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# From the President

In my experiences in attending various Torch club meetings I am impressed by the enthusiastic Torch members. These are the ones who are upbeat and make the clubs work.

One of the most enthusiastic members I've met is Allan Powell of the Hagerstown club. Allan's enthusiasm for Torch is dynamic and contagious. He thoroughly enjoys the fellowship of Torch members and believes belonging to a Torch club is a rewarding opportunity.

Allan started, or has been heavily involved in the starting of, five Torch clubs. One of these, a new club in Waynsboro, Pennsylvania, is awaiting its charter as I write this. The Board of Directors recognized Allan with a special award for his development of new clubs at the 1998 convention at Kalamazoo.

He does this by first obtaining a few names of professionals in the target community. He calls them up or visits them and usually his enthusiasm sells them on the attractiveness of Torch. They in turn suggest others and soon the club is formed and holding regular meetings.

I've asked Allan to conduct a workshop on starting new clubs but he feels more comfortable just doing it himself. But, his experience is too valuable to not spread it around so we may yet persuade him to share

his magic with others.

He would be surprised to hear me say this, but

I've learned much about Torch from Allan. He gives the impression that forming a new Torch club is like discovering a mother lode of gold to be mined. He may be right when you consider the information, knowledge and experience represented by the professional people who are members of a Torch club.

The structure of Torch encourages the mining of this treasure through the presentation of papers, discussion and the dinner conversation at Torch meetings. What better opportunity can there be for those of us who are curious and anxious to learn?

We may not be taking advantage of this treasure we have when inviting prospective members to join. We have to be careful to not be too elitist but actually we are offering them a part of our gold mine. Perhaps we should use a more realistic description but we shouldn't forget that a Torch club is a treasure with its unique assemblage of remarkable people.

—Ralph Falconer



# From the Editor

If you have already read Paul Stanfield's column on the next page, you are aware of the passing of one of Torch's most ardent supporters, Tom Carroll. Tom died February 8, 2000 at the age of 92.

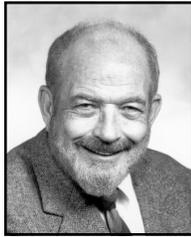
He was a founder and longtime mainstay of the Lincoln Nebraska Torch Club. He was the original compiler of the Lincoln Club archive. In addition he was the author of *The History of Torch*, the definitive source of information on early Torch affairs.

For these and many other substantial contributions to Torch, he was made a life member. In addition, he was a recipient of both the Silver Torch and Gold Torch awards. His fragile health and near-blindness presented his active participation in Torch in recent years, but those of us still participating enjoy the benefit of his many contributions to Torch. Our condolences to his family. We'll all miss Tom.

—Pat Deans

# P.S.

I want to share a few words in personal remembrance of two people who played vital, albeit quite different, roles in the history of Torch.



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I know that Tom Carroll and Carol Estey had an opportunity to meet at the International convention in Des Moines in 1985, but I'm not sure that they did. As different as their backgrounds were, what they had in common was a love for and appreciation of the Torch experience that was matched by few.

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We learned of Carol's death at the convention last year. Tom died earlier this year in Lincoln, Neb., where he had served the Lincoln Torch Club many years as secretary-treasurer. He was 93. But that was but a tiny part of his Torch story. In retirement from his full-time career as an association executive, he became Torch International executive secretary about the time I became a regional director (1978).

He had agreed to serve for only a few years. But when he stepped down, he continued as keeper of the archives and historian.

So most people in Torch now think of Tom as the author of "The Story of Torch," that invaluable document without which we would have only the sketchiest record of the Torch experience.

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Carol did not succeed Tom directly as executive secretary but she was his direct successor as keeper of the Torch flame.

Carol was secretary to Glenn Bostrum, founder and president of the Bostrum management firm of Chicago, when Torch International became a client.

Without going into details, I'll say we had some rocky times at the outset because we in Torch were uncomfortable with a management company instead of a Torch veteran at the helm and a succession of account executives either didn't quite "get it" or were overloaded with other responsibilities or both.

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It became apparent to me, as things began to smooth out, that Carol, as Glen's secretary, was the one who was doing the smoothing. So when our executive of the year left in 1985, and Glen asked me if we would "accept" Carol as a replacement, I heartily agreed, with the

observation that "she's the one who's been doing all the work anyway."

This was a break with our mostly male past as well as our concept of "professional" which didn't include secretaries.

But it was a fortuitous choice for Torch. And for me.

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Jeanne McDonald came on board as editor at the same time, so with Tom as dedicated archivist, Carol as executive secretary and Jeanne as editor — crises were few during my years as president. Lucky me.

Carol quickly moved up in the Bostrum organization, so her time with Torch was limited to a few years. But they were significant years.

? ? ? ? ?

Carol was remembered on these pages in the fall edition and I trust that a more detailed appreciation of Tom Carroll has been prepared by others for this issue.

I write these personal words because each of them contributed so much to my own Torch experience that I wanted to share it with you.

Actually, both contributed to your experience too, though you may not have been aware of it.

**--Paul Stanfield**

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## About Better Torch Papers

**Editor's Note: This is part of an article written by Norris Paxton several years ago and is worth reprinting.**

There are some recognized do's and don'ts in writing for publication. Adherence, peculiarly enough, contributes to better speeches.

The introduction is of major importance. It can excite and prepare both readers and listeners for what follows. Or, it can generate yawns and disinterest. Don't bury the conclusions that excite you in the middle of the text or in a summary. Hit the high points boldly in a concise introduction, then elaborate in carefully organized exposition.

Keep your paper brief and don't belabor the obvious or include unneeded

background. If no souls are saved after 30 minutes of preaching, it is equally true that few Torch listeners or readers are won after the same interval. It is no accident that Torch articles are limited to 3,000 words. Average speakers talk about 3,000 words per half hour.

Your Torch audience is well educated and intelligent, but don't repel it with little understood technical terminology or jargon. Short and simple words often are more expressive and are easier understood.

Torch members are more interested in substance than in pretty writing. We can rework poorly written copy but we can't substitute substance. We prefer subject matter that is new and fresh, that relates to what is happening today or is going to happen tomorrow.

We must depend mainly on you to identify quoted and abstracted material, prefer that it is used sparingly and give preference to original thought and conclusions.

Trust is most important. Check your facts. Don't over-extend yourself in supporting a biased opinion. Torch members won't be deceived and include experts in virtually all learned specialties.

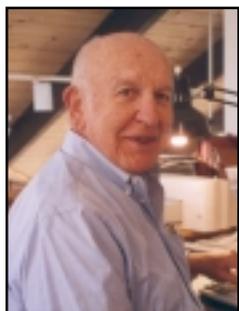
If you insist on preparing a too-long paper, trim it to size before submission for publication.

We will acknowledge your paper, tell you about its chances for publication, resubmit it before publication if substantial changes are made, and be grateful for your cooperation.

The title says it all.

# Global Warming: April Fool?

by R.S. Chamberlin



## About the Author

Roger S. Chamberlin is a native of Unadilla, New York. He served as a Navy pilot in World War II; was graduated from Cornell University in 1950 (B.S. and M.S. in chemical engineering), and was employed by the Dow Chemical Company in various assignments from 1950 to retirement in 1985. Included in his assignments with Dow were Director of Chemical Research Department, Texas Division; Plant Manager of the Magnolia, Arkansas plant; and Manager of Government Affairs, Washington, D.C.

Mr. Chamberlin has extensive experience in the exploration and production of deep underground, geologically ancient seawaters used as raw materials in chemical plants. Along with this he also has extensive experience in chemical process development and plant management. He is now enjoying his retirement on the coast of Maine with skiing and hiking sojourns inland.

This paper was presented to the Torch Club of Western Maine on April 1, 1998.



We've heard much about global warming in the past few years. We know that the concentration of carbon dioxide in the air we breath is increasing, and we're told that's bad. Some people predict catastrophic global warming and call for major cuts in power plant CO<sub>2</sub> emissions. Others counsel more research first. I have reviewed pertinent scientific literature and, foolishly, I dare to draw my own conclusions.

## Temperature

Temperature of the earth's surface and the troposphere, the lower 13,000 meters of the atmosphere, is an obvious aspect of global warming and climate change. It's difficult to measure the overall surface temperature and get something accurate and

precise enough to be useful. Even a few tenths of a degree can be significant when studying global climate changes. There are hot and cold deserts, frozen polar regions, tropical forests, oceans, mountains and so on, all with their own characteristic, long term average temperatures. How should one get an average that adequately represents the earth's overall temperature?

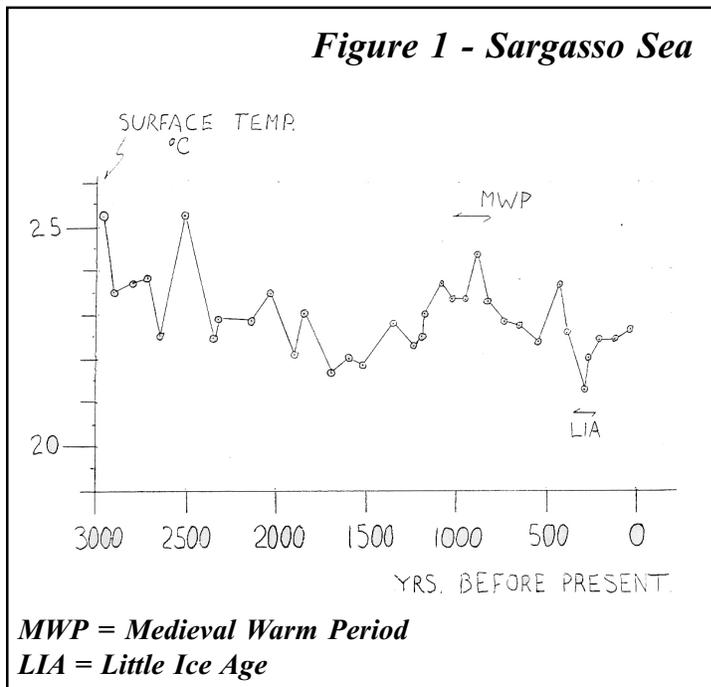
And there's the population problem, i.e., the "heat island effect." The greater the population density of an area, say Manhattan for example, the greater will be its temperature. Of course, this reflects the myriad, fuel-burning activities of people, power plants, factories, cars, homes and so on.

Let's start with temperatures in the ancient past. That way we can learn a lot about what we might get in the future. We know we're interested in the long term, averages over decades, even centuries. And we know there are geological "archives" around the world that can give us an insight into the past. Such archives are found in the polar ice caps and certain ocean floors that have trapped and preserved fluids, solids, pollen and remains of life forms for thousands of years. Now science and technology are providing keys to unlock these treasures of information.

For example researchers at Woods Hole are studying such an archive in the Bermuda rise at the bottom of the Sargasso Sea. Data from their remarkable paper of 1993 are plotted herewith, Figure 1.<sup>1</sup>

The temperature surrogates are the oxygen isotope ratios in the carbonate remains of a certain marine organism in cores taken from the sea floor; the time and date surrogates are the carbon isotope ratios in

the same carbonate. The marine organisms of choice, a plankton, originally lived at the surface of the sea, and the remains have been safely preserved over the centuries in the sediment below. The oxygen ratios are calibrated using long term Bermuda Sea surface data.



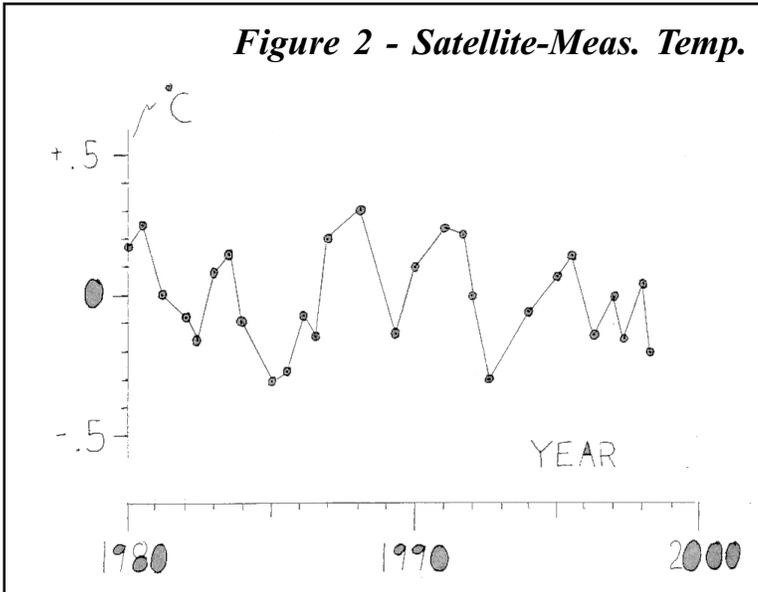
The general shape of this plot, its highs and lows and their timing are substantiated by ongoing studies of ice cores from Greenland and the Antarctic, by tree ring studies and data from other systems.

The plot shows that major changes in climate cause only small changes in temperature. Thus the "medieval warm period," when Greenland was colonized by the Vikings, averaged about 24 C at Bermuda; the "little ice age," 22.5 C. Only 1.5 C difference for a major change in climate. Incidentally, the little ice age was the coldest period in the last 10,000 years. We can be thankful that things have warmed up since then.

Notice that major changes in climate take centuries to occur. This is perhaps the most important conclusion to draw from these data.

We don't know what causes major, long term climate changes, but there are some

**Figure 2 - Satellite-Meas. Temp.**



at the edge of the sea should be noticeable. One theory is that global warming will melt the ice caps and the oceans will rise tens of feet. Well, relax. Data from 84 tidal stations from 1900 to 1980 combined with data from the Topex/Poseidon satellite hint at an 8-inch per

period since this rise began is but a small part of the centuries required historically for major climate changes.

I have said that we don't know what causes the major changes in global climate. Well, we are quite sure that the greenhouse effect and things affecting it are involved. The greenhouse effect is the partial trapping of energy radiation from the earth reducing the loss of the energy to deep space. The incoming radiant energy from the sun, the source of practically all our energy, being of a different wavelength, is not affected by the greenhouse. We need the greenhouse; without it the earth would be a subzero, frozen waste land, the seas would be covered with ice. We wouldn't be here.

Surprisingly, CO<sub>2</sub> plays only a small role in the greenhouse effect. Well, if CO<sub>2</sub> plays a small role, what provides the major? Water! The water vapor in the troposphere provides about 94 percent of the effect; CO<sub>2</sub>, 5 percent and other greenhouse gases such as methane the rest. This means that there's more to global warming than carbon dioxide, and there's more to global carbon dioxide emissions than just that emitted by burning fossil fuels.

**The Carbon Balance**

This chart depicts the atmosphere as the upper box and the oceans, land, soils, animals, plants and fossil fuel burnings by these lower boxes. These arrows, or streams, show estimates of absorption, desorption and emission rates of carbon dioxide by these systems in billion of tons of carbon per year. This chart is based on studies at Bern and Princeton.<sup>4</sup> I don't know why the authors of this paper chose to express units of carbon dioxide as units of carbon. No doubt they are engineering professors. They torture undergraduates by frequently changing units of measurement. Think CO<sub>2</sub>, and if you want the CO<sub>2</sub> units, multiply by

theories. One possibility is small fluctuations in the sun's output. These in turn have been linked to solar magnetic cycles. No definite data are available yet.

Almost certainly these changes in climate will continue. Since the little ice age we've had a warming trend. Notice that most of this trend occurred before the advent of large power plants and other large sources of anthropomorphic carbon dioxide, i.e., "man-engendered" CO<sub>2</sub>.

**Satellite Temperatures**

The next graph, Figure 2, shows the NOAA tiros satellite temperature measurements since 1979.<sup>2</sup> The satellites are in polar orbits and the microwave sounding units aboard are measuring temperatures in the middle troposphere. As the earth rotates inside the orbits the entire globe is scanned, and the data promptly transmitted to computers on the earth. These readings are integrated into a huge database available to all comers. These data agree closely with radiosonde weather balloon data. Thus we have a convenient, reliable system for measuring current temperatures.

