters a period of economic instability, the pain of straitened material circumstances might be muted if this rocky time strengthened family ties and renewed interest in things spiritual. To the degree that such an awakening translates into altered purchasing decisions and political action, the

face of various societies might change very rapidly. Something as simple as renewed respect for the workings of natural systems, awareness that the weight of six billion people has made humanity the most consequential creature on the planet, would work wonders in tempering humanity's self-destructive tendencies.

Throughout humanity's history, ecological lessons have been culturally encoded as taboos. Around the world, aboriginal peoples protected certain forests and creatures not so much because they had developed a sophisticated science of ecology, as because they felt that violations of taboos would produce empty harvests and barren wives. This fear of the consequences did more to protect natural systems than any biodiversity treaty, and today it is surfacing again in more modern form as more and more people around the world recognize that heedless tampering with earth's life-support systems is a very dangerous game. This represents a healthy reversal of the trend to view nature as an infinitely stocked refrigerator created solely for man's pleasure and needs.

Over the millennia, humanity has proved to be an artful dodger of fate, a defier of limits, a surmounter of seemingly insurmountable obstacles, and a master escape artist from traps laid by nature. Only the very brave or foolhardy would assert flatly that our resourceful species has finally exhausted its bag of tricks.

Still, it is very late in the game."

The God of Society

I am attacking the God held in constant view by the investor: unbounded consumerism is no longer a sustainable institution, and it can no longer serve the interests of humanity.

Such a statement will be the equivalent of blasphemy to many. This fact is the single greatest clue that consumerism, its commandments of unrestrained growth, and its infrastructure on Wall Street have indeed become dangerously overpowering idols of Western society.

Why else would so many be fearful as I simply write and publish a book?

But let us not preoccupy ourselves with blame, for there is plenty to go around. Let us move on, having learned a valuable lesson.

In order for civilization to mature to the next level, we simply MUST reorient our self-perception of our place in the Cosmos. As Carl Sagan maintained, the declared existence of extraterrestrial beings will without question ultimately cause a worldwide movement for unity, and begin a fitful process to correct the errant ways of our species. Confronted with the reality of a more advanced race of beings, we would recognize our common humanity, and begin a process of building a truly coherent and sustainable global civilization.

A scripture comes to mind...

"20 The young man saith unto him, All these things have I kept from my youth up; what lack I yet?

21 Jesus said unto him, If thou wilt be perfect, go, sell that thou hast, and give to the poor, and thou shalt have treasure in heaven, and come and follow me.

22 But when the young man heard that saying, he went away sorrowful; for he had great possessions.

23 Then said Jesus unto his disciples, Verily, I say unto you, that a rich man shall hardly enter into the kingdom of heaven.

24 And again I say unto you, It is easier for a camel to go through the eye of a needle, than for a rich man to enter the kingdom of God.

25 When his disciples heard this, they were exceedingly amazed, saying, Who then can be saved?

26 But Jesus beheld their thoughts, and said unto them, With men this is impossible; but if they will forsake all things for my sake, with God whatsoever things I speak are possible.

27 Then answered Peter and said unto him, Behold, we have forsaken all, and followed thee; what shall we have therefore?

28 And Jesus said unto them, Verily I say unto you, that ye who have followed me, shall, in the resurrection, when the Son of man shall come sitting on the throne of his glory, ye shall also sit upon twelve thrones, judging the twelve tribes of Israel.

29 And every one that has forsaken houses, or brethren, or sisters, or father, or mother, or wife, or children, or lands, for my name's sake, shall receive a hundred-fold, and shall inherit everlasting life.

30 But many of the first shall be last, and the last first."

-- Matt. 19:20-30

**AT WHAT MOMENT IN HISTORY
WOULD THESE VISITORS WANT US TO JOIN THEM...**

Our life is frittered away by detail... Simplify, simplify."

-- Thoreau

"My interest is in the future because I am going to spend the rest of my life there."

-- Charles Franklin Kettering

One of the purposes of this Internet book is to share with each of you fundamentally new ideas – ideas that one day could transform the world.

In this work, I wish to propose a way to completely restructure over time our economic institutions to operate in a manner compatible with a living Earth, while preserving the proven entrepreneurial creativity that has built a remarkable modern civilization.

I propose that consumers assert control of the economy and rebuild our economic system to serve non-profit organizations, instead of a small concentration of wealthy individuals.

A corporation in this model would continue to exist to maximize profits – but for the benefit of the non-profit institutions which they serve. Corporations would continue to make investments in their business strategies, but all within the long-term interests of maximizing a 'natural profit motive' -- profit driven to genuine non-profit causes. Individual compensation structures and organizational models would be considerably flatter, the economic motive purified, and the betterment of life for all the principal urge of everyone.

Is this a radical proposal? Absolutely. Is it insane? Yes. Is it a utopian fantasy? Totally. Radical and insane proposals are necessary to save a short-sighted and dangerously hubris nation from self-destruction.

As a motivator to carefully consider this option, I am forming a catalyst organization called EarthCity. EarthCity will be the non-profit of non-profits: the ultimate collaborative e-commerce Internet site whose profit motive is dedicated entirely to the interests chosen by the individual citizens who become its members.

At www.EarthCity.org next year, you will be able to purchase virtually any good or service online. When you first visit the site, you will register your name, credit account information, and then you will designate which subset of the top one-hundred leading non-profits to which you wish to contribute your share of EarthCity's profits. It will be the ultimate portal and commerce web site, but with the fundamental purpose of restoring power to individual citizens of Earth, who wish to reclaim their world from a dangerously materialistic economy and liberate themselves from the shackles placed around their necks by investor motives.

What Earth-conscious citizen would not choose to purchase from such an institution? What young individual would not choose to work for such an institution?

My business partner and I built USWeb Corporation, the largest Internet services company on the planet, so I know what I am talking about creating here.

I welcome people to contribute their ideas to this most remarkable undertaking as it begins in earnest in coming months, and I ask for your support once EarthCity is launched next year.

Fundamentally, this initiative will use the frictionless Internet economy to put to the test a very simple, fundamental question: is the individual or collective profit motive the stronger one in a frictionless economy?

We should remember that sustainable natural equilibrium processes are always circular: we must return profit derived from the Earth back into the Earth. In a completely literal sense, this economic model would create an "ecological cycle" for corporate profits, analogous to the biosphere's carbon and water cycles. Any good scientist will agree that such a profit cycle will eventually dominate, because it is on its face compatible with the kind of natural equilibrium which nature ultimately demands of everything she supports.

A comprehensive business plan for this initiative will appear in this section of The Truth in early 1999. I presently expect the site to launch no later than 2000.

**AT WHAT MOMENT IN HISTORY
WOULD THESE VISITORS WANT US TO JOIN THEM?
WHAT WILL WE BECOME WHEN WE DO...**

Is it possible to imagine what human life in the heavens could ultimately be like? Is it possible to know what kinds of knowledge and powers we may one day come to possess as we evolve into the distant future?

One possibility is to interpret the basic history recounted in the New Testament at face value...

The Testimony of Saint John

CHAPTER 1

- 1 In the beginning was the gospel preached through the Son. And the gospel was the word, and the word was with the Son, and the Son was with God, and the Son was of God.
- 2 The same was in the beginning with God.
- 3 All things were made by him; and without him was not anything made which was made.
- 4 In him was the gospel, and the gospel was the life, and the life was the light of men;
- 5 And the light shineth in the world, and the world perceiveth it not.
- 6 There was a man sent from God, whose name was John.
- 7 The same came into the world for a witness, to bear witness of the light, to bear record of the gospel through the Son, unto all, that through him men might believe.
- 8 He was not that light, but came to bear witness of that light,
- 9 Which was the true light, which lighteth every man that cometh into the world;
- 10 Even the Son of God. He who was in the world, and the world was made by him, and the world knew him not.
- 11 He came unto his own, and his own received him not.
- 12 But as many as received him, to them gave he power to become the sons of God; only to them who believe on his name.
- 13 He was born, not of blood, nor of the will of the flesh, nor of the will of man, but of God.
- 14 And the same word was made flesh, and dwelt among us, and we beheld his glory, the glory as of the Only Begotten of the Father, full of grace and truth.
- 15 John bear witness of him, and cried, saying, This was he of whom I spake; He who cometh after me, is preferred before me; for he was before me.
- 16 For in the beginning was the Word, even the Son, who is made flesh, and sent unto us by the will of the Father. And as many as believe on his name shall receive of his fullness. And of his fullness have all we received, even immortality and eternal life, through his grace.