The data are monthly average deviations around the mean temperature for 1979 to 1996. The plot show no statistically significant trend, certainly no warming in the past two decades. Maybe the natural component in the oscillation of global temperatures is reversing. Maybe we're going back to an ice age. I doubt it—but the truth is that no one knows.

**Sea Levels**

Now here's an effect we flat landers dwelling

century rise.<sup>5</sup>

Another theory predicts a fall in sea level. The rationale for this is:

- As the seas warm up excessive evaporation to the troposphere occurs. At the same time the ice caps don't melt.
- This leads to increased precipitation over the poles and to increased ice cap thickness.
- The net effect is to transfer water to the ice caps and lower the sea level.

These are preliminary, contradictory theories, but it's nice to hear that as of now the outlook is favorable to us.

**Carbon Dioxide**

Carbon Dioxide concentrations in the troposphere have been increasing since the beginning of the industrial revolution. Here are data from Mauna Loa and the Antarctic, Figure 3.<sup>3</sup> As shown by the plot, the concentration of CO<sub>2</sub> has risen from a steady 280 ppm before 1850 to 350 now, a 25 percent increase. No doubt it will continue and there's little doubt it's due to the man-engendered CO<sub>2</sub>. It should be noted that the

**Figure 3 - CO<sub>2</sub> Conc. at Earth's Surface**

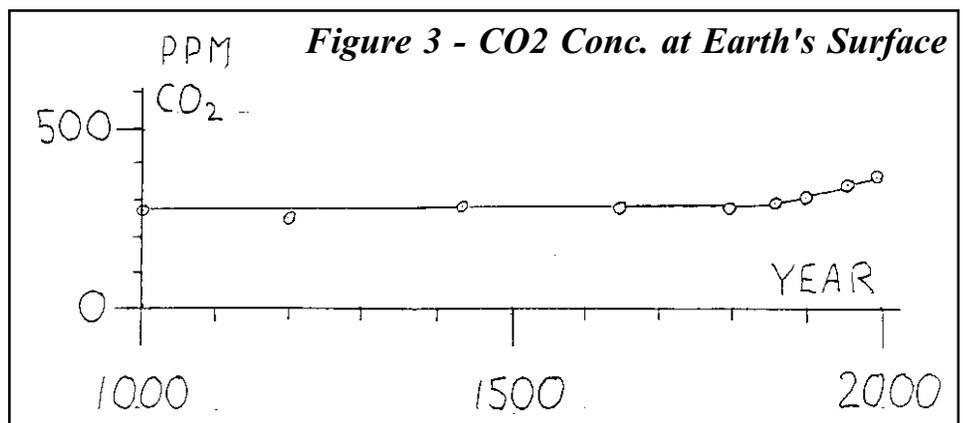
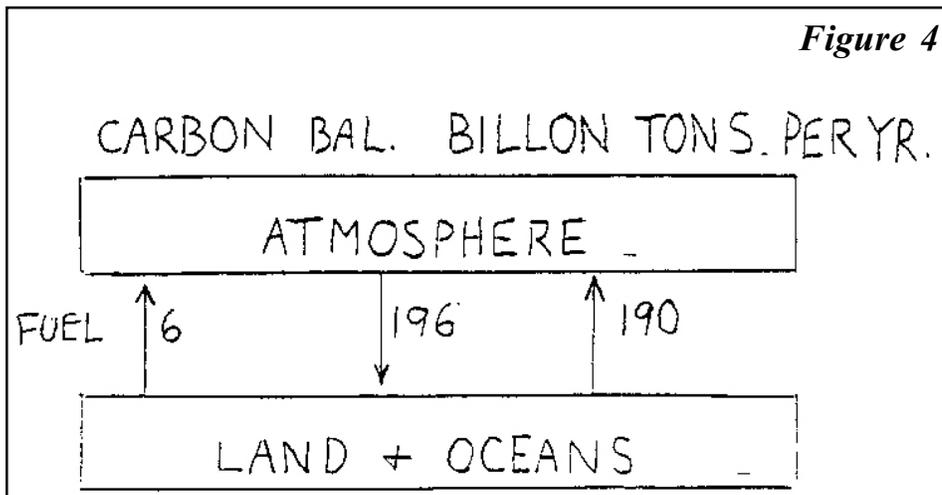


Figure 4



3.67.

These are estimates. Much more work needs to be done, but they are accurate enough to show that carbon dioxide from fossil fuel is but a small portion of the total stream going to the troposphere, of the order of 2.5 percent. The total stream of CO<sub>2</sub> going to the troposphere is 196 billion tons per year, expressed as carbon. It's proposed by some that a 1 to 2 billion ton per year reduction in the fossil fuel stream should be invoked to stem the rate of global warming. That's a maximum of about 1 percent. At the same time these other massive streams would fluctuate up or down out of human control and would almost certainly overwhelm any changes in the fossil fuel stream. The effect of changes in the fossil fuel stream would not be detectable. Also at the same time such a major cutback in fossil fuel use might wreak havoc on the world's economy. It won't work. It's the wrong way to try to do something about global warming.

#### Other Factors

The pace of study of global climate change has picked up over the last two decades. Systems being studied in addition to those I've covered include:

- r The effect of cloud cover
- r Albedo, reflectance, of clouds and other

- surfaces
- r Volcanic dust
- r Jet aircraft
- r Ocean currents and eons long cycles of same
- r Ice cap and sea bottom cores
- r Kinetics of carbon dioxide transfer
- r The effect of increased concentration of CO<sub>2</sub> on photosynthesis

This last might turn out to be especially significant and favorable.

All of these systems and more are probably important. Much progress in understanding these systems will be made over the coming decades using the amazing new tools of science, i.e., satellites, isotopes ratios, traces, remote sensors, coring, ultramicroscopic chemical analyses, computer modeling to name a few.

#### To Review

We know there have been major shifts in global climate requiring centuries to take effect. They will no doubt continue. We don't know what causes these shifts. We know there has been no excessive increase in global temperatures over the past 300 years, only an apparent continuation of ancient warming behavior. We think that most of the greenhouse effect is caused by water, only about 5 percent by carbon dioxide.

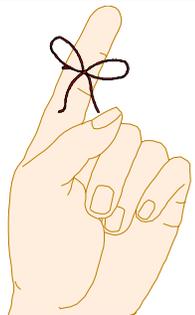
We are quite sure that the concentration of CO<sub>2</sub> in the troposphere is slowly rising due to man-engendered emissions, especially from the burning of forests and fossil fuels. We need to find out what that increase in CO<sub>2</sub> concentrations is doing to life systems and climate systems, if anything. It may be beneficial. We think that fossil fuel carbon dioxide accounts for about 2.5 percent of the emission of carbon dioxide from the earth's surface. We need to confirm that figure. We need to explore possible methods of controlling the rate of CO<sub>2</sub> emission from the land and the oceans; some possibilities exist.

Should we be circumspect of carbon dioxide? Yes; there may be some interlocking, feed-back, triggering system that magnifies the effect of carbon dioxide. Global climate is an extremely complicated system.

Is the excessive global warming scare an April Fool's Day joke? Hardly. It's a serious possibility that we must fully investigate. Yet given the centuries pace of global climate changes and the current behavior of global temperatures, another decade or two of research is not only safe, but wise. The proposed cuts in fossil fuel use are probably not the way to go. We need to be sure we're working on the right end of the horse. We don't want to give him an enema when all he needs is a square meal!

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Mixing science and politics produces political results, not scientific progress.

# Radiation Hormesis, Is It Real?

by Robert C. Rohr, Ph.D.



## About the Author

Bob has been a member of Torch for 42 years. He received his Ph.D. in Physics from the University of Tennessee in 1955. He spent seven years at Carbide and Chemicals Corporation where he was one of the early workers in the field of health physics and in safety studies for handling fissile material. While there he also worked on some of the earliest survey instruments for use in detecting radioactive contamination, and developed an early nuclear accident dosimeter that is still used today. He retired from the Knolls Atomic Power Laboratory (GE) after 32 years. At GE, he did experimental physics work in support of reactor designs for 17 years, managed a chemistry and radiological controls training group at a prototype site for a few years, and later managed a ship and prototype testing group. After retiring from GE, he was an adjunct professor in the Nuclear Engineering Physics Department at RPI for four years. He is listed in "American Men and Women in Science."

Presented to the Schenectady, New York Torch Club on November 12, 1998.



Radiation hormesis, is it real? If it is, then the policies that are used by the U.S. Government, to set cleanup requirements for contaminated sites, and safe dose limits for the public, are not only unnecessarily costly, but may be leading to results that are directly opposite to the desired health result.

The word hormesis may not be familiar to you since it is a comparatively new word and has not yet found its way even into Webster's unabridged dictionary. It comes from the Greek word *hormè*, with the root *hormo*, meaning I excite. The word hormesis has appeared in the scientific literature for at least 15 years. T.D. Luckey, a professor of biochemistry at the University of Missouri, has published two books on the subject and

is internationally known as an expert in the field. In simple terms the word means that low and high doses produce diametrically opposite results. Such effects are common in nature. The most common example is vitamin A. Small amounts are vital to your health, but large amounts are harmful. There are over 1,000 references to beneficial effects of radiation in Luckey's books.

Back in the early '50s, I was working with a health physics group at Oak Ridge. We knew that large doses of radiation were harmful to humans from studies that had been done with x-rays and from the experience of the radium dial painters. At that time, we knew that if you were exposed to 25 Rem you could be sent to a physician who could run any test imaginable and he would not be able to find any evidence of clinical damage. We, however, were concerned about doses in the mrem (.001 Rem) range. Our need was to determine a safe dose at low exposure rates. It was known that radiation damages cells, and therefore radiation was assumed to be dangerous. To be conservative, we made the assumption that the dose response at low levels would be proportionally to the dose at high levels, and applied a safety factor to set dose limits at low levels. It led to the linear no threshold hypothesis (LNT) for dose rate limits. This concept assumes that there is *no* level below which exposure to radiation is *not* detrimental to human health. Subsequently, this hypothesis was accepted as fact and became part of the U.S. and international laws.

In the early '50s, we recognized that we had a large amount of data from monitored individuals that might be useful in determining the effects of low level radiation exposure. We looked at our data and used absenteeism as a measure of deleterious effects. To our surprise we found that absenteeism among our workers was lower than the averages for the region. It was not a very scientific study and we assumed that we were seeing a "healthy worker" phenomenon and that the data were anomalous. A similar result was found for the workers at the Hanford site. Their health also was typical of the experiences of many

early investigators. Even today the "healthy worker" argument persists and is used to discredit deviations from the linear no threshold hypothesis (LNT).

Contrary information has observed for 100 years. In 1898, G.F. Atkinson, (*Science* Vol. 7, 1898) after he saw that irradiated algae grew faster than non-irradiated controls, reported, "the longer my experiments continued, the more mysterious the whole subject seemed." Davey in 1919 (*Journal of Experimental Zoology* Vol. 28, 4476, 1919) found that "homeopathic doses" increased the life span of insects. Lorenz, in his 1954 book, noted a pseudo growth effect. Sacher in 1966 noted (*Radiation and Ageing*, Taylor and Francis, London, 1954, 24) "a vexed problem of paradoxical life prolongation." In 1976, Friedberg reported (Proceedings of the Society for Experimental Biology and Medicine Vol. 151, 808, 1976) "this peculiar curve...in rats...these females did not want to die...the irradiated females did better than the controls." As you can see they all seemed puzzled by the results.

For the past decade or so, Bernard Cohen of the University of Pittsburgh has been studying the effects of radon in homes on the lung cancer rate. He collected data from 1,601 counties in the U.S. that include 90% of the U.S. population. After the public became aware that radon is everywhere and is much higher in certain localities, there was a large increase in measurements of radon in homes. Cohen collected these data, and obtained age adjusted cancer mortality rates from official health statistics (Riggin and Mason, U.S. Cancer Mortality Rates and Trends: 1950-1979, Washington, D.C.: U.S. Government Printing Office; 1983). Cohen's most recent work was published in the *Health Physics* journal in 1997. (*Health Physics* Vol. 72, No. 1, January 1997) The data all show marked deviations from that predicted by the linear no threshold hypothesis. Cohen found a *negative* exposure relationship between county lung cancer rates and county radon, meaning that low levels of radiation exposure *reduce* cancer risk.

Cohen broke the data down into many different classifications such as males versus

females, income per capita, percent of population below poverty level, percent of earnings from farming, retail trade, manufacturing, services or government services, geographic area, population density, and many others; there were about 100 variations. The curves differ somewhat in detail, but all show the same marked deviation from the linear no threshold hypothesis. These data clearly indicate that the linear no threshold hypothesis is not valid for risk of lung cancer from exposure to radon.

Not all scientists agree. There are some that dispute the conclusions of Cohen. It is known from studies of underground miners exposed to radon at much higher levels than the Cohen study, that risk increases with exposure. The mean exposure for the miners was more than 20 times the exposure one would receive from living in an average U.S. house, which has an arithmetic mean concentration of 1.24 picocuries ( $10^{-12}$  Curies) per liter of air. A Curie is that amount of radioactive material that will produce  $3.7 \times 10^{10}$  disintegrations per second. Lubin and Boice (*Journal of the National Cancer Institute* Vol. 89, No. 1, 49-57, January 1997) took the data from eight small studies and combined all eight to produce one plot. They had an obvious bias as indicated by the statement in their article, "Unfortunately, a good deal of publicity has been given to a large ecological study (Cohen) that found a negative exposure response relationship between county lung cancer rates and county radon." Their information is much less comprehensive than Cohen's and is based on a total of 4,263 lung cancer subjects and 6,612 controls. They made no attempt to take into account the prevalence of smoking or lack of it. Smoking, as you are aware, is a known cause of lung cancer. The result they published suggested a positive dose cancer risk response at 4 picocuries per liter. Their conclusion is that the "risk from indoor radon is not likely to be markedly greater than predicted from miners and...that the negative exposure response in some ecological studies is likely due to model misspecification or uncontrolled confounding and can be neglected." The data, however does not exclude the conclusion that there could be no effect, and, hence, are inconclusive. Nobody disputes that there is a positive effect at higher dose rates and Lubin and Boice do not have the detail at the lower rates that are evident in the Cohen study.

In 1989, another group of investigators (*New England Journal of Medicine* Vol. 321, 1285, 1989) headed by A.B. Miller, reviewed the records of all women who had been admitted to Canadian sanitariums for the treatment of tuberculosis. Fluoroscopy was used to examine these women and they all received significant doses of radiation. The study included 31,710 women who were admitted to the sanitariums between 1930 and 1952. That information was then linked to the Canadian National mortality Data Base to determine the breast cancer mortality rate. Doses had to be estimated since they were not measured at the time of the exposure.

Miller, and his group were able to estimate doses for each year of the follow up examinations. They defined <10 RAD as no dose. The RAD unit is the Roentgen Absorbed Dose. It is defined as the amount of radiation that deposits a specific amount of energy in a certain amount of tissue. They tested linear and quadratic equations for the dose versus breast cancer mortality plots and concluded that the linear model was valid, but that there were two slopes, one for lower exposures and one for higher exposures. However, examining the data in the published tables reveals that there is a dip in the region between 10 and 20 RAD. Dr. Myron Pollycove, Professor Emeritus at University of California San Francisco, and Head of Nuclear Medicine at San Francisco General Hospital has reanalyzed the data. He shows a drop in the breast cancer mortality rates at doses below 30 RAD. The data between 15 and 25 RAD show *reduced* incidence of breast cancer.

About 20 years ago, a physician named Najarian, from the Kittery Maine area, noticed an increase in leukemia rates among his patients that worked in the Portsmouth Naval Shipyard. The Portsmouth Naval Shipyard, located in Kittery, Maine, services the nuclear powered fleet. A preliminary study of the Portsmouth workers did not confirm the Najarian result of higher leukemia for higher exposure, but this led to another more detailed investigation.

A comprehensive study on the effects of low level radiation on cancer rates was done by Dr. Genevieve Matonoski, and her associates at Johns Hopkins University (DOE/EV/10095-T2 E1.99; DE 92 003069, June 1991). They studied workers in eight shipyards that were working on the Naval Nuclear Propulsion Program. The eight yards are Charleston, Electric Boat, Mare Island, Newport News, Norfolk, Pearl Harbor,

Portsmouth, and Puget Sound, all involved in overhaul work of the U.S. nuclear powered fleet. The total population in the eight yards was 700,000 workers.