17 For the law was given through Moses, but life and truth came through Jesus Christ.

18 For the law was after a carnal commandment, to the administration of death; but the gospel was after the power of an endless life, through Jesus Christ, the Only Begotten Son, who is in the bosom of the Father.

19 And no man hath seen God at any time, except he hath borne record of the Son; for except it is through him no man can be saved.

Powers Attributed to Christ

"He touched her hand" (Matthew 8.15)

"Then he got up and ordered the winds and the waves to stop" (Matthew 8.26)

"Get up, pick up your bed and go home!" (Matthew 9.6)

"Courage, my daughter! Your faith has made you well!" (Matthew 9.22)

"Then Jesus touched their eyes..." (Matthew 9.29)

"Stretch out your hand" (Matthew 12.13)

"He broke the loaves" (Matthew 14.19)

"...walking on the water" (Matthew 14.25)

"...and he healed them." (Matthew 15.30)

"...gave a command to the demon and it went out of the boy, and at the very moment he was healed" (Matthew 17.18)

"Jesus had pity on them and touched their eyes." (Matthew 20.34)

"He has been raised" (Matthew 28.6)

"Be quiet and come out of the man." (Mark 1.25)

"He took her by the hand and helped her up..." (Mark 1.31)

"...and reached out and touched him." (Mark 1.41)

"Stretch out your hand." (Mark 3.5)

"...your faith has made you well." (Mark 5.34)

"Little girl, I tell you to get up." (Mark 5.41)

"He broke the loaves..." (Mark 6.41)

"...they saw him walking on water." (Mark 6.49)

"And all who touched it were made well "(Mark 6.56)

"...go back home, where you will find that the demon has gone out of your daughter." (Mark 7.29)

"...put his fingers in the man's ears, spat and touched the man's tongue." (Mark 7.34)

"Open up!" (Mark 7.35)

"..broke them, and gave them to his disciples to distribute..." (Mark 8.6)

"Jesus placed his hands on him..." (Mark 8.23)

"I order you to come out... " (Mark 9.25)

"Go, your faith has made you well..." (Mark 10.52)

"Be quiet and come out of this man!" (Luke 4.35)

"...ordered the fever to leave her..." (Luke 4.39)

"he placed his hands on every one of them and healed them all." (Luke 4.40)

"gave an order to the wind and to the stormy weather..." (Luke 8.24)

"...they went out of the man..." (Luke 8.33)

"touched the edge of his cloak..." (Luke 8.44)

"Get up, child!" (Luke 8.54)

"...healed the boy..." (Luke 9.42)

"Jesus, took the man and healed him." (Luke 14.4)

"On the way they were made clean." (Luke 17.14)

"Then see!" (Luke 18.42)

"Now draw some water" (John 2.8)

"Go; your son will live" (John 4.50)

"Get up, pick up your mat and walk." (John 5.8)

"Jesus took the bread, gave thanks to God, and distributed it to the people." (John 6.11)

"...they saw Jesus walking on the water..." (John 6.19)

"Go, wash your face in the Pool of Siloam" (John 9.7)

"Lazarus, come out!" (John 11.43)

How could we become empowered with gifts such as these? It would almost surely occur through the ultimate power of genetics and evolution, whether that means outright evolution, mating with a higher species or active genetically-engineered combination of features. This may shock many people, but it is hard to imagine that the basis of all biological life – DNA – and its natural and applied processes do not play the fundamental role in the advancement of species throughout the Cosmos.

Might this have something to do with the oft-reported phenomenon of human "abduction" by our visitors?

PART IV

**EVOLVING IN A PLACE CALLED EDEN
IS A PROMISING YOUNG CIVILIZATION.
WE GROW MORE DANGEROUS
YET WISER EACH DAY.**

**TEACHERS HAVE TAUGHT US
THROUGH THE AGES.
THEY ARE WATCHING US NOW.
THE COSMOS IS THEIR OCEAN
AND THEY HAVE BEEN MINDFUL
OF OUR NEED TO DEVELOP.**

**AT WHAT MOMENT IN HISTORY
WOULD THESE VISITORS WANT US TO JOIN THEM?
WHAT WILL WE BECOME WHEN WE DO?**

**WE SHALL MEET THEM
AS THE MEN AND WOMEN OF EARTH
AND ASK THEM FOR THEIR TRUTH.**

What will contact with these teachers actually be like? No one on Earth can accurately answer that question as far as I know. However, the witnesses to "heavenly" interactions over the millennia have left us their records of visions and promises made by those in space above.

The concept of the New Jerusalem appears in the apocalyptic literature of the Hebrew Bible, the New Testament, and the Book of Mormon, as the capital city of the new community of God and his people.

The major reference to the New Jerusalem in the New Testament is found in the Revelation to John. The book of Revelation describes in highly symbolic form the grand vision of God's government of the whole of creation. Written mainly after the fall of Jerusalem and the destruction of the temple (70-71 A.D.), this book holds out hope for the Jewish Christian; and also for the gentile Christian suffering persecution from the Roman Empire, during the persecutions of Christians under the Emperor Domitian (81-96 A.D.), that God is in control of his creation. As the author of the epistle to the Hebrews would assure those saints who were bereft of an earthly city, God had a heavenly city where they would live together in peace and tranquility.

"Apocalyptic" literature (e.g., Daniel, and Revelation) often emphasizes a cosmological vision. Often a heavenly messenger-- an angel, or Christ, is an intermediary to God. And heavenly wonders are seen as assurances that God is in ultimate control of his Cosmos of creation.

John records his vision:

Then I saw a new heaven and a new earth; for the first heaven and the first earth had passed away, and the sea was no more. And I saw the holy city, the new Jerusalem, coming down out of heaven from God, prepared as a bride adorned for her husband.

And I heard a loud voice from the throne saying,

See, the home of God is
among mortals.
He will dwell with them;
They will be his peoples,
and God himself will be
with them;
he will wipe every tear from their eyes:
Death will be no more;
mourning and crying and pain
will be no more,
for the first things have
passed away.

And the one who was seated on the throne said, 'See, I am making all things new.' Also he said, 'Write this, for these words are trustworthy and true.' Then he said to me, 'It is done! I am the Alpha and the Omega, the beginning and the end. To the thirsty I will give water as a gift from the spring of the water of life. Those who conquer will inherit these things, and I will be their God and they will be my children.' (Rev. 21:1-7)

Then an angel of God said to John:

Come, I will show you the bride, the wife of the Lamb. And in the spirit he carried me away to a great, high mountain and showed me the holy city of Jerusalem coming down out of heaven from God. It has the glory of God and a radiance like every rare jewel, like Jasper, clear as crystal. (Rev. 21:9-12)

John describes the walls, the gates, the size, and the configuration of the New Jerusalem in lavish symbols of jewels, gold, pearls. The "street of the city, is pure gold, transparent as glass." (Rev. 21:2-1)

I saw no temple in the city for its temple is the Lord God the Almighty and the Lamb. And the city has no need of sun or moon to shine on it, for the glory of God is its light, and its lamp is the Lamb. The nations will walk by its light, and the Kings of the earth will bring their glory into it. Its gates will never be shut by day- and there will be no night there. People will bring into it the glory and the honor of the nations. ...(Rev. 21:22-26)

Then the angels showed me the river of the water of life, bright as crystal, flowing from the throne of God and of the Lamb through the middle of the street of the city. On either side of the river is the tree of life with its twelve kinds of fruit each month; and the leaves of the tree are for the healing of the nations. ... The throne of God and of the Lamb will be in it, and his servants will worship him; they will see his face, and his name will be on their foreheads. And there will be no more night; for they need no light of lamp or sun, for the Lord God will be their light, and they will reign forever and ever!

And he said to me, 'These words are trustworthy and true, for the Lord, the God of the spirits of the prophets, has sent his angel to show his servants what must soon take place. []

See, I am coming, soon! Blessed is the one who keeps the words of the prophecy of this book.