The Johns Hopkins shipyard worker study is unique because all eight yards use uniform monitoring procedures that are all under the oversight of the Naval Nuclear Propulsion program. In addition, not all workers in the shipyards are exposed to radiation, permitting a group of controls that work and live in the same environment, but have no excess exposure to radiation. Monitoring records are well maintained and cover many years. About half of the workers receive measurable doses, and for them the average exposure is about three times the average of the unexposed workers (called non-nuclear workers in the study). Race was not identified, but they were predominantly white. The study included 30,000 workers with over 350,000 person years.

The data were checked for internal consistency and doses were added and compared to the cumulative dosages reported. Cumulative dosages were obtained from the start of the overhauls, that varied for the individual yards but all started between 1957-1967, and continued through the end of the study period—December 31, 1981. The workers were broken into three groups; those that had cumulative doses of >0.5 RAD, <0.5 RAD, and non-nuclear workers. There were 28,060 workers in the high exposure group, 10,462 in the middle group, and 33,353 non-nuclear workers.

The vital status was obtained from several agencies such as the Social Security Administration, Civil Service Active Record System, Civil Service Beneficiary Record System, Health Care Financing Administration, Veterans Administration, the National Death Index, and the Virginia Health Department Vital Records Unit. The authors also worked with the states of California and New Hampshire. Workers in the naval shipyards were on Civil Service. The Health Care Financing Administration covers people on Medicare. The National Death Index covers all deaths in the U.S. In addition, the Epidemiology Department of Johns Hopkins University maintains a vital records unit which coordinates with the procurement of certificates from the various state records offices. Numerous cross checks were made with the death certificates. The study population was followed through the end of 1986.

The results showed that the age

adjusted death rate for the non-nuclear workers is 1.00 indicating rates similar to the general population. Those with the highest exposures show a significantly lower rate indicating a hormesis effect. The middle group also show a significant reduction in risk. Attempts to break the data down into specific causes of cancer were not statistically significant.

An article by Jim Muckerheide in *Nuclear News* (September 1995) reported on studies of the atomic bomb survivors that were followed by the Radiation Effects Research Foundation of Japan. The principal researchers are S. Kondo, professor emeritus at Osaka University and S. Hattori of the Japan Atomic Energy Research Institute. They followed 75,000 persons who received more than 1 RAD with mean doses of 16 - 18 RAD. Results show that there is a *decrease* in cancer mortality for doses less than 20 RAD. Leukemia is the most significant radiation related adverse health effect. It shows the highest excess deaths for survivors, but only at doses exceeding 20 RAD. Survivors have *lower* death rates, than the unexposed population at ages over 55 for both males and females. No genetic effects have been found for children of the bomb survivors.

In March 1994, the United Nations Scientific Committee on the Effects of Atomic Radiation - UNSCEAR - published its report on radiation hormesis, entitled "Adaptive Response to Radiation in Cells and Organisms" (UNSCEAR Report to the General Assembly, Annex B, 1994). The UNSCEAR committee is composed of the leading authorities on this subject from all over the world. The report is based on recently published data compiled by the Committee "...with a view to identifying the cellular mechanisms that may be involved in the adaptive response to low...doses." They reviewed the most important publications on stimulating effects of radiation and reported that adaptive effects, at the biochemical, cellular and organic level, were found in cellular cultures, bacteria, plants, and experimental animals. They note that "the adaptive response has been demonstrated in proliferating lymphocytes and fibroblasts" and that the data suggest "the activation of early protective mechanisms as a response to whole-body irradiation." In reporting on the shipyard worker study, they state that "the statistically significant decrease in standardized mortality cannot be due to the healthy worker effect alone." The report,

approved after 12 years of deliberation, dispels the common notion that even the smallest dose of radiation is harmful. Despite the contrary data in the report, they conclude "it would be premature to conclude that cellular adaptive responses could convey beneficial effects to the organisms that would outweigh the detrimental effects of exposures to low doses...of radiation."

If there is a hormesis effect, then perhaps radiation might be essential to life. There is an interesting group of French studies on the effects of deficit in normal background radiation. My source for this information is a paper by Z. Jaworowski in the international journal of nuclear research (*Nukleonika*, 1995). The data was also published in T.D. Luckey's book (*Hormesis of Ionizing Radiation*, CRC Press, 1980). The French studies, started in the early 1960s, indicate that protozoa and bacteria exposed to artificially lowered natural radiation show a marked decrease in proliferation. This suggests that small doses of radiation may be essential to life. Similar results have been obtained for brine shrimp (*Aerosp. Med.*, Vol. 35, 524, 1964). Luckey has combined all of the data from various studies and proposes a hormesis curve that fits all the data, including that from humans. His curve suggests that the optimum radiation level for beneficial health results is 50 to 100 times the normal background level.

Given that there is evidence that the linear no threshold hypothesis is not valid, and that there appear to be beneficial effects of low level radiation exposures, one might wonder why the laws are kept at arbitrarily low levels. The Environment Protection Agency and the Nuclear Regulatory Commission have some responsibility for setting standards. They along with the Department of Energy, Food and Drug Administration and other federal agencies have extensively funded programs for research, analysis and assessment of radiation health effects. The EPA is now the lead agency. The attitude of the EPA is evident from the following fact. The Scientific Advisory Board to the EPA stated that radium health effects should be based on extensive evidence of radium-ingested populations. The EPA responded that they had a policy that responses would be linear, and that to apply these data would require a change in policy that they would not consider.

Congress set up the Biological Effects of Ionizing Radiation Committee known as

the BEIR committee under the Board of Radiation Effects Research (BRER) of the National Research Council. This committee was designed to represent the consensus of the scientific community. Congress also supports the National Council on Radiation Protection (NCRP), a private nonprofit corporation. These two organizations, the BEIR committee and the National Council on Radiation Protection, are responsible for setting the standards. The independence of these bodies, however, has been compromised since they are funded by Federal agencies with an interest in maintaining the current regulations. These same agencies provide the funds for the National Council on Radiation Protection and Board of Radiation Effects Research. The National Council on Radiation Protection and the Board of Radiation Effects Research select their own members and appoint their own committees, which now consist mostly of members favoring the linear no threshold hypothesis. The National Council on Radiation Protection and the BEIR committee meet in *closed* sessions, without public participation, and *do not* publish their proceedings. Hence, there is no peer review until after they have published the regulations.

Jim Muckerheide in an article published in *21st Century Science and Technology*, Fall 1997, reported that from the 1950s to the 1980s, research that indicated anything other than the linear no threshold hypothesis was considered anomalous. Research on these so called "anomalies" was not supported. For example, Drs. Norman Frigerio and Keith Eckerman along with R.S. Stowe (IAEA Symposium on Biological and Environmental Effects of Low Level Radiation Vol. 2, 285-289, Vienna IAEA, 1976) analyzed cancer rates by states and average whole body doses. This study was done at Argonne to provide a better basis for low level radiation effects in connection with the Calvert Cliffs nuclear plant. The research tested and contradicted the linear no threshold hypothesis. There was 15% less cancer in high background radiation areas. This result has been consistently repeated since the initial report. There were no substantive scientific critical comments on the study, nevertheless, in 1973 the Atomic Energy Commission suddenly terminated the study and the information was not published in the open literature. Muckerheide says that

**Please see "Radiation," page 34**

*Philanthropic organizations face new attitudes in donors.*

# The New Face of Philanthropy: Funding Not-for-Profit Agencies

*by Melinda T. Marsden*



## About the Author

Melinda Marsden has a Bachelor of Education from Bucknell University and a Master of Science in Management

from Frostburg (MD) State University. She has been a practicing Certified Public Accountant and has worked in the finance departments of a variety of manufacturing companies. She has served on the Agency Review and Allocations Committee of the United Way of Washington County, Maryland for the past ten years and has chaired the committee for the past six. She served on the design team that modified the model of results based funding to the needs of the United Way of Washington County, MD and is currently the Vice-President of Agency Relations for that group. Melinda is currently the Executive Director for the Washington County (MD) Historical Society.

Presented to the Hagerstown, Maryland Torch Club on October 20, 1998.



William Aramony, Ellen Cooke, Jim Bakker. Names that evoke scandal in the not-for-profit world. Their fiscal irregularities did severe damage to the organizations with which they were associated and even greater damage to the people those organizations served. These incidents made donors more skeptical of all churches and charities and decreased donations to all such organizations. All in all, this was a great tragedy for everyone in need of the services of these organizations.

There is, however, a silver lining to this dark cloud that has hung over the not-for-profit world. The very skepticism that has developed in the giving public has given impetus to a change in both the way an agency views itself and the way its funders

view that agency. In the past it was often enough for an agency to say, "we do good things," or "we give to the poor." It was, and still is in some areas, common to talk about "clients" and measure "units of service" when discussing results.

Funding in this traditional setting includes such items as the grant application or proposal that focuses on using the "right" words and on what actions the receiving agency will undertake to solve the problem in question. Often the funding agency will look at the agency budget and other sources of funding and will fund the difference between the two, in other words, fund that agency's deficit. But what exactly is being funded? Could the funder be funding inefficiencies? Does the budget being presented represent a good, well-planned agency, providing useful services in a cost-effective manner? It is often very hard to tell and many sources of funding do not have either the expertise or the time to find the answers to these questions.

There is also a problem when the recipients of services are looked upon as clients. The term "Client" has come to connote a passive individual, who receives goods or services. The client is given goods or services without much control or input into the process. An example of this may be found in the welfare system before reform, where individuals were given a variety of benefits without anyone really checking to see if those benefits were the right ones to help that individual get off of the welfare rolls. There was no responsibility to do more than show up to enroll for benefits.

Public housing projects also provide some of the more blatant examples of problems with the client mentality. The worst of these are inhabited by people who feel no responsibility for their housing, do not care for their apartments and do not view the area as a neighborhood or community. The best of these have community associations which look out for the neighbors, and work hard to keep crime and vandalism out of the

area. The sense of responsibility is what separates the two. Real change comes from within communities and people, and cannot be imposed by someone who comes in from outside with a "solution."

The traditional method of funding agencies focused on the agency's activities: how many counseling sessions were held, how many meals were served, or how many children went to camp. The rewards were for actions. But what was the result of these actions? Were these actions effective? Did they change peoples' lives? What were the outcomes?

These questions lead us to the changes which are occurring in the not-for-profit world. The focus is changing from looking at actions to looking at results. It is shifting from looking at clients to looking at customers, from looking at agency activities to looking at change in the lives of these customers.

The biggest question in this new approach is "what is success and how do you measure it?" The agency or organization that is providing the services needs to make these definitions. The closer the definer is to the customer and the situation, the more valid the answers are. The funder's responsibility is to see that the definition of success and the measurement tools prescribed are reasonable, make sense and fit with the priorities set by the funding agency's mission and vision.

One model of this results-oriented funding requires that the agency first define its customer base and determine baseline conditions and behaviors. Then the agency needs to determine what behavioral change or changes will define success for these customers. The measure of this success is called the performance target. Along the way to this target are points at which progress can be measured, which are called milestones. For an alcohol treatment program, the target may be to maintain sobriety for one year after completion of the program and milestones may include:

customer enters treatment facility; customer completes in-patient program; customer attends 90 A.A. meetings in 90 days; customer maintains sobriety for 6 months. It is understood that not all customers are going to reach all the milestones, simply because not all customers are going to succeed.

The next thing that needs to be described is the people who will provide the services to the customers. These include both agency employees and volunteers, and other people within the community that the agency relies on. These non-agency people are called key intermediaries and can include funding sources, people and agencies that refer customers to the agency, other agencies that the current agency can refer customers to and other resources in the community that the agency can count on for support. This information is needed to allow the funding source to determine how likely it is that the agency can reach the target and how well connected it is with the rest of the community. This model tries to help each agency to find its own niche within the community and cooperate with other agencies and organizations to provide the services needed to reach the community's goals.

David Osbourne and Ted Gaebler in their book *Reinventing Government*, use subheadings in their chapter on Results Oriented Government that include: "What Gets Measured Gets Done;" "If You Don't Measure Results, You Can't Tell Success from Failure;" and "If You Can't See Success, You Can't Reward It." Over the past five years, it has been my privilege to be involved with the transition from traditional to results oriented funding with the United Way of Washington County, MD. It has been interesting to see how agency directors and staff sometimes struggle with defining their customer base and the measures of success. One agency director commented to me that she had never really thought about who are her agency program's customers.

The emphasis on success and measurements not only gives the funding agency a clearer view of what its dollars are doing in the community, but also permits the agency to use this information as a management tool to help refine programs in order to achieve better results. If the success target is well defined and the customer milestones leading to that target are reasonable and measurable, then tracking the results becomes an excellent way of

keeping informed about the customers being served. If the results are significantly different than the agency had predicted when preparing their customer milestones, then it may indicate a shift in customer base, or a change in the conditions or baseline behavior in the current customer base. This permits the agency to adjust the services offered to address this change. This improved information allows an agency to be more flexible in coping with any changes in their environment.

It is essential to remember that it is not what actions the agency takes that are important, but what the customer does that is. In the old units of service method of measuring the cost of service, it didn't matter how many clients dropped out of the program or otherwise failed to improve their condition or behavior. Each action or unit counted the same. Thus, you could show a very low cost per unit, but have no successful results to show for it. If cost is spread only over successful results, then the true cost of the program is clear.

On hearing the outcomes based funding idea, the board president of one of the more traditional charities exclaimed, "you make this sound like a business!" The total funding, from all sources, for the 22 agencies that make the United Way of Washington County, MD is just over 16 million dollars. The total campaign achievement for this United Way is just over 1.6 million dollars. If this is not big business, then what is? These millions of dollars must be managed properly and used effectively if we are to convince donors that there is full accountability for their contributions.

Although business has a bad reputation for thinking only of the bottom line, the bottom line for not-for-profit funding is improving the condition and behaviors of people, and of improving the quality of life in our community. Thus a "good" bottom line is the best service to the community for the dollars spent. This is not heartless business but caring, empowering service.

In this new scheme of funding, there is some added responsibility on the funding source. First, it must set its own mission and priorities and communicate them well to the agencies that will seek funding from it. Secondly, it must review all requests for funding to see that the agency has a good understanding of its customers and that the target set for those customers is reasonable and perhaps somewhat ambitious. Thirdly, it must decide whether the people involved

have both the commitment and the expertise to help the customers reach that goal. Fourthly, the cost of the success rates offered must be evaluated to decide if this is a good use of the funds, and lastly the agency must decide if it wants to fund all or part of a program and communicate that decision to the requesting agency. It is always helpful if the agency can benchmark the results that they are projecting against statistics developed by a state or national organization or association.

It is also important that the funding source review the results achieved by the agency as its customers move through the milestones. It is important to the credibility of the funder to see that the results are happening as promised, or that there is a reasonable explanation if there is a major variation either good or bad in the numbers reported. This verification process can also entail some independent confirmation of the results reported by the agency. Any variation needs to be discussed with the agency.

Another facet of this results-based funding is a shift to more local community control of both setting the priorities and the ultimate distribution of funds. The State of Maryland Systems Reform Initiative moves the distribution of some of the funds from the Office of Children, Youth and Families to Local Management Boards, which have been set up in each community. These boards, which are made up of community leaders and social service professionals, have the power to grant funds to a variety of programs that address the issue of family preservation.

One of the more difficult areas for a community funder, such as a United Way, is to determine what sort of programs should be funded. There are several needs assessments and other surveys of public perception of the most important issues facing the community. These must be looked at closely, first, to see if the sample used is a valid one and secondly, to see if the perceived need is in fact the most important issue or the most important unmet need. This can be determined sometimes by a carefully worded survey. Determining if there are any service gaps can also lead a funder to decide to seek proposals to meet these needs.

The improved accountability offered by the results-oriented funding procedure offers an unparalleled opportunity to improve the communication of the benefits that the

**Please see "Funding," page 33**

The development of the alphabet and writing.

# The Civilizing Alphabet

by Dominick J. Fanani, Ph.D.