I, John, am the one who heard and saw these things. And when I heard and saw them, I fell down to worship at the feet of the angel who showed them to me; but he said to me, "You must not do that! I am a fellow servant with you and your comrades the prophets... . Worship God!" (Rev. 23:1-9)

The Hebrew bible makes numerous references to the New Jerusalem. However, it is difficult to separate references to the accomplishment of an earthly Zion at a future date, while Israel is in exile, and the building again of the temple; from an possible notion of a heavenly city. In Christian sources too, references may be to the promises of a heavenly city or home, the inheritance of the Christian after death. See Isaiah Chapters 54, 60; Ezekiel chapters 40, 48.

In Paul's epistle to the Galatians, he refers to "the Jerusalem above." (Gal. 4:26-27) In his epistle to the Philippians, he says that "our citizenship is in heaven." (Phili. 3:20) And in the epistle to the Hebrews, Paul says: "You have come to Mount Zion and to the city of the living God, the heavenly Jerusalem, and to innumerable angels in festal gathering... . (Heb. 12:22)

What are my predictions of the future? Scripture is replete with warnings of a great day of judgement, when the Messiah will come to Earth, look into our souls to examine our worthiness, and select those who shall graduate to become like God. It is impossible for me to accept major scriptural teachings as based in historical fact, and not imagine that there is some basic truth to the idea of judgment. While it may be as incomprehensibly allegorical as the biblical account of creation, the idea of judgment is so pervasive that it must have some basis in fact, if there is truth to the overall hypothesis of this work. What might that truth be?

Perhaps we will face our own souls in a mirror of the mind, and feel every emotion we've ever projected out into the world. For some of us, this would surely be defined as hell, for a tiny few pure heaven, and most of us, including me, some mixture of the two.

I am willing to face my soul. Are you?

A More Modern Description of Christ

Consider one of the more powerful scriptures from my own LDS heritage, and note that this revelation is well reported to have been received at the end of 1832. It was received by a man named Joseph Smith, whose description of encounters with brilliant white-clothed beings are almost indistinguishable from many modern-day accounts of first-hand encounters with "visitors"...

"4 This Comforter is the promise which I give unto you of eternal life, even the glory of the celestial kingdom;

5 Which glory is that of the church of the Firstborn, even of God, the holiest of all, through Jesus Christ his Son—

6 He that ascended up on high, as also he descended below all things, in that he comprehended all things, that he might be in all and through all things, the light of truth;

7 Which truth shineth. This is the light of Christ. As also he is in the sun, and the light of the sun, and the power thereof by which it was made.

8 As also he is in the moon, and is the light of the moon, and the power thereof by which it was made;

9 As also the light of the stars, and the power thereof by which they were made;

10 And the earth also, and the power thereof, even the earth upon which you stand.

11 And the light which shineth, which giveth you light, is through him who enlighteneth your eyes, which is the same light that quickeneth your understandings;

12 Which light proceedeth forth from the presence of God to fill the immensity of space—

13 The light which is in all things, which giveth life to all things, which is the law by which all things are governed, even the power of God who sitteth upon his throne, who is in the bosom of eternity, who is in the midst of all things.

14 Now, verily I say unto you, that through the redemption which is made for you is brought to pass the resurrection from the dead.

15 And the spirit and the body are the soul of man.

16 And the resurrection from the dead is the redemption of the soul.

17 And the redemption of the soul is through him that quickeneth all things, in whose bosom it is decreed that the poor and the meek of the earth shall inherit it.

18 Therefore, it must needs be sanctified from all unrighteousness, that it may be prepared for the celestial glory;

19 For after it hath filled the measure of its creation, it shall be crowned with glory, even with the presence of God the Father."

-- LDS Doctrine and Covenants, Section 88:4-19

PART V

THE TRUTH

What a wonderful feeling it must be, to take that first trip in a craft of the future. Step inside and see nothing but metal and panels. Sit down, touch a control, or perhaps just think a thought, and something magical happens. Covering all the walls, upon all the flooring, there are advanced illuminating materials that fade on, displaying a sweeping 360 degree, spherical, completely enveloping real time image. Every pixel is integrated into the most magnificent virtual reality screen of all time. A predecessor to the holodeck.

The ship rises on artificial gravity, and floats like a leaf in a weightless pond of energy. You feel nothing. No acceleration. Within the field of warp propulsion, the energy of time is bent around the craft, to cause motion to occur with no inertial resistance. You literally fall towards your destination. During the first moments of your flight, as remarkable as the image surrounding you is, the more immediate senses of touch and balance clue you to the totally unique and organic feel of the motion of this amazing new craft. After a moment, the overpowering fear of such height fades away into your imagination.