## About the Author

Dr. Dominick J. Fanani is a Professor of Art Emeritus of Millersville University of Pennsylvania. He earned his Baccalaureate Degree in Art Education at Edinboro University of Pennsylvania, his Master's Degree in Guidance and Personnel at Rutgers University and his Doctor's Degree in Art Education at Pennsylvania State University. Following his World War II military service (served in Tinian in the Marianas), he taught art in public schools in New York State, Connecticut and Pennsylvania. For 20½ years he taught various aspects of art (including ceramics and jewelry) at Millersville University. While at MU he was active in faculty governance, servicing on various committees and as president of the local faculty association.

Dr. Fanani is currently serving a second term as President of the Lancaster Torch Club.

This paper was presented before the Lancaster, Pennsylvania Torch Club on November 2, 1998.



## Introduction

“Cogito, ergo sum” (“I think, therefore I am.”) So wrote Rene Descartes 370 years ago in the *lingua franca* of his day. A score of years later his fellow French philosopher, Blaise Pascal, noted in like vein, “All our dignity consists in thought” and “Man is but a reed, the weakest in nature, but a thinking reed.”

These are commendably concise comments on self-identity, yet a corollary seems apropos: “I *speak*, thereby I express thought.” Thought needs to be communicated. In Act III, Scene ii, of *As You Like It*, Rosalind says, “Do you not know I am a woman? When I think, I must speak.” Shakespeare’s gentle jab applies to all people. Thought *demands* expression: unexpressed

thought can frustrate, grievously, as the person knows whose stroke robs him/her of speech and muscle control but not of the ability to think. So, just speaking is not enough. Oral expression of thought must be in coherent sound patterns that others can understand.

But thought plus speech are not enough either. Prehistoric people had

properly without writing.”

In a recent issue of *The Torch*, fellow club member Herman Stumple suggests that, rather than *homo sapiens*, the creature who knows, we might more appropriately be called *homo scriptor*, the creature who writes. He further states, “So far as I know, this capacity to take thought and sounds and translate them into visible symbols that others can

Evolution of Our Alphabet														
NORTH-SEMETIC	PHOENICIAN	NAME	PHONETIC VALUE	GREEK	NAME	ETRUSCAN	ROMAN	CAROLINE SMALL LETTERS	GOTHIC		ITALIC		ROMAN	
									CAPITALS	SMALL LETTERS	CAPITALS	SMALL LETTERS	CAPITALS	SMALL LETTERS
K	𐤀	ALEPH	ʾ	Α	ALPHA	Α	A	a	A	a	A	a	A	a
Q	𐤁	BETH	B	Β	BETA	Β	B	b	B	b	B	b	B	b
Y	𐤂	GIMEL	G	Γ	GAMMA	Γ	C	c	C	c	C	c	C	c
Δ	𐤃	DALETH	D	Δ	DELTA	Δ	D	d	D	d	D	d	D	d
U	𐤄	HE	H	Ε	EPSILON	Ε	E	e	E	e	E	e	E	e
Y	𐤅	WAW	W	Υ	DIGAMMA	Υ	F	f	F	f	F	f	F	f

thought and speech for tens of thousands of years, with no evident modification of their environments. For them knowledge was a restricted treasure, preserved by certain elders who dispensed it sparingly to members of the next generation. Only after a means of graphic scripition was developed could knowledge be recorded, augmented, transmitted more widely, over longer periods of time.

*Writing* is the graphic counterpart of speech, and is defined as “The act or art of forming...letters or characters that serve as visible signs of ideas, words or symbols.” Writing is essential for the cultural and technical development of any social group. Writing and civilization are interactive, augmentive forces, each needing, each enhancing the other.

*Civilization* is “a relatively high level of cultural and technological development; specifically, the stage of cultural development at which writing and the keeping of records is attained.”<sup>6</sup> Harold Innis is quoted as saying, “All of the factors—geographic, social, economic—that lead to a full civilization simultaneously create a complex of conditions that cannot function

read is a talent that we share with no other living creature.”

Some scholars of ancient writings put writing in three progressing categories: pictographic, transitional and phonetic. Pictographic script deals with direct representation of objects and ideas. In the transitional state simplified pictures gradually become arbitrary symbols, first of objects and then of words and sounds. Phonetic script deals with the graphic representation of vocal sounds, first in syllables and eventually in single, abstract letter-forms.

Because of the great magical power the art of writing has for the unlearned, writing was regarded as beyond humanity’s unassisted powers of creation. The ancient Egyptians ascribed its invention to Thoth, the ibis-headed god of learning and wisdom. The Babylonians attributed it to Nebo, the god of destiny, and the ancient Assyrians to Nabu, the god of wisdom. Brahma, the creator god, brought writing to the Hindus. The early Chinese credited the four-eyed dragon-faced god Ts’ang Chein. The Greeks assigned it to Hermes (the messenger of the gods), the Romans to Mercury (the Roman

version of Hermes), the Teutons to their chief god Odin, the Irish Celts to their deified hero Ogma, the Aztecs to their god of wind and air Quetzalcoatl, and the Hebrews of Biblical times to Moses.

### Developing the Alphabet

We do not know who invented writing, or where, or how long ago. The earliest “writers” known to us were the so-called “reindeer” people who lived in Northern Europe from about 35,000 to 15,000 BC. They scratched, on bone, pictures of the animals they hunted: reindeer, bison, mammoths and saber-toothed tigers. The cave-wall paintings found nearly a century ago in Altamira (N. Spain) and Lascaux (S.W. Central France) provide important evidence that, at least 30,000 years ago, people were drawing pictures to tell stories, were beginning to communicate graphically. It is not likely that this was “art for art’s sake.” These pictures may have had some religious-mystical significance, or some practical use such as recording the results of hunts.

A problem with pictures is that the viewer must know before-hand something about the depicted scene for the artist to communicate. An improvement came with the use of a sequence of related, pictures, much as in today’s comic strips. Step-by-step action was shown, as evidenced in an ancient Egyptian portrayal of a wrestling match in nine sequential scenes.

The next step was the simplification of object drawings, so that the symbol barely resembled the object. North American Indian pictographs and Egyptian hieroglyphs both exemplify the use of these simplified thing-pictures. The Early Egyptians and the Mayans developed symbols for sounds and whole words, and pictures for ideas, but never took the final step of using abstract letter-forms for phonetic sounds, thereby making a true alphabet.

The words “alphabet” is taken from the Greek name for the first two letters, alpha and beta, and its use goes back at least to the 3rd Century BC. The earliest-known alphabet was *North Semetic*, developed around 1700 BC in Palestine and Syria (see chart). It consisted of 22 constant letters. The Arabic and Phoenician alphabets were based on this model, and around 900 BC the Greeks adopted the Phoenician alphabet.

The Phoenician alphabet also gave rise to the Hebraic and Aramic alphabets. For centuries, from the 8th Century BC on, the

Aramic alphabet was the lingua franca for diplomacy and trade. The Aramaic alphabet was thus dispersed from North Africa to Northern India, and became the basis for the alphabets of Afghanistan, Turkestan and India. As in Greece, these non-Semetic people made good use of the Semetic alphabet.

In the Middle East, the Aramaic alphabet fostered the Syrian and Nabatean scripts. Since 200 BC the Syrian script has been the sacred script of the Assyrian Christian Church. The Nabatean script as in use from 150 BC to 500 AD, and led to Classical Arabic, which now is the Iranian script.

Runes were another alphabetic offshoot. Runic alphabets were used in Northern Europe from about the 3rd to the 16th Century AD, and were probably derived from the Etruscan alphabet. The three main Runic branches were Anglo-Saxon, Scandinavian and Germanic. The Runic alphabet was essentially a secret writing system, used for religious and mystical purposes and therefore suppressed by the Roman Church. It consisted almost entirely of straight-line characters that were quite different in order from the original North Semetic alphabet but like it, was read from right to left.

In the 9th Century AD the Greek alphabet was modified into the Cyrillic alphabet, which became the alphabet of Russians, Ukrainians, Bulgarians, and Serbs. From the Etruscans came the Roman alphabet, which ultimately became the Western alphabet. Today, with the Roman alphabet, people write English, Dutch, German, French, Spanish, Portuguese, Italian, Turkish, Polish and, with slight variations, Norwegian, Swedish and Danish.

As David Crystal notes, religious associations strongly affect written languages “because writing is an effective means of guarding and transmitting sacred knowledge. Literacy is available only to an elite in which priests figure prominently.” Missionaries carried religious beliefs (and an alphabet) to people who often had no written language of their own.

Other reasons suggested for the spread of the alphabet are: imposition by conquering armies; expansion of trade that was centered in the Middle East, and colonization.

The names of the letters of the North Semetic alphabet are preserved in the modern Hebrew alphabet (see chart). Most of these Semetic names end with a consonant, while their Greek counterparts most often end with

a vowel. The Semetic names of letters refer mostly to everyday objects such as house (beth), door (daleth) and hook (waw); to parts of the body: hand (yod), palm (kaph), eye (ayin), mouth (pe), head (resh), and tooth (shin), and to animals: ox (aleph), camel (gimel), fish (nun and samekh) and monkey (qoph).

The Phoenician script had no vowels. This was not as serious a problem for the Semetic languages as it was for the Indo-European Greek language. The Greeks took the Phoenician alphabet in toto: its names (which had no meaning in Greek) as well as its order, values and shapes. However, the Greeks converted the five unstressed vowels—aleph, hey, yod, ayin and waw—into the vowels a, e, i, o and u respectively. They also added two new vowels—eta and omega—and three new consonants—theta, phi and psi—to represent sounds in Greek but not Semetic tongues. Curiously enough, the use of vowels at the end of most Greek letter-names was neither Greek nor Phoenician in origin, it was Aramaic.

By using specific vowels the Greeks made the alphabet an accurate phonetic writing system. It permitted one-to-one correspondence—one word to one sound—between the spoken language and the written one. The Romans simplified the alphabet even more by allotting only the initial letter of the Greek word: a instead of alpha, b instead of beta, etc.

Like the Semetic scripts, the earliest Greek script was written from right to left. Later it was written with alternate lines in opposite directions; that is, the first line from right to left, etc. The Greek word for this reversing is *boustrophedon*, literally, “turning like oxen in plowing.” After about 500 BC, however, Greek writing proceeded from left to right.

The Etruscans derived their alphabet from the Greeks, perhaps as early as the 8th Century BC (see chart). The Early Etruscan alphabet had the 22 North Semetic letters plus four Greek ones and, like the Early Greek alphabet, was written from right to left. By the 5th Century BC it had 23 letters (with 3 signs for s) and from that time on it, too, was written from left to right. This early Etruscan alphabet was the link between the Greek and Roman alphabets.

The Romans adopted 22 of the 23 Etruscan letters. They rejected three aspirates (h sounds)—theta, phi and chi—which do not occur in Latin, but kept the letter signs to indicate numbers: L for 50, C

for 100, M for 1000. D was made from half of the Greek sign for “M” and indicated 500. Of the three sibilants (s or sh sounds) the Romans kept only “sigma,” which became S, and added X for the ks sound. Then, around 312 BC, they also dropped the Z, for Early Latin had no z sound either. Its place in the alphabetic order was taken by a new letter, G, to provide a hard “g” sound as in gaggle. After conquering the Greeks in the 1st Century BC, the Romans borrowed some Greek words and then found that, for transliterating words like *zenit* and *zephyros*, they needed Y and Z, which they put at the end of the alphabet.

Oscar Ogg notes that, although Rome’s Golden Age came hundreds of years after the Age of Pericles, Rome was using the alphabet long before the decline of Greece. The Romans took over the Etruscan alphabet about 700 BC. That was only about 100 years after the Phonician alphabet was brought to Greece, and about 300 years before the Greek alphabet was officially adopted in Athens. Thus, to some extent, the Romans and Greeks were working on their respective alphabets at the same time. The Romans did not adopt the Greek alphabet after the Greeks had finished developing it.

The final Roman alphabet had 23 letters. But aren’t there 26 letters in our alphabet? Right! We now have J, U and W, letters the Romans did not have. For them the I and V doubled as vowels and consonants. For example: “Julius” was spelled “IVLIVS.” The confusion was eased in the early Middle Ages, when the J was invented to provide the soft consonantal jee sound as in “job.” The V remained a consonant, and the U was formed to provide the vowel “oo” sound, as in “duty.” The W was added later (12th Century AD) as another consonant, to accommodate an Anglo-Saxon sound. It was made by putting two Vs together and pronouncing it double-u.

Our small letters were also developed during the Middle Ages: prior to that time only capital letters were used. The small letters resulted from incidental changes made while writing capitals rapidly: by eliminating a part of a letter (as in forming *h* from *H*, or *b* from *B*) or by lengthening a part of a letter (as in making *q* from *Q*, or *d* from *D*).

### Writing Materials

The gradual transition from Roman Monumental writing (all capitals) to modern script (capitals and small letters) was mainly

due to the tools used (the reed or quill pen) and to the writing surfaces (papyrus, parchment, vellum and paper). The pen and the smooth surfaces made flowing and connected letters possible, and commercial needs made speed necessary.

Papyrus, an excellent writing material, was invented by the Egyptians, as was the reed pen. The earliest known hieroglyphic writing on papyrus goes back to 3,000 BC. Parchment—the split skin of kid, goat or sheep—was developed in Pergamus about 500 BC, and greatly influenced the use of the alphabet right down to the Middle Ages. Egypt had banned the export of papyrus, thereby fostering the development of parchment as an alternate writing material. Pergamus was an ancient Greek kingdom in present-day Western Turkey. Parchment is a Greek derivative of “Pergamus,” and papyrus is the Latin form of the Greek word “papyros.”

The quill pen was made from a large stiff feather from the wing or tail of a goose. The word pen derives from the Latin word “penna,” which means “feather.” By Medieval times it was the common writing tool, replaced only recently by the metal pen.

Today our main writing material is paper. Oddly enough, it was unknown in Europe before the 11th Century AD, even though the Chinese had invented it nine centuries before. Paper gradually displaced vellum—a fine grained unsplit skin of lamb, kid or calf—that in turn had displaced parchment.

### The Roman Alphabet

As Ogg points out, the Romans established the final order and content of our alphabet, and greatly increased the beauty of the letter forms, in part by replacing angular lines with gradual curves and graceful shapes. Greek letters were shaped during the time of wax writing; that is, writing with a pointed metal tool on wax-coated wooden tablets. The Roman letters became more fluid and graceful largely because they were made with a different tool—the pen—that moved easily over the smooth surfaces of papyrus or parchment.

No Roman letters are of the same thickness throughout: some parts are thick, some are thin (see chart). These variations were caused by the pen point. The reed (or quill) pen naturally made lines thick on vertical strokes and thin on horizontal strokes. This flowing thick-and-thin quality was carried over to the monumental letters

carved in stone.

The Romans made yet another contribution, by ending letter stems with serifs. A *serif* is a thin line set at right angles to the end of a letter stroke. Serifs were found to be necessary finishing touches to letters cut in stone, and were carried over to letters written on papyrus or parchment to give an eye-pleasing finish to the letters (see chart).

The collapse of the Roman Empire marked the end of an era and resulted in a remarkable discontinuity in the political and social structure of Europe. The literate forms of organization gave way to those of a more oral nature. The civil servants who processed the paperwork for the Roman bureaucracy were suddenly unnecessary, and a major incentive for learning to read and write disappeared just as suddenly. In the general populace a similar drop in the literacy level occurred, and scholarly activities came to a standstill.

However, in Europe the Roman Church maintained alphabetic literacy during the Middle Ages. For good reason: Christianity, like Judaism and Islam, is a religion of the Book, in this case the Bible, which encompasses both the Hebrew Scriptures (the Old Testament) and the Gospels (the New Testament). The preservation of literary skills was absolutely essential for the maintenance of Christianity.

Monasteries preserved the alphabet and the art of writing during the Middle Ages. Probably the finest writing in all Western history was done in these secluded sanctuaries. Monks—and sometimes others: refugees, scholars, students, artists—made beautifully written and colorfully decorated manuscripts.

In the 7th Century AD a monastery at Kells, Ireland, produced a magnificent manuscript called “The Book of Kells,” a combined Book of The Gospels and inventory of local records. Its “New Irish” lettering was a transitional stage between Roman capitals and small letters. In the 8th Century, Irish and Roman missionaries brought this script to England where, a century later, the theologian Alquin surely became familiar with the “Anglo-Irish” script these missionaries developed.

In the 9th Century Charlemagne, the first Emperor of the Holy Roman Empire, contributed significantly to the restoration of learning in Europe by establishing schools in various parts of his Empire. The school at

**Please see “Alphabet,” page 35**

The state discussed is Michigan, but Michigan is not alone in this matter.

# A Social Worker's Viewpoint on Prison Growth in Michigan

by George Heron



## About the Author

George Heron is the executive Director of the United Way of Bay County, Michigan. He received his B.A. in Philosophy from Maryknoll College, M.S.T. from New York Theological and M.S.W. from Fordham University. He serves on the board of directors of a prison diversion facility and a community advisory board of a state correction facility.

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## Introduction

My decision to give a presentation on the growth of prisons in Michigan brought me down a very interesting road. I began with a limited understanding of the subject and indeed, the legal and justice systems. Understanding the issue was a challenge for me. I experienced what the prison system was intended to create, namely, intimidation.

I gathered materials from many resources such as the Mackinaw Center, National Institute of Justice and many others. I spoke to representatives of state advocacy organizations, judges, prosecutors, probation and parole officers, a prison warden, a prison guard, the director of an alternative community correction program and the head of a community mental health organization. I hope my journey can translate into an interesting travelogue and create understanding, interest and possibly, involvement for you.

We will look at the facts, review some reasons for these facts, the present situation and a future scenario. The social worker part will kick in when we provide some commentary on the issue.

Between 1974 and 1994 the population of Michigan grew 4.4%. In the same period of time the prison population grew 370%. Obviously, the growth in the number of prisoners necessitated the building of prisons. Before 1973, only 2 prisons were built in Michigan since the turn of the century. In 1973, there were four large facilities, a reception center and some camps. A few hundred women were lodged at the Detroit House of Corrections. The population of the state was about 9,100,000; the population of the prisons was about 7,800.

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***A recent study by the RAND Corporation shows convincingly that the most economical way to decrease drug usage, is intensive drug rehabilitation programs, either voluntary or involuntary and this efficiency study compared the costs of intensive drug rehabilitation to the costs for the increase of police and costs for incarceration.***

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Twenty-five years later there are over 40 facilities including two that house over 1,300 women and 17 camps. The present population of the state is approximately 9,700,000 and the prison population is approximately 47,000. The former represents a growth of 6.6% and the latter, 502.5%.

This growth is reflected in the shift of state government allocations.

In 1983 the budget for the Department of Corrections was \$227,000,000. This accounted for 4% of the general state appropriations and the employment of one out of every fourteen state employees.

In 1997, the budget of the Department of Corrections was \$1,400,000,000 which accounts for 15% of the general state appropriations and the employment of one out of every four state employees.

The Department of Corrections allocations for 1999 has exceeded state allocations to higher education. Last year it took 25 state taxpayers to support one prisoner.

## What are the Causes for the Increase in Prisoners?

Starting in the mid-seventies there was the perception and belief of citizens and legislators that there was a huge increase in crime and many reasons were given including:

- r Breakdown in the moral values and changes in our social structures which were reflected in the increase of unwed mothers, two working parents, disregard for authority, etc.
- r The influx of drugs.
- r The simple demographics of larger numbers of young men who make up the majority of criminals going through the system.
- r Some say that there was a misperception that the criminal was the victim and this created weak attitudes toward punishment, which in turn, created a culture that, you could get away with a crime, and many tried.

It cannot be denied that the public *perceived* that there was a significant increase in crime and that drastic measures had to be taken. The elected politicians reflected these beliefs. There is a question, however, whether there is *actively* a significant increase in crime, especially to justify the extensive increases in the penal system.

Let's review two sources of information about the prevalence of crime.

- r The senior resource is the UCR or Uniform Crime Report of the Federal Bureau of Investigation. This is the number of crimes reported to police agencies across the state with some estimates and their subsequent reports to the FBI. This resource has some limitations because not all crime is reported

either to the police or by the police to the FBI.

r . Scholars prefer another national source of crime data and that is the NCS or National Crime Survey, which since 1973 is conducted by the Department of Justice. Over 50,000 diverse individuals are asked to describe their experiences regarding criminal matters. The data is higher in this survey by almost double because it includes crimes not formally reported.

The results of the FBI figures or the UCR show that after some growth in the 1970s the total index crime has increased hardly at all since the 1980s. These increases were dominated by larcenies and less serious crimes that do not lead to imprisonment. A statistic more relevant to prison growth is the total of violent index crimes such as murder, rape, robbery and felonies assault. These have increased since 1973 but on a scale far too small to explain the tripling of the nation's prison population during the same period.

The National Crime Surveys or the NCS provide even less explanation for the surge in prison intake. These surveys show a slight increase in violent crime prior to 1981 and a slight decrease since They do not reveal anything, which can explain the boom in the prison population.

The most startling comparison is that of two state statistics.

r The index crime rate - Crimes per 100,000 in thousands.

r The incarceration rate - Number of inmates per 100,000.

In recent years the index crime rate has decreased so the increase of prisons does not seem to be caused by sheer numbers.

Also, in 1988 the total felony dispositions were 31,664 and the percent of the total felony dispositions sent to prison was 33.5%.

In 1996 the total felon disposition were 38,749 and the percent of the total felony dispositions to prison was 25.2%.

### **Why the Increase?**

A research project conducted by the Michigan Citizen's Research Council stated the obvious.

Only 11% of Michigan's prison growth can be attributed to the increase in adult arrests. 89% arose from changes in the administration of criminal justice.

The community culture to get tough on crime enacted legislation and Michigan led

the way. This effort was strongly bipartisan.

r More people who were arrested were convicted.

r More people who were convicted eventually ended up in prison.

r More of those who were sent to prison for the same crime were serving more time.

Here are a few examples:

#### **Lifers Laws**

According to the Michigan Department of Corrections, the number of prisoners serving a life sentence grew from 680 in 1974 to nearly 4,000 in 1997 which is an increase of 480%.

At the end of 1995 the number of lifers in Michigan was greater than the total prison population in 14 other states. Over 2,200 of these prisoners are serving non-parole life terms for first degree murder. Unless their conviction is reversed the only way out of prison is to have their sentence commuted or to die.

Approximately 1,720 of these Lifers are serving parolable terms for various offenses. Unlike other states one can be sentenced to parolable life in Michigan for armed robbery, intending to sell over 650 grams of controlled substances, kidnapping and first degree criminal sexual assault.

The amount of time a Lifer has to serve was changed. A Lifer who was sentenced before October 1, 1992 must serve at least 10 years in prison before he or she could be considered for parole.

Even if someone is serving parolable life and has completed their 10 or 15 years, Michigan has a very strict and conservative parole board. This parole board has a philosophy that "life means life." During the last 10 years the average number of lifers interviewed each year ranged between 225 and 250 or a total close to 2,500 but only 28 lifers were paroled. The average time served before being considered by the parole board before 1990 was 15 years. Since 1990, the average length of time served is 20 years.

Although the number of lifers eligible each year increases, the number actually released does not.

1995 - 3  
1996 - 0  
1997 - 4  
1998 - 2

#### **The Michigan Parole Board**

In 1992 as the result of a tragic event, the structure of the parole board in Michigan changed. A man with a criminal sexual background was paroled and soon after, in

Oakland County he committed a series of rapes and murders. The governor initiated a review of the procedures used in the parole process and concluded that major changes were necessary.

The Board was expanded to include mainly individuals from the criminal justice system. Former members of the parole board were civil servants but present members serve "at will" and are under the direction of the head of the Department of Corrections. More importantly, a set of guidelines was established which had a major effect upon whether an individual could be paroled.

The following are the factors, which are considered by the parole board:

r The crime for which the prisoner is serving time.

r Prior criminal record.

r Performance in prison programs.

r Institutional conduct.

r Risk factors: For almost 30 years a risk factor indicator has been used by the Department of Corrections which has pretty accurately determined the probability of success or failure for a prisoner. This includes type of crime, juvenile record and types of misconduct.

r Age.

r Mental status.

The conservative and strict policies of the present parole board has had the following results:

- Fewer felons are being released into society.

- Parole is especially hard for convicts with violent or assault offenses.

- Sex Offenders do not usually get paroled and serve out their maximum sentence.

The Lifer's Law and a strong Parole Board explain how it is difficult for individuals who are sent to prison to get out.

It has also become quite easy to get in.

While 62% of convicted felons are sent to probation, boot camp, or a combination of probation and jail, a large number of them eventually end up in prison.

There is a significant increase in the number of individuals who are on probation or parole who are sent to prison or back to prison for violating conditions of their probation or parole.

Many individuals on probation are drug abusers and must attend rehabilitation and are periodically tested for drugs. They must complete the conditions of probation and attend school, find employment, make restitution, restrict their travel and report

periodically to their parole officer.

Repeated violations of probation and parole conditions or a new criminal charge result in incarceration.

In 1993 there were 1,553 referrals of violators to incarceration and in 1997 there were 3,100.

87% of those who are returned for technical parole violation are for substance abuse and even those who are returned for criminal activity violations almost half are for non-assaultive or drug charge. Michigan is uniquely tough on such violators.

The state of Michigan also has had sentencing guidelines for judges to bring equity and consistency to punishment. The initiation of Truth in Sentencing has had the major effect in the elimination of disciplinary credits (good time) for prisoners and early release to community alternative programs. In talking to one of our circuit judges, I found he was not sure whether the changes in the sentencing guidelines along with the Truth in Sentencing regulations will result in more prisoners being sentenced to prison and being sent for longer periods of time.

However, prisoner advocacy spokespersons present the opinion that these changes will increase the number of persons incarcerated and increase the length of their sentence.

In 1989 there were 31,832 prisoners in Michigan prisons.

- 10% - Individuals who were serving time beyond their minimum
- 21% - Individuals serving minimum to life
- 37% - Individuals serving 2 to 9 years sentence
- 22% - Individuals serving 0 to 2 year sentence

According to projections provided by the Michigan Department of Corrections, in the year 2004 there will be 59,094 prisoners in Michigan prisons.

- 41% - individuals serving past their minimums
- 27% - minimum to life
- 18% - 2-9 years
- 14% - 0-2 years

The scenario, if the present policy continues, will create a system where there will be minimum turnover of space for new prisoners and significant increase in individuals who serve extended sentences.

We will need to continue to build prisons, or, as we are presently doing, to ship prisoners to other states. Prison costs will increase and take more and more resources away from other state responsibilities.

### What is a Social Worker's Viewpoint on This Issue?

The most striking effect this journey has had on me was when I stopped reading about the system and the issues and looked at the profile of the inmates.

No matter to whom I talked, I was assured that the vast majority of people in prisons deserved to be there and, I quote, "for some of those 'bad asses' they do not deserve to see the light of day."

Incarceration serves to punish the criminal and to deter others from crime by *intimidation*.

To consider prisons as we have in recent years primarily as punishment alone will certainly, be increasingly expensive and in many cases, counterproductive.

Prisons exist to protect the public from people we should *be afraid of* not *mad at*. To fill our prisons with more people who annoy, irritate and frustrate us has some short-term benefits but it is not a long-term solution. A large number of parole and probation violators fit this category.

Let's profile the prisoner

95%	male
57%	Minority
17%	out of a statewide
80%	single
90%	no means of income
65%	no high school diploma
Most	functionally illiterate
25%	psychiatric history
16%	juvenile delinquency history
2%	identifiable skill
Most	inner city

This profile of a typical prisoner is rather foreign to most of us in this organization. We live in a different world. Yes, crime has stabilized as a national average but not in the inner city. Crime statistics for our suburbs are similar to those of Finland. The majority of criminals are coming from smaller and smaller sectors of our society. Sectors from which we are continually trying to isolate ourselves.

Unfortunately, a predominant, punitive policy of isolating our inner cities, increasing our police, toughening our laws and their enforcement seems reasonable but is incomplete and will not decrease the number of future inmates.

I am not naive enough to believe that criminals are victims. But as I look at the profile of the criminal I am haunted by what little I do to understand and the need, to

enhance the systems that work with prisoners. We do little for those who are in the system and with some reflection, less for those who are being nurtured into it.

Let's discuss those who are in the system.

Many of them have crossed the line and will be warehoused for the rest of their lives. Honestly, to let them live out their natural lives might be the limit of our help.

However, most inmates will be paroled. Unfortunately, 60% of those who complete their maximum sentence will return to prison within two years. I submit that this high percentage might be an indication of the lack of programs to prepare inmates for release and the lack of programs to assist them when they return into our community.

For example, most of the individuals in prisons are there as the result of substance abuse offenses.

Drug - 13.3%
Robbery - 14.5%
Burglary - 20%
Forgery - 3%

Most of the above felonies are committed under the influence of or in order to provide money for drugs.

A recent study by the RAND Corporation shows convincingly that the most economical way to decrease drug usage, is intensive drug rehabilitation programs, either voluntary or involuntary and this efficiency study compared the costs of intensive drug rehabilitation to the costs for the increase of police and costs for incarceration.

In an exhaustive study on crime prevention conducted for Congress entitled *Preventing Crime: What Works, What Doesn't, What's Promising*, over 500 programs funded by the Department of Justice were studied by a team of scholars from the University of Maryland.

The criteria used in studying these programs in terms of what 'worked' was not a description of the process or even its rationale. The criteria was whether people stopped committing crime.

In dealing with convicts only three programs were identified as 'working.' There are many other programs throughout the country but because of the lack of data or demonstrable results, they were determined to be either promising or not working.

#### For older male ex-offenders:

Vocational training: Teaching inmate's skills and trades are critical so that they could quickly enter the job force in lieu of returning

to crime. However, Michigan has weak vocational and specific skills training programs.

**For convicted offenders:**

Rehabilitation programs with risk-focused treatment. This included social skills, conflict resolution, academic skills and cognitive skills. It is interesting to note that Michigan requires the attainment of a Graduate Equivalency Degree as a prerequisite for parole. However, frequent transfers of prisoners limit the development of consistency of a long-term support program.

**For drug-using offenders in prison:**

Therapeutic community treatment programs.

When I met with Warden Bock at the Saginaw Facility we discussed the availability and value of rehabilitation programs. She concurred that the successful programs are those in which inmates take ownership themselves, such as the therapeutic community treatment programs. As the social worker I asked her what those of us outside the system could do for those who would eventually be paroled. Surprisingly, she did not offer a litany of program needs but she described a single program. Maybe it was an overture to see how much I was concerned. I received an outline of a Life Transition Class which had as its objective: *to provide prisoners with information and exercises which will provide them with some tools to use in making a successful transition from an institutionalized environment to a free environment.*

The warden stated that if I had any suggestions or wished to become involved, she would be receptive.

What is more important for us to consider, is how we begin to work to break the cycle which, unless broken, will be the fuel for the increasing construction of prisons and incarceration of prisoners.

We cannot continue to abandon the inner cities where the majority of our crimes take place and where the majority of children who will become part of the justice and penal system of the future are being born and raised.

We should focus on creating an environment where people can live decent lives. During our lifetimes we have built roads to bring our families, businesses and resources to suburbia, we have not left much behind and continue to be reluctant to do so. What the National Institute of Justice

has documented clearly is that many programs in prevention; intervention and rehabilitation have not worked because they stress only control and punishment.

I was amazed that some of the programs that do work are successful because they begin with a respect for people.

**For infants:**

Frequent home visits by nurses and other professionals who can identify at the earliest time physical, mental and social problems. In many countries of Europe this is standard practice, and there are some programs here in Michigan.

**For Preschoolers:**

Classes with weekly home visits by preschool teachers who can identify problems and to begin and maintain childhood development. A new early Head Start program has this component.

**For delinquent and at-risk preadolescents:**

Family therapy and parent training opportunities which provide skills in personal and interpersonal coping.

**For schools:**

Many school programs are being studied because of the amount of time spent in schools by children at the critical stages of their development. Again, while there are many programs, the following are those which were identified as working.