Acceleration without inertia. What a strange discontinuity of sensation. Your eyes say one thing, and your inner ear, skin, and muscles say nothing. Finally to fly like an eagle! This must be how Einstein imagined he would have traveled through space, without the noisy Model Ts of Newtonian mechanical propulsion. The gift of your soul to your body, a star ship.

Zippering below you are the skyscrapers of New York. But just a moment or two later, St. Paul's Cathedral snaps into view along the Thames. WHAT AMAZING POWER! The sprawling countrysides of the Netherlands flow by underneath you, like an ocean of meadows. And you turn right.

A large body of water, it must be the Mediterranean. So blue this ancient sea really is. And now, in a sailing ship of the stars, powered by the wind of the Cosmos, we may cross it in three seconds, instead of 3 weeks. As the shore of Africa lights the interior of the craft with a dingy yellow hue, you slow down towards Cairo. You have never seen the Great Pyramid with your own eyes. And there it is. Two million two-ton blocks, placed together with the care of a watchmaker. The dimensions of this mammoth construction are squared to within inches, and its orientation to the headings of the compass, precise. It must be a great construction of intelligent life even on the scale of the heavens. Such perfect construction of such an instructive symbol of intelligence. In its day, its smooth white limestone sides, polished nearly to optical precision, glistened in the light of the sun - or the moon, or the stars. There is now no doubt that this great construction was, at the very least, a testimony to the heavens, if not a construction thereof.

But Africa, the birthplace of humanity, is full of wonders. At one time, the desert of Africa was as green and perfect an oasis as Amazonia today. Creatures of all variety roamed these jungles and plains, a few still remain today. The largest roaming beasts, the most savage hunters, the most poisonous reptiles, the most gentle grazers, the largest and smallest of the insects, fish that survive in dry land and mammals that swim through floods. And the earliest of human beings.

From the tip of Cape Town rises the Great Southern Ocean. Unfettered by land, the southern latitudes have an attitude all their own. The wind blows tempestuously through day and night, in a circle around the globe, driving gigantic, 50 foot ocean waves as common and routine as ripples in a stream. This place is for the bravest of sailors, many of whom met their fate face to face, shoulder to shoulder with nature, not too far from the ice world of Antarctica.

Colder than the deepest winter, home only to the sturdiest of creatures, Antarctica is a world only a few men and women have seen first hand. It is a desolate place, an example of many a world where the mean temperature is just a few degrees cooler. It's a continent of glacial ice, storing a reserve of pure water for warmer times, absorbing it during cooler times. The poles are the sponges of Earth, as they equalize the

depth of the oceans in insurance of a balance between land and sea. What wonderful, rare simplicity and complexity both. How can anyone say that Earth is not a living being in the truest sense?

Past the Strait of Magellan, where in the early 16th century a world was circumnavigated by humans for the first time, the last remaining forest continent of Earth emerges. Life in terms most people cannot comprehend lives here. Millions of species dancing to the music of evolution, eating, sleeping, learning, competing, evolving, loving. The forests, jungles and rivers are the crucible of evolution, and we cut and burn them away.

Then you see them. Living mountain peaks, the chapel spires of Earth rising out of the foggy mist, but not touching your feet. Waterfalls from the heights, into lush forests below. What majestic creatures mountains are. Driven by the geologic life of Earth, they are born, grow, and die as well. Not far from the mountaintops, you are swallowed into a billowing cloud. And you sense the water, gathering together, ready to fall and replenish the life in the forest and rivers below. The gift of the ocean to the land, the cool rain.

As you ascend through the clouds, piercing beyond the lung of your world, a silence strikes every sense of your soul. Your gaze shifts from the blue light below, and you look up. A black blacker than sudden blindness hits your senses, or rather doesn't, as your eyes adjust to the silent night of heaven. And ever so gracefully, the campfires of the Cosmos begin to sparkle. Millions and millions of diamond colored lights are painted across time, shining with their infinitely narrow rays the brightest of lights directly into your eyes. How real the stars now are, without the veil of nitrogen and oxygen to cloud your vision. The life of the Cosmos is staring at you from those points of light. The love of the Cosmos is striking your retina.