- **Organizational development for innovation:**

This includes working to change the decision-making processes or authority structuring to enhance the general capacity of the school. This involves teams of staff, parents, students and community members engaged in planning and carrying out activities to improve the schools. This broadened group identifies problems, develops solutions and evaluates results.

- **The communication and reinforcement of clear, consistent norms:**

These are programs aimed at clarifying and communicating norms about behavior by establishing school rules, improving the consistency of their enforcement and communicating the norms through school wide campaigns.

- **Teaching of social competency skills:**

Comprehensive instructional programs that focus on a range on a range of social competency skills, developing self-control, stress management, responsible decision making, and social problem solving and communications skills.

**Conclusion**

I am sure that these programs that work are not new to you, but the frustration expressed in the study was the lack of resources to study the effects of prevention programs so that the ones that “worked” could become priorities.

It seems to me that we can do this by supporting the programs and policies that do work. We need to shift, broaden or complement our obsession with protection with an obsession with prevention.

I would like to end my presentation with an interesting observation. I spoke with many people over the last few months and they were very eager to give me information and their understanding of this subject. Their eagerness intensified when I explained to them my audience was the Torch Club and profiled the members. You are a sophisticated and influential group of community leaders.

I guess they saw me as a messenger to tell you that the present system will not change unless we begin to consider alternatives to a primarily punitive methodology. It is to be hoped that the prospect of seeing more and more of our limited resources going to the incarceration of individuals will force us to develop programs and structures that from the earliest days of their existence will lead them into constructive lifestyles rather than criminal pursuits.

**We want to hear from you...**

If you have any comments, criticisms or suggestions regarding anything you've read in any issue of either *The Torch* magazine or *The Torchlight*, please let us know.

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An interesting and timely look at an important question.

# Why is There No Socialism in the United States?

by George B. DuBois, Jr., Ph.D.



## About the Author

George DuBois started his career as an Instructor of Law at the University of Virginia. He pursued a legal and business career for eight years before deciding he liked teaching better. He taught at independent schools including the Landon School in Bethesda, Maryland, where he was Chairman of the Foreign Language Department and also taught a course in Chinese history. George received his B.A. from Cornell University with a major in philosophy, his J.D. from the University of Virginia, and a Ph.D. from the University of Maryland in American labor history. His manuscript on the subject of the paper presented to the Frederick, Maryland Torch Club is presently under consideration by the University of Illinois Press. His principal hobby is bird watching.

Presented to the Frederick, Maryland Torch Club on May 24, 1999.



When one compares political life in the United States and in Europe, the culture to which most Americans trace their ancestral roots, one is struck immediately by the fact that a socialist or labor party is currently in power in Great Britain, France, and Germany while the United States no longer even has a socialist party—an apparent exception to the normal occidental pattern. The high point for a socialist presidential candidate in this country came in 1912 when Eugene V. Debs, one of the most charismatic men ever in American politics, garnered just 1.8% of the vote in Baltimore. [Here let me say, parenthetically, that since I originally addressed an audience of Marylanders, wherever possible I used use statistics and anecdotes from that state, but be assured that they are representative of the nation as a whole.]

If one looks at changes in society during the era of rapid transition to an industrial economy—from roughly the Civil War to the

First World War in the case of the United States, at first glance one would expect to see the development of a lasting, viable socialist or labor party here. These changes, characterized by exploding economic and demographic growth, were dramatic. In 1860, Baltimore had a little over 200,000 inhabitants with 17,000 wage earners in 3,000 manufacturing and mechanical businesses. By 1890 the population had doubled, the number of wage earners had quadrupled, and the number of manufacturing establishments had more than doubled. The value of manufactures, I might add, had sextupled. Such periods of rapid transition are often marked by severe social discontent.

These statistics only summarize in abstract fashion the changes workers were experiencing—often to their disadvantage. Looking at the world of labor, one sees that the growth of national markets linked by the new railroads was upsetting wage and price patterns previously established in relatively isolated local markets. Economic life was more and more punctuated by a cycle of prosperity followed by harsh downturns—in short, by boom and then by bust, with its consequent large increases in unemployment. Where once the journeyman mechanic had labored in a small unit of production, now he often worked in a factory. Where once his manual skill, acquired from years of apprenticeship was the key to production, now the machine began to supplant him—machines that occasionally maimed or killed him. Psychologically, where once the journeyman mechanic had enjoyed face-to-face daily contact with an employing master craftsman who worked alongside him, now many experienced increasingly impersonal relations. The master craftsman more and more became the seldom-seen businessman.

These are generalizations. Let me humanize workers' problems with some actual recorded experiences. The invention of food canning before the Civil War had led to a huge oyster canning industry in Maryland, with thousands of workers—from canmakers to dredgers. Those who labored as dredgers—on 1500 boats working out of Baltimore alone—were probably the most

down-trodden workers in the State. These men were frequently “shanghaied” by so-called shipping agents. They often suffered hunger, deprivation of wages, injury and even death at the hands of unscrupulous oyster boat captains. The following case of abuse is one among many described in the annual report of Maryland’s labor bureau in 1886:

*John Hood*—Dredger; received at St. Joseph’s hospital; could not walk; had a starved appearance; said that for four weeks he had not enough to eat, and was beaten and overworked. Had ulcers on both feet, and the tips of his fingers and toes were frostbitten (a toe was amputated in the hospital)...21 years old; native of Washington, D.C.

In that same year, 1886, the newspapers of Baltimore reported day after day the events of a struggle by the city’s streetcar workers to shorten grievously long hours. The need for public transportation had expanded with the increase in population and the expanded geographical area of the industrializing city. The average workday was 17 hours by the time streetcar drivers had unhitched their horses and conductors had accounted for fares—six days a week. Including time spent coming to and going from the job, these men had a scant six hours at home, most of which was spent in sleep. Small wonder that a driver often found himself falling asleep while holding the reins. One of the workers summarized the effects, “The first two or three days a fellow feels all right, but toward the end of the week he begins to feel pretty bad. Then he gets his day off and makes up for lost sleep.”

Lack of sleep was not the only consequence of the long working day. A driver’s wife or children customarily brought him a hot meal at one end or the other of his route. If, however, he was late in reaching his destination, he took the meal to the other end of the line and ate it cold. Delays and the consequent need to start the return trip immediately upon arrival also meant that many a driver—and his conductor—started off with no time even to relieve themselves.

Long hours, a cold meal, a full bladder and a struggle to keep their eyes open were the lot of Baltimore's streetcar workers.

One conductor summed up his grievances:

I have two children and often do not see them awake for a week. Every night I go to their bed and look at them while they are asleep and kiss them...if I complain, I would be bounced.

Children too suffered during the industrial revolution. A cannery near Baltimore, for instance, employed two girls in 1912 in a basement room sealing cans with rubber dissolved in benzol. Both suffered internal and external hemorrhages from breathing the fumes. Their white blood cell count just before death was 500 compared to a normal range of 8,000 to 10,000.

Under the circumstances described, at first glance one would expect socialism or some related form of radicalism to take root and flourish. Similar circumstances did produce socialist and labor parties in Europe.

I now turn to the reasons historians have advanced to explain the failure of American socialism. I will start with the political factors. These factors have discouraged the formation of all types of third parties in this country, whether a socialist party, a prohibition party or a libertarian party.

First, our system of winner-takes-all elections deterred formation of third parties—elections for president at the national level and governor at the state level. The presidency and the governorships were the offices with the power of veto, the power of refusing bills passed by the legislature, offices without whose capture little could be accomplished to bring about change. A vote for a socialist candidate for president or governor, a candidate without prospects of electoral success was simply a “wasted vote.” Workers intellectually inclined to socialism voted for either the Democrat or the Republican—the lesser of two evils perhaps, but someone with a chance to win.

Second, the federal system also discouraged third party formation. In the early 1900s British workers had to establish only a single national labor party. American workers, in contrast, were faced with the daunting task of establishing a separate third party in every single state—daunting in terms of expenses and of compliance with multiple sets of requirements to win a place on state and local ballots. Here let us remember that most legislation before the

New Deal took place at the state level.

These are formal aspects of our political system which discouraged radical parties—winner-take-all elections and federalism—but there were informal aspects as well.

Most important here is the practice of the two major parties to co-opt planks from radical parties' platforms. The outstanding example in American history is the radical platform of the unsuccessful, but to the major parties, worrisome Populist party in 1892. Within 30 years the major parties adopted and enshrined in the Constitution itself the Populists' then-radical demands for women's suffrage, direct election of senators, and an income tax. In the United States the goal of the two major political parties was simply to win elections, and they were free to adopt radical proposals as their own if that “theft” kept restless workers voting in the mainstream. In Europe, on the other hand, the goal of political parties traditionally was to represent ideological points of view, and purity of doctrine usually took precedence over electoral success.

Another informal factor, as Stephen Thernstrom has pointed out, was the geographical mobility of workers. From census to ten-year census during the period of industrialization, some half of the workers of any American city changed their state or city of residence. To some extent at least, those seeking to establish a viable socialist or radical party would have found it hard to create a stable core of voters.

A more subtle political factor is early possession of the right to vote by American workers. Here a question of timing is crucial. The United States adopted universal manhood suffrage before the industrial revolution. In Europe workers gained the ballot only after the industrial revolution had already begun. European workers therefore struggled for economic and political rights simultaneously. European workers became keenly aware of the relationship between political power and economic gain. During the period of industrialization, American workers, in contrast, struggled mainly against employers and assumed that with their right to vote they already possessed a full share of political power.

Next, let us look at a few economic factors. Perhaps we are only looking at a single factor since they are all closely intertwined, but for analytic purposes it is useful to treat them separately.

First, Americans were, as David Potter said, a people of plenty. All contemporary

observers of the American labor scene—both before and during the period of industrialization—agreed that the standard of living of American workers—particularly skilled workers—was higher than that of their European counterparts. A higher degree of home ownership, more meat on the table and better clothing seems to have made the majority more willing to tolerate the existing economic system.

Second, American industrial capitalism was an enormous economic success. Our factories produced such an abundance that workers could live better even while inequality of wealth and incomes was increasing. The already higher standard of living of American workers increased over time.

Third, there was a degree of occupational mobility in the United States at least into the lower ranks of white collar workers—even for the unskilled—and a degree of social mobility for one's children. Although there was as much occupational mobility in many European countries, one can't discount the effect of occupational mobility as a factor in dampening enthusiasm for radicalism. About whose mobility are we talking? If we look at foreign-born workers, we find very little mobility, but if we look at white male native-born workers with native-born parents, that is to say, third generation at least, we see considerably more occupational mobility. Each wave of immigrants took the worst jobs and pushed those who preceded upward. The white male native-born with native-born parents—some 40% of all white male workers consistently in every census from 1870 to 1910—profited in particular from this phenomenon and probably had a higher rate of occupational mobility than workers in any European country. And let us remember here that among all workers these native-born workers were surely the most indispensable for any potential radical movement. These men spoke the language and were culturally acclimated. They had a better grasp of how things worked in the new economy. They had on average more education and better work skills. To summarize, relatively high occupational mobility for the 40% of American workers best positioned to lead the labor movement deflated much industrial dissatisfaction.

Fourth, the economic situation even dampened the enthusiasm of many of the foreign-born for radicalism—some 30-odd percent of white male workers in those same

censuses. More immigrants had been low-status peasants in the old country for whom American pay was usually a step up economically. Moreover, many of the foreign-born were distracted by dreams of eventual return to the old country. With savings accumulated from their stint in America, they hoped to resolve the problems that had impelled them to emigrate in the first place. By acquiring land in the “old country,” many could reestablish their traditional way of life. The short-term outlook and narrow focus on earning money of these “birds of passage,” as Gerald Rosenblum has called them, impeded any long-term effort to build a competitive political party. From 1899 to 1924, there were 34.6 departures from the country for every 100 arrivals.

Historians also find immigrants very important as an explanation for another reason. The argument is more or less to the effect that the great diversity of ethnicities in the work force, with differing cultural traditions and languages, made it difficult for workers to relate to each other. I think this argument, while important, is somewhat less so than historians usually claim. Immigrants in Baltimore joined unions just like native-born workers. Besides, I think that, had the key 40% block of native-born workers wanted to promote socialism, they could have strongly influenced the immigrants from Germany and Finland and among immigrant Russian Jews, though not among other nationalities. The native-born were, after all, the common denominator among workers.

Next, having surveyed some political, economic, and ethnic factors, let us look at some historically characteristic American values.

Protestantism has played a major role in the creation of one value that was an obstacle to the socialists: individualism. Protestant dissenters came early to America seeking religious freedom. They brought with them their characteristic desire for an individual direct relationship with God without any earthly intermediary and their concern with the salvation of the individual soul. Their religious stress on the importance of the individual eventually became a secular value as well. Socialists a century and more later had great difficulty in convincing individualistic Americans to vote for candidates advocating a collectivist economic system, the very antithesis of this historically cherished American value.

Another source of that same

individualism was the English middle class, including merchants, artisans, and yeoman farmers. Of the three classes in England in the 17th and 18th centuries, the middle class was uncomfortably sandwiched in between two classes with longer traditions. These were an aristocracy and a servile lower class, remnants of the Middle Ages, remnants of the feudal past. The middle class, the people who came to the American colonies and left noble pretension and servile deference behind, was precisely the group that even in England was trying to break away from the dead hand of the past, was trying to escape economic restrictions, was trying to gain economic freedom. These were the people who crossed the Atlantic to seek by their own individual efforts whatever awaited them of good fortune or bad. Like the Protestant dissenters, they contributed to American individualism.

Another factor is American equalitarianism. We have avoided the indicia of superiority and inferiority left behind in Europe. We have no titles of nobility, no King’s English, no class-specific modes of address or behavior. Leon Sampson took this analysis a step beyond. He argued that Americans rejected socialism because they thought they already had the equality that socialists promised. He argued that American equalitarianism was a surrogate socialism. Historically, the American worker thought he was as good a citizen as anyone else. The European worker knew quite well that he was not.

This sense of social equality, whether or not a mere myth gained impetus from the American revolution when all men were declared to be equal, and most of them began then, if not earlier, to act like it.

The American Revolution also affected our system of values in another way eventually inimical to socialist efforts. It strongly reinforced an already-existing tendency to mistrust government. After his one brilliant paragraph of political philosophy, Thomas Jefferson got to the real meat of the Declaration of Independence: the multiple transgressions of George III and his governments. So suspicious of government were the victorious revolutionaries that their first devised political system, the Articles of Confederation, omitted an executive branch and denied to the new national government the power to tax. At least until well into the 20th century, Jefferson’s dictum that government was best which governed least resonated with most Americans. Socialist

arguments that the way to economic justice was through an all-encompassing state fell mostly on deaf ears, even among workers.

There is another important value—or perhaps it is better called simply an approach to life—which warrants more attention than most historians usually give it: American pragmatism. Philosophers William James and John Dewey attempted in the early 20th century to state pragmatism explicitly in technical philosophic terms, but they did not spin their doctrines out of whole cloth. These men drew upon long-standing, unstated, taken-for-granted American values in formulating what is universally recognized as the only great American school of philosophy. The core of pragmatism as practiced unselfconsciously for centuries by Americans is the solution of problems one at a time without reference to intellectual theory. The pragmatist has a practical approach to problems and compromises when necessary. The pragmatist tends to have short-term goals, those realizable within a foreseeable time span. The pragmatist values inductive reason over deductive—whether the deductive theories of Adam Smith or the deductive theories of Karl Marx. The pragmatist arrives at conclusions only after an analysis of facts. It is not a coincidence that one of labor’s principal demands after 1865 was for the creation of state and national bureaus of labor statistics.

Alexis de Tocqueville, best-known of the thousands of foreigners who have commented on American characteristics, said in the 1830s of Americans that “their minds, accustomed to definite calculations, are frightened by general ideas and they hold practice in greater honor than theory.” Socialism was simply too theoretical to interest most American workers.

If we now turn our attention once again to the history of my own state of Maryland, we can see American pragmatism in action. Leaders among Baltimore’s workers formed independent political parties five times—in 1869, 1877, 1878, 1882, and 1886—to seek a solution to the problems humanized earlier in this paper by the stories of oyster dredger John Hood, of the exhausted streetcar workers, and of the two girls in a basement sealing cans with rubber dissolved in benzol. All these political experiments were to no avail. Despite their efforts, these independent labor parties succeeded only once in electing a single city councilman—

***Please see "Socialism," page 33***

*A discussion of issues most of us prefer to avoid.*

# The Human Quest for Immortality, Are We Living the Wrong Story?

by *Claudia Martin*



## About the Author

Claudia Martin was born in Germany and received her education in Munich during the tumultuous Second World War and post-war years. After receiving the German Abitur she studied piano and voice at the Munich Conservatory. She is a graduate of the Munich Interpreters' College with a Diploma in English Language. Music and language are the twin threads woven through her life. Now retired, she taught piano in her private music studio and worked as a German-English translator. She was Music Director for the Richmond, VA and Winchester, VA Unitarian Church and still sings in community choral groups.

Claudia is the author of numerous philosophical essays, talks for Unitarian services, travel reports and fantasy stories. Her book of stories "Seven Stars of Christmas" was published in 1991. She has been an invited speaker for various community organizations and has conducted seminars on writing.

Claudia emigrated to the United States in 1953 with her husband, Hubert Martin. They have lived in Strasburg, VA since 1973. Both are members of the Winchester, VA Torch Club.

This paper was presented before the Winchester, Virginia Torch Club in May 1998.



With this paper I do not intend to offend personal beliefs about immortality. Personal beliefs are on a different plane than scientific and philosophical considerations. Beliefs simply cannot be argued about. I would like to mention two books which were helpful in writing this paper: *Sex and the Origin of Death*, by William C. Clarke provided scientific information and *Ishmael*, by Daniel Quinn, gave unconventional insights.

And then there was a children's picture book by Colin Thompson entitled *How to Live Forever*. It contained very little text. The pictures showed a vast library with endless shelves of famous books. Their titles, however, were subtly changing from picture to picture (e.g., *A Timely Brief of History* instead of *A Brief History of Time*, *From Eternity to Here* instead of *From Here to Eternity*, etc.).

Those who found within this library a book also entitled *How to Live Forever* were condemned to repeat the present moment forever. Think about it. The greatest moments of ecstasy would soon become unbearable. Eternal bliss would become eternal hell were it to last forever.

"Living forever" is an oxymoron. "Forever" means to remain unchanged, "to live" means continuous change. As soon as metabolism ceases, death of the organism occurs. In death, decay and recycling of the body continues. The physical and chemical features of our planet change continuously. Stars and planets are born and die, maybe even universes run their course of birth and death. The stable nucleus of an atom will eventually decay and turn back into energy, even if it takes five billion years. One dimension of the universe, as we perceive it, is time. Even immense amounts of time do not add up to a "forever." Change alone is constant.

The thesis of this paper is, that the majority of people are living the "wrong story." Contrary to all evidence, we foster various beliefs of personal immortality. We are obsessed with the fear of individual death, and keep on trying to delay or even overcome death through ever more sophisticated rational and irrational schemes. 80% of polled Americans believe in some sort of personal "life after death." In the pursuit of this impossible goal, our species has itself become the dealer of death on this planet. This goes far beyond the role that death of the individual plays in the natural balance of life. Self-aware humans attach a value to the

individual, which nature itself does not. Humans have become the greatest killers which life on earth has ever experienced. Could the slaughter be reduced by living a different story?

Mankind's attempt at dominion over all other life is expressed in the genesis part of the bible. It is the story of mankind's attempt to control the forces of nature and thus death itself. The bible story of the fall of mankind, self-aware and expelled from nature's paradise, is often interpreted as coinciding with the advent of agriculture and animal husbandry. Hunter-gatherers still live in relative paradise, within the naturally determined cycle of birth and death. They are in balance with nature. By contrast, "civilized" humans attempt to dominate nature. The so-called "environment" becomes a mere stage backdrop to human activities and purposes. The needs of all other life forms are largely disregarded.

"Primitive" religions try to influence the powers of nature by irrational means like rituals, incantations, spell casting, amulets, gifts and sacrifices. But death itself is accepted as a natural consequence of life. Eternal life for the individual is seldom a concept for hunter-gatherers. Their goal is a continuing chain of generations. A Plains Indian tribe had a lovely myth. After death people rise up to be clouds. As their last gift of love they send down rain. And then they dissolve into thin air. It would have been hard for nomads to build lasting shrines for their dead. The Semitic nomads solved this by remembering orally and later through writing a whole chain of ancestors, all the so-called "begets" you read about in the bible. Death by old age, starvation, diseases and predators (including other humans) is accepted by hunter-gatherers as sad and painful, but inevitable. Nature may be feared, but is not the enemy which has to be conquered. Neither is death.

The use of fire and tools, however, by hunter-gatherers is the first step in the chain of attempted controls. With it comes the

awareness of human power to inflict death upon others in excess of survival needs. Animals in conflict generally back off before killing each other. Animals usually do not kill for excitement or with the purpose of exterminating other species. A guide in the Serengeti once told us, that among the hundred thousands of mammals and birds we observed there, 90% die of natural causes, like old age, accidents, starvation or diseases. Relatively few are killed by predators. Predators are not particularly successful members of the animal kingdom and need large territories to survive. Their number is limited. Not so with humans. The power over death has made humans the most formidable and abundant predator on the planet.

The will of an organism to live is still one of the greatest mysteries. It cannot be explained by scientific insights into the functioning of body parts. For humans the will to live is the strongest motivator to believe in a continued life after physical death. Fear of danger is a necessary component of the will to live. It triggers the flee or fight response. Eat or be eaten is the law of this planet. The greatest perceivable danger is to become somebody else's dinner. Plants and animals have developed an ingenious arsenal of defenses to avoid being eaten, such as thorns and poisons, warning colorations, camouflage, porcupine quills and skunk smells. The religious rites of humans sometimes use masks with gaping, toothy monster mouths. Such masks are remnants of the ancient fear of being eaten. In medieval mystery plays the "Mouth of Hell," spewing fire and sulfur smells, was a triumph of stage productions. Often the huge mouth of the devil was replicated by a second toothy mouth gaping from his monstrous belly. Animals fear instinctively to be injured or eaten. Humans know that they all will have to die eventually, no matter what the cause.

Death occurs when the complex and incessant process we call metabolism breaks down irrevocably. The death of a multicellular organism inevitably brings about the death of all its billions of cells. If large amounts of cells in a multicellular organism malfunction, the whole organism will also die. Actually, death begins with the death of individual cells. Besides accidental death from outside agents there is the aging process, a planned obsolescence resulting eventually in death.

Without death, the evolution of ever-

changing organisms could not occur. The individual is only a temporary carrier of genetic information and becomes "excess baggage" after reproduction ceases. In animal and human groups the older individuals have an additional, limited function as experienced leaders, care givers, providers and carriers of knowledge. Overcrowding and malfunctioning through limitless aging is not in the interest of life.

At this point I would like to make an excursion to the science of microbiology. Besides accidental death, called necrosis, individual cells of a multicellular organism have a "death gene" built into their DNA. It is activated when circumstances or a preordained time schedule warrants it. The cell will then commit suicide by irrevocably dissolving the nucleus containing its DNA instructions. The cell disintegrates nonviolently. Its materials are absorbed and recycled by surrounding live cells. This suicidal process is called apoptosis. The uncontrolled growth of cancer cells may be partly attributed to the absence of timely activation of the suicide gene. The natural life span of body cells and of the entire multicellular organism seems to be controlled genetically. In bacteria and some single celled animals a process called cryobiosis can occur. Under extreme environmental circumstances, like a drought, metabolism is completely shut down by reversible chemical changes. The potential for life survives in the dead organism till environmental conditions are again favorable. Cryobiosis can occur repeatedly and over long time spans. But eventually the organism dies of old age. It does not live forever. Cryobiosis has never been observed in multicellular organisms. IT is not an argument for "life after death." Neither is cloning, which will only replicate our DNA for one more generation but not our individual personalities.

By the way, the so-called "Near Death Experiences" reported by various people and extolled in New York Times Bestseller books are not a good argument for personal existence after biological death. There are scientific, chemical and neuro-electrical explanations for these hallucinations. It is interesting, that the visions people experience in near-death situations, are culturally conditioned. A Christian will "see" Jesus, a Buddhist will meet with the Buddha. There is no doubt that such visions leave strong imprints on the person experiencing them and are then mistaken for factual

happenings.

Complex animals recognize death. They know when they have killed prey. They mourn the death of their companions or offspring. Mourning basically is the experience of loss. Loss of the enjoyment and usefulness of a companion, which forces the mourner to painfully change deep-seated habits.

Many of the cultural aspects of the human death experience have to do with mourning, which is a sorrowful expression of love, sometimes codified by social customs and obligations. Much of the knowledge we have about our ancestors comes from grave sites containing gifts of precious jewelry, implements, weapons, food, painted servants, or even an army of clay warriors. Catholics pay for masses to be read for the salvation of the departed. Middle Eastern countries hire wailing women to amplify the expression of grief. The spirits of ancestors are venerated, and for some people grandma is still looking down from heaven. In Hong Kong thriving businesses sell paper replicas of Rolls Royces, yachts, computers, etc. which are then burned by grieving relatives to provide the dearly departed with earthly comforts. It is hard for us to accept that our loved-ones are really gone. We wish it to be otherwise. Thus, mourning may be the root for beliefs about personal immortality.

Ulysses' visit to the underworld is the most emotionally touching story of the Odyssey. It represents a turning point in his life. He meets the shadows of his friends and his mother. They mourn for their life on earth. Achilles says he would rather be the lowliest shepherd in the sunshine on a mountain than king of the underworld. Ulysses tries in vain to embrace his mother. She is only a shadow of memories. He comes to grips with his own mortality. By doing so he is finally able to go home to his responsibilities in Ithaca.

The most emotionally moving statues in Athens' National Art Museum are not the immortal gods and strutting athletes, but halls after halls of statues depicting last farewells and mourning. The sculptured marble sarcophagus of Alexander the Great has a side panel showing the grief of women, the gruesome aftermath of the killing fields. Michelangelo's sculpture of the Pieta expresses mourning with unsurpassed impact. Some of the most touching creations of music and drama deal with the subject of mourning and the tragedy of dying. The most famous love stories, such as Romeo

and Juliet, arouse our feelings by the combination of love and death. We recently witnessed the extraordinary mourning of people the whole world over at the death of Princess Diana.

Knowledge of our own mortality is the most essential difference between humans and animals, this infamous "knowledge of good and evil," with death being the ultimate evil. We continuously mourn our own death. After having eaten from the tree of knowledge, humans forever have to work by the sweat of their brows to try to ward off individual death. Being self-aware we cannot really imagine or emotionally accept the truth that our personhood with all its experience, wisdom knowledge and feelings will simply be obliterated at the moment when our cerebral cortex dies. The reality is, however, that nature everywhere deals in expendable abundance.

Thus humanity embarked on the never-ending journey to outwit death, with no regard to the cost to other life forms on this planet. With agriculture and animal husbandry we succeeded in warding off starvation for our own kind but we destroyed at the same time habitat for other living beings. The greed for more of life and the lack of understanding of consequences brought about deforestation, turning fertile land into deserts, climatic changes. With every increase of food supply, population increased also. It became a no-win situation. We started to get into each other's way, invented warfare, killing each other with increasingly effective weapons. Oh, there was so much killing to be done to expand living! We enslaved animals as well as other humans to build tombs and temples, cathedrals and castles, dams and irrigation systems. Where once living forests and wetlands gave home to life we amassed dead rocks to build walled cities. Nowadays we prefer massive shopping centers and asphalted superhighways. With the division of labor came an ever greater need for a bottom layer of toiling individuals, who lived in misery, if not in slavery, so that the upper layers could strive for "progress" in the contest to outwit death. It is understandable, that for the poor wretches at the bottom an imaginary afterlife beyond all the toil, an everlasting paradise somewhere else, was and is the only consolation.

Religions arose which use this innate fear of death as the ultimate power tool. They promise eternal life in exchange for obedience and righteousness. These

promises took such a hold on human imagination, that the righteous warriors of religions became themselves a tool of death, killing millions of non-believers while carrying the promise of eternal life on their bloody banners. The same goes for ideologies, like communism or racism, which promise a paradise on earth, a superrace, a golden future for humans only.

In the meantime, bright minds, step by step, gained real knowledge about the workings of nature. This fostered the illusion of real control, the promise of a better life through the application of science. Science provides the insight on "how things work." By applying scientific knowledge, things have worked better for humans, at least for a while. They work better in prolonging human life, but they also provide ever increasing capacity in the power to kill, with weapons, atomic waste, ecological disasters, societal breakdowns. For instance, the only natural predators that keep human population in check are microbes. Medical science has successfully decreased human misery by understanding and conquering many diseases. This effectively prolongs life, defeats death, at least for a while. Consequently, the population soars, creating more unhealthy living conditions, more starvation, new diseases. Death control without birth control does not work! It may not be within the reach of the human brain to assess the complex consequences resulting from any interference in the balance of nature. The will to live and the will to procreate are the engines of all life. Rooted in emotions they seldom, or never, yield to scientific reasoning.

In the 20th century alone over 250 million humans died of violence inflicted by other humans. Each year millions starve to death. If pneumonia or heart attacks no longer kill us, nature eventually tries to shut off the cerebral controls. By the year 2010 there may be 15 million Alzheimer patients in the U.S. alone. Ten thousands of people in irreversible comas are kept alive in U.S. hospitals. All victims of the fear of death.

The fear of death also produces some strange coping mechanisms in humans. Religions throughout the world have practiced animal and human sacrifices. This is an attempt to pay ransom for one's own life by offering other lives up to the bloodthirsty, death-inflicting gods. Some humans seem to feel the power of their own aliveness stronger by instigating and witnessing suffering and violent death in

others. Consider the spectator sport of gladiators fighting to the death and Christians being eaten by lions in roman coliseums, the Christian burnings of heretics, the Nazi "Super Race" killing the "inferior" millions of Jews, homosexuals and gypsies. Consider bull fights, boxing, blood dripping movies and TV violence.

Some humans like to risk their own lives by thrilling their senses in a defiance of death through daredevil stunts from reckless skiing to going over Niagara Falls in a barrel! Some soldiers experience a battle euphoria and a killing frenzy. Risking our own lives for the sake of saving other lives, of course, is quite a different story.

We try to find "limited immortality" through our offspring. Limiting the population through intentional birth control seems to be an apparent contradiction to this goal. However, it would make sense to abandon our selfish, short-sighted attempts to increase our own individual progeny. If survival of future generation is our goal, we should rather conserve resources, limit populations and practice adaptation to the interdependent web of all life.

Most religions grapple with the quest for immortality by producing fantasies of paradise as well as horror images of all sorts of hells. Rewards and punishments, as tools for social control, are thus extended to an imagined afterlife. Justice is a human concern which clashes with nature's indifference to concepts of "right and wrong." Humans, therefore, like to hope for a judgment day to come. Of the 80% of people in the U.S. believing in the existence of hell only 10% believe that they themselves might go there! The apocalyptic visions of John and other prophets appear today in a new light. We now know the neurological causes of hallucinations and visions, the mechanisms of mental illness. Science can explain the eschatological visions of shamans, prophets and saints as drug-induced or caused by isolation and starvation in the desert, by self-induced trances or by many forms of well understood mental illnesses.

If the human quest for immortality has brought us fatal consequences, could we live a different story? I think so.

Are humans really the crown of creation, the ultimate end of evolution? What hubris.

Can we claim this prerogative on the basis of the belief that only we have an immortal soul?

***Please see "Immortality," page 35***

*A little healthy skepticism about some recent “innovations.”*

# Two Cheers for Ned Ludd

by Jerry L. Petr, Ph.D.



## About the Author

Jerry Petr is Professor of Economics at the University of Nebraska-Lincoln, where he has taught for 34 years. Educated at Cornell (BA), George Washington, and Indiana (MA, PhD) universities, his main academic interests are in comparative economic systems and the history of economic thought. A member (since 1976) and past president of the Lincoln Torch Club, Jerry was the 1985 recipient of Torch's Paxton Lectureship Award. He received the Editor's Quill Award in 1996.