As the patterns in the heavens gently turn, showing the motion of your ship, you are overwhelmed by the realization that you're floating in space, in a four dimensional ocean as vast to you now as the ocean must be to an amoeba in a tide pool of the Pacific. Indeed, you realize that we are all amoeba, embarking from a tide pool we call Earth. The vastness crushes your imagination with energy. It is the ultimate frontier, your ultimate purpose. It is the life of the Cosmos.

A profoundly humbling feeling overwhelms you as you realize that you are the truest of explorers, a sailor to other worlds. And then the greatest wisdom settles peacefully in your mind. The sense of time disappears. You were always on your way to this place, to every place, ever since you were like a green blade of grass on the sandy beach. The gift of the land to the ocean, the warm surface of the shore.

As you leave that beautiful, glistening blue Earth behind, you can't help but think how foolish we all have been, caught up in our trivial attentions, to ever have lost humility before nature. All that we have ever really known is locked up on that small blue globe, a vanishing speck of dust in the sea of time.

Some day soon, we shall all venture into the depths of time. But first, we must build an understanding of how we arrived at this place we call the present. We must acquire an understanding of the truth within ourselves, the truth of our souls.

The secret, I believe, rests in a reinterpretation of the nature of the Cosmos. I propose that we consider reinterpreting everything known to science in terms better understood in biology, under the hypothesis that the entire Cosmos is single being of life. I know that this kind of idea is anathema to most scientists, who may consider it "metascience", something like a religious faith and therefore unacceptable to reductionist logic. However, reductionist logic taken to its extreme has surely failed to cure the ills of society, and indeed contributed to most of them, at the same time as it has provided wondrous advances for us all. Since no human could ever understand the details of every specialization of science, must we not have a metascience in order to master the most important teachings from the collection of disciplines of truth? Surely we must make room for a science of holism, and my guess is we will come to think of it as a holy science, with new rituals all its own to ensure its passage to our children.

On July 4, 1994 the United States of America awarded the Liberty Medal to the Czech president, Vaclav Havel. In his speech he took the theme "We are not alone nor for ourselves alone." He observed that the modern age has ended, the artificial world order of the past decades has collapsed and a new more just order has not yet emerged. He went on to say that we are now where classically modern solutions do not give a satisfactory response. We need to anchor the idea of human rights and freedoms in a different place and in a different way than has been done so far. Paradoxically, he says, inspiration for the renewal of lost integrity can again be found in science: a new science that allows itself to transcend its own limits. He gave two examples of this: the anthropic principle, where science is confronted with a mystical implication in that our creation purely from anomaly is difficult to defend. The second idea was James Lovelock's Gaia hypothesis, where Earth is defined and described as literally a living being.

The words of such a holy science would not be laden with abstract nouns and the passive tense, they would be simple, active words. Words that convey precise reality, emotional meaning, and motive as concisely and powerfully as possible.

In the vision I suggest we consider, the Gaia hypothesis is extended in every direction possible. I call it the One Hypothesis. It is not a fundamentally new idea. Various aspects of it have been taught in various forms across history, by minds far greater than mine. In my version, evolution extends back far further than the double-helix of biology, but to space-time itself. In this vision, space-time is not machine, but rather life itself, and the power of evolution rests in a force called love. From these things, so I imagine, springs the Cosmos. Love evolves to reproduce physics, physics evolves to reproduce astrophysics, astrophysics evolves to reproduce chemistry, chemistry evolves to reproduce geology, geology evolves to reproduce ecology, and ecology evolves to reproduce you. We evolve to produce books such as this, to pass on our truth to our distant children.

What distant children shall you evolve to reproduce?

Conclusion

"We are a way for the universe to know itself."

- Carl Sagan

"A perpetual trend toward richness, the outcome of which cannot be foreseen, may be the true fate of the universe."

– George Musser, Staff Editor, *Scientific American*, January 1999

If I were to concentrate the meaning of my book down to two pages, what would I say? Scientists are close to discovering the physical nature of consciousness, and that origin appears startlingly fundamental to the nature of the Cosmos itself. There appears to be a very basic truth to the concept that the Cosmos is collectively conscious, comprised of a seething potential out of which individual beings of reality have formed, everything "material" simply a pattern of energy in time, deeply interconnected into one macrosystem at a quantum level. This has direct implications for the veracity of the ancient concept of the soul, and to a vanishingly young ability in each of us to communicate telepathically and to use the power of intent to literally create reality with our minds. Physicists are also close to discovering the means to derive energy and gravitational propulsion from this same seething vacuum energy. Serious contemplation and study is due to frame with great care the use of these fundamental new abilities.

We do know as scientists now, in just the last part of the last century in the 2000+ years since the birth of a being named Jesus (this accounting of time may seem strange, but that is how we do, in fact, account for it today), that there is unambiguous design in the nature of the Cosmos. It is coming to be understood that consciousness cannot be regarded as an accident. The layers of the onion of cosmology, physics, astrophysics, chemistry, geology, ecology, and biologist cannot be regarded as merely unintended order within chaos. There must at least be some kind of principle of intent at work within the machinery of nature.

I believe that each of these orders within time is like a student of the next higher order, one day to be "promoted" to teacher, in a perpetual process of learning and advancement. It is a continuous pattern of intent, with each order gaining new powers of choice. Every order has its laws, and every order has its freedoms. Every choice has its consequences, which must be learned. Once the lessons of the order are completed, an advancement occurs. A new order emerges. A phase transition in time presents itself, where fundamentally new choices are opened. And the more fundamental the revolution in the history of any species of order, the more lengthy is the period of revolution beyond what that species may expect it to be. We are witnessing one of these ultra-long-wavelength revolutions now.

What is the soul? What are you? Who are you?

The answer represents the ultimate significance of my hypothesis:

Faithful people across Western culture believe that God said: *"I am that I am."* Every scientist could agree with Carl Sagan's first statement in his book *Cosmos*: *"the Cosmos is all that is"*. I am that I am. It is that which is.

These descriptions are nearly identical. The former, however, contains no duality.

Faithful people across Western culture believe that God said: "Let there be light." Every scientist could agree with the following logical sequence: Time has made all things. Time has yielded the Cosmos, through order upon order. The Cosmos is made of light. Light ordered is matter.

The mutual exclusivity of the scientific and religious accounts of creation is clearly without basis. The name science has given to God is Cosmos.

I believe that every one of us is made of light, and every one of us matter. We are made of God. We are children of Cosmos, each a light in time. I – the truth of observation – am – the love of experience. The son and the father and the daughter and the mother are one, in each of us.

Time is a process, not a single linear dimension. The more general word for time is *change*. Patterns of temporal change – electromagnetic dynamics – form matter when organized into shapes called matter. All orders of the Cosmos are built upon this function. The homo sapiens mind has a well-developed grasp of the spatial change component of the evolution of matter, and is just now comprehending the experience of temporal change of matter.

You are entirely and completely a function of the Cosmos. The Cosmos wrote this book. The Cosmos is reading this book. Everything we make, the Cosmos makes. Everything we think, the Cosmos thinks. We are truly individuals within One. Imagination and thought are intent, and it is increasingly obvious that intent has the power to directly cause physical change. Thus, every conscious being has this power. This is a sacred power. It is the true "force".

We are always the student of the higher order and the teacher for the lower order, along a fractal ladder of intent in a field of change. Perhaps one day we will become teachers of younger beings on this world or another, in ways similar to our experience of evolutionary history. One day we may even become the originators of religions for animals lower in the order of our own biology.

You and I, whether good or evil, right or wrong, black or white, rich or poor, human or alien or snake or tree or ocean or stone or mountain or world or galaxy, are the children of Cosmos. You and I are animals of Cosmos called homo sapiens on the being of Cosmos named Earth, our Mother, a blue green speck of truth sparkling in the seething potential of the heavens, herself a child of the infinite possibilities of change.

One day we will experience open contact with animals from other worlds. Perhaps the first ones we meet will turn out to have helped to guide us along, intellectually and perhaps occasionally even genetically, throughout human history. Or perhaps they may be grander beings still than animals, having taken further steps in evolution we can't yet understand.

As that day approaches, we would do well to remember the significance of the most important single word in human language, the word that I believe will ultimately break us into the next epoch of our saga:

The word is TRUTH. Truth experienced, however painful or joyous, is a form of LOVE.

THE END OF THE BEGINNING