Presented to the torch Club of Lincoln, Nebraska on September 20, 1999.



Having recently turned 60, I've become a bit more reflective about the Game of Life, and its Rules. Many of the Rules we uncover, or invent, as we age; it seems probable that we continue to discover Rules of which we were unaware right up until the Game is over. This paper honors a rule that I only recently discovered, and which I urge you to take advantage of as soon as you are able. For some, that opportunity will come more quickly than for others.

The Rule I honor in this paper is as follows:

“Having attained the age (and associated wisdom) of 60 years, you are entitled to one good public RANT. My Random House unabridged dictionary describes “rant” as “wild, bombastic, extravagant” talk. (They don't mention its value in relieving stress, but I'm sure that's a valid attribute.) And because the Rule only affords you *one* public RANT, you must be selective: I have been. To me, this is a “biggie.”

This rant had its origin in the spring of 1999 with the unexpected coincidence of two experiences. The shooting tragedy at Columbine High School in Littleton, Colorado, occurred at the time that my graduate seminar in the History of Economic Thought was thinking about a 50-year-old

essay by Karl Polanyi, an eminent Austrian-American social scientist/economist.<sup>1</sup> In that essay written in the early post-war years, Polanyi reflected on human interaction with the “machine age” (represented, to him, in its most frightening form by the atomic bomb) and he wondered whether the machine had defeated us. He particularly raised issues relating the machine age (the industrial era) to the market system in provocative ways.

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*A recent national survey asked  
1,000 people "What small  
convenience of the 20th century  
is most taken for granted?"  
Sixty-nine percent picked toilet  
paper...the zipper came in second.*

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At that time, last spring, like most of you, I was desperately trying to figure out “what is going on?” or, better, “what is going wrong?”; and the Polanyi essay about the machine age triggered thoughts about the role and control of technology in our society. The technology of guns, the technology of computers, the technology of entertainment, the technology of information flow, the technology of our culture. We tend, I think, to worship at the altar of technological progress, and, being a curmudgeonly contrarian, I want, in this paper, to challenge our technological enthusiasm and question its consequences for the quality of our lives. The legendary, perhaps mythical, Ned Ludd was a technological resister in early 19th century England whose rowdy followers destroyed “new-fangled” textile machinery in attempts to save jobs and preserve the quality of handcrafted textile goods. Luddite technophobia is much in disfavor in our “high tech” age (to call someone a “Luddite” is not a compliment). This evening I'd like to offer a few words in the tradition of Ned Ludd—maybe two cheers for an early doubter.

Perhaps we can engage in a little informal “benefit-cost analysis” of the technology in our lives. In an attempt to counter the love

affair with technology that surrounds us in our world of laptops and cell phones, electronic commerce and home entertainment centers, SUVs and smart bombs, I'll emphasize the “cost” side, suggest a possibly significant causal factor for those costs, and propose that we, as a society, consider “getting our act together” when it comes to technology assessment and control before the machine age does defeat us—if it hasn't already.

First: Three indictments. If you were asked to list the technologies that dominate your life (and our societal life), it's a fair assumption that television, computers, and the automobile would make the “Top Five” list. I'd like to suggest that each may be more trouble than it's worth. (*It's a “theory,” you know, like evolution. Just a “theory.”—You can still hold to your own beliefs.*)

o Television. Each of us can cite books read long ago that moved or influenced or impressed us. Maybe books that changed our lives. For me, one of those books was *Catcher in the Rye* by Salinger. Another, that I read 20 years ago, written by advertising executive Jerry Mander, was titled *Four Arguments for the Elimination of Television*.<sup>2</sup> And he wasn't kidding.

An after dinner talk isn't the place for laying out the complete case; but we can “round-up the usual suspects.” Mander's arguments, many of which I admired, are ones that you can make yourselves. They had to do with television's impact on individuals (who watch on average almost 5 hours per day—children more), on society, on creativity, on conformity, on experience of and appreciation for nature, and on manipulation and molding of societal opinions. Mander even makes arguments, that I haven't taken the time to research, concerning the potentially harmful physiological effects of lengthy exposure to television light.

Here's one familiar criticism of television's impact. “Only one-third of high school seniors are proficient readers, nearly 10 percent fewer than two years ago, while the number who cannot read at grade level has risen, according to a national survey by

the Department of Education. In announcing the findings..., educators attributed the poor showing to television."<sup>3</sup>

Here's another. Mary Pipher, in her recent book *Another Country*, relates television to the erosion of community.

"Children watch television instead of hearing stories. They are frightened and unruly, numb from hurry and overstimulation. Teenagers run in unsupervised gangs, parents feel isolated and overwhelmed, and elders go days without speaking to anyone..

Freud said that the goal of psychotherapy is the return of the repressed. Ironically, what we have repressed most in this last half of our benighted century is our deep need to be part of a community, to belong to a group of people who know one another well...Without community there is no morality."<sup>4</sup>

Or Mander himself. "We evolve into the images we carry in our minds. We become what we see. And in today's America, what most of us see is one hell of a lot of television."<sup>5</sup>

You can fill in for yourselves the several paragraphs that could here be devoted to the content of those television programs. As one 11-year old child noted, "There is an educational channel. It's called 'off.'"<sup>6</sup>

o The Automobile. Consider a little hypothetical scenario. Suppose a slick-talking extraterrestrial deal-maker named Joe Mephisto had appeared, in 1890, to offer a real deal to a Joint Session of the U.S. Congress. In this hypothetical, Joe's offer would have been to provide a new technology that would speed transportation, enhance the flexibility and freedom of human movement, provide billions of dollars of stimulation to the American economy, and employ millions of people. The cost? Some small change like urban sprawl, destruction of community, environmental deterioration, and—the bottom line, eventually about 43,000 lives per year (and additional pain and injury, and destruction). Remember, the death toll at Columbine was 15. Would Congress have agreed to that human sacrifice in the name of economic advance and flexibility of personal movement? Would they agree today to accept the sacrifice of even 4,300 lives to a comparable technological breakthrough? Can we explain the logical "disjunction" whereby an idea that is horrifying in contemplation is routinely accepted in realization? (I guess that's another Torch paper by a different author.)

One commentator wonders, "What does the automobile do best: pull families apart, cause urban sprawl, distort our sense of distance, or make travel more convenient? Only the last—convenience—is proven false every morning at rush hour, yet the car was sold to us on metaphors of speed and convenience."<sup>7</sup>

Of course in Lincoln we may challenge that "rush hour" observation. But I can tell you that in 1992 I spent five months in Kosice, Slovakia, without a private automobile. In 1998, I spent 5 days in southern California with a private automobile. My transportation needs were better served in Kosice.

o The Computer. Here is where I really skate on thin ice. But what's a Torch paper for if not to test the thin ice—and more expert Torch members can always offer the rebuttal paper when it's their turn.

I think I need not provide evidence for the omnipresence of the computer in our lives and our apparent dependence on it. From its relatively benign introduction a few decades ago, through its meteoric rise to domination in our lifetimes, if we listen to the current Y2K discussions we might believe that the fate of human society rests upon the machines' ability to cope with a date change that we used to accomplish by tearing off a calendar page.

Well, God Bless the Lead Pencil Club. For those of us of the Neanderthal ethnic persuasion, a little collection of "letters, essays, cartoon, and commentary on how and why to live contraption-free in a computer-crazed world" titled *Minutes of the Lead Pencil Club*<sup>8</sup> provides a sane respite from the computomania that threatens to overwhelm us.

The Lead Pencil Club (Director Emeritus, Henry David Thoreau) contains cranks and curmudgeons whose digs at our computerized world range from the mildly humorous to the biting critical. Neil Postman, critic, writer, educator, communications theorist, offers a mid-range critique. "Attend any conference on telecommunications or computer technology, and you will be attending a celebration of innovative machinery that generates, stores, and distributes more information, more conveniently, at greater speeds than ever before. To the question 'What problem does the information solve?' the answer is usually 'How to generate, store, and distribute more information, more conveniently, at greater speeds than ever before.'"<sup>9</sup> Or, as Thoreau

put it, "We are in great haste to construct a magnetic telegraph from Maine to Texas, but Maine and Texas, it may be, have nothing important to communicate."<sup>10</sup>

Such criticisms disparage a technology's positive contribution. But is it possible that, like television and automobiles, there can be a significant downside to the technological web at whose center sits the computer? Recalling Mary Pipher's lament on the role of television in undermining community, Lead Pencil Club member Paul Goldberger asserts, "Cyberspace is private space, not public space: it is a set of silicon bubbles, not a town square with a soapbox. In cyberspace people are alone, pretending to be in public. In real public space they are physically together, and if they may sometimes pretend to be alone, that doesn't change the basic fact that they must, in a profound and serious way, acknowledge each other. There are social graces—nods, handshakes, not interrupting while another is talking, courteous farewells—that are a normal part of even the most casual human interaction. In cyberspace such things barely exist."<sup>11</sup>

Thinking back to the Littleton tragedy that started me on this rant, what sorts of content can be increasingly rapidly accessed, disseminated, and absorbed within the silicon bubbles of that private cyberspace. Does it embolden and empower "the crazies?" Does it additionally disequilibrate "the crazed?" Does it further isolate and alienate those who already feel themselves to be outcasts?

And, as the computer revolutionizes everything from the economy to military technology, more perplexing societal concerns can be raised (although certainly not answered here.) Does the economic "globalization" facilitated by the computer-based technological revolution in telecommunications worsen disparities in world income distribution or hasten "global warming?" Do the advent of "smart bombs" and bloodless violence desensitize us to the agonies of warfare—so that it becomes little more than a video game? (Or do video games nurture a taste for violence that is only satiated by "acting out" in the real society?)

Perhaps Thoreau was on to something when he wrote (probably with a lead pencil), "So with a hundred 'modern improvements.' There is an illusion about them; there is not always a positive advance. The devil goes on exacting compound interest to the last for his early share and numerous succeeding

investments in them. Our inventions are wont to be pretty toys, which distract our attention from serious things. They are but improved means to unimproved ends.”<sup>12</sup>

One of the important contributors to the *Minutes of the Lead Pencil Club*, Kentucky farmer and writer Wendell Berry, offers the following.

“I am moreover a Luddite, in what I take to be the true and appropriate sense. I am not “against technology” so much as I am for community. When the choice is between the health of a community and technological innovation, I choose the health of the community. I would unhesitatingly destroy a machine before I would allow the machine to destroy my community.”<sup>13</sup>

I won’t even bother to tee off on the technology of the cell phone; we need to move toward a conclusion of this ill-tempered rant.

As you listen to this diatribe, are you already muttering that no technology is harmful in itself—it depends on how we use it? That’s probably correct. And here we come back, very briefly, to Karl Polanyi and his musings on the tussle between humanity and the Machine Age.

What does determine how we use technology? To a great extent, profitability in the marketplace. Technological innovation is responsive to the bottom line; the bottom line, perhaps too often, may also be where we find the lowest common denominator of human judgment and taste. If we accept the argument that “the customer is always right”; if we worship at the alter of “consumer sovereignty”; and if that consumer is motivated and that sovereignty is exercised in response to the blandishments of advertising and the self interest of the producer, we find ourselves living in a distant bedroom community, supporting a three-car garage and its occupants, fighting traffic snarls on the freeway, being assaulted by Jerry Springer on the airwaves, and subjecting our children to pornography or violence on the internet. Why? Because that’s what people want, isn’t it? Or, at least, that’s what’s profitable.

When the machine age meets the market economy, lots of money can be made by selling the technology and its associated infrastructure. With the car go the highways and the strip malls. With the computer go the modems and the fax machines and the e-commerce. With the television arrives the advertising potential of snappy, vivid eye-catching, ear-grabbing 30-second spots

selling us potato chips and political candidates. If we act as if the consequences are a purely private matter, we cannot help but be surprised, and possibly dismayed, by the social consequences.

Even as I write these words, I am shaken by their political implications. If not consumer sovereignty, what? If not individual choice, whose? Questioning the individuality and independent action that underlie the market economy certainly raises issues of personal freedoms that I, as a “card carrying member of the ACLU,” take very seriously.

And yet, we also recognize that freedom must be used responsibly if a livable community is to be preserved. Yes, we must have freedom to think as we wish, to speak those ideas, to read what we choose, to associate with whom we please, to worship as our conscience guides us.

But does a society of liberty also require freedom to do what we will, to produce whatever is technologically feasible, to sell whatever we can be persuaded is fashionable, to possess whatever our neighbors have? Is our societal beacon to be the profit motive or the community good? Is technological commercialism doing us in?

So, does a rant require a resolution? This is certainly a paper of questions rather than answers. It suggests that perhaps we should, as a society, be more reflective about the consequences of our technological toys, and more willing to be assertive in protecting our community values. Can technology be evaluated, can it be monitored, can it be guided, can it be subjected to human judgment?

Wendell Berry might start us thinking about such a task. He offers some standards for judging technological innovation:

- “The new tool should be cheaper than the one it replaces.
- It should be as least as small in scale as the one it replaces.
- It should do work that is clearly and demonstrably better than the one it replaces.
- It should use less energy than the one it replaces.
- If possible, it should use some form of solar energy, such as that of the body.
- It should be repairable by a person of ordinary intelligence, provided that he or she had the necessary tools.
- It should be purchasable and repairable as near to home as possible.
- It should come from a small, privately owned shop or store that will take it back for

maintenance and repair.

- It should not replace or disrupt anything good that already exists, and this includes family and community relationships.”<sup>14</sup>

Maybe Berry’s guidelines aren’t exactly to your taste. I’m not enthused about all of them.

How about Jerry Mander’s “Ten Recommended Attitudes About Technology?”

- “Since most of what we are told about new technology comes from its proponents, be deeply skeptical of all claims.
  - Assume all technology ‘guilty until proven innocent.’
  - Eschew the idea that technology is neutral or ‘value free.’ Every technology has *inherent and identifiable* social, political, and environmental consequences.
  - The fact that technology has a natural flash and appeal is meaningless. Negative attributes are slow to emerge.
  - Never judge a technology by the way it benefits you personally. Seek a holistic view of its impacts. The operative question is not whether it benefits you, but who benefits most? And to what end?
  - Keep in mind that an individual technology is only one piece of a larger web of technologies, ‘metatechnology.’ The operative question here is how the individual technology fits the larger one.
  - Make distinctions between technologies that primarily serve the individual or the small community (e.g., solar energy) and those that operate on a scale outside of community control (e.g., nuclear energy.) The latter kind is the major problem of the day.
  - When it is argued that the benefits of the technological lifeway are worthwhile despite harmful outcomes, recall that Lewis Mumford referred to these alleged benefits as ‘bribery.’ Cite the figures about crime, suicide, alienation, drug abuse, as well as environmental and cultural degradation.
  - Do not accept the homily that ‘once the genie is out of the bottle you cannot put it back,’ or that rejecting a technology is impossible. Such attitudes induce passivity and confirm victimization.
  - In thinking about technology within the present climate of technological worship, emphasize the negative. This brings balance. Negativity is positive.”<sup>15</sup>
- Enough of all the hand-wringers and party-poopers. Note, after all this “rant,” that the paper is titled “Two Cheers for Ned Ludd”—meaning, I suppose, that I’m not a
- Please see “Cheers,” page 35**

Further thoughts on a controversial subject.

# Physician Assisted Suicide

by Richard P. Heuschele, M.D., F.A.C.R.

Photo  
not  
available

## About the Author

Richard Heuschele was born in Alma, Michigan and earned his B.S. in chemistry at Alma College. He went on to the University of Michigan Medical School, where he earned his M.D. He served an internship at Midland Hospital and a residency in radiology at the University of Michigan Medical Center. His professional practice was in the field of magnetic imaging. He is presently retired and consults in radiology part time. He has served in numerous leadership positions in professional areas, both local and state. He took part in the Michigan Medical Society debate on its position on the subject of physician assisted suicide. When the Oregon legislation permitting physician assisted suicide was passed, he decided to research the subject as a matter of personal interest. This was a much discussed topic in Michigan at the time and the program committee of the Saginaw Valley Torch Club asked him to write a paper on the subject. This paper is the result.

Presented in November, 1997 to the Saginaw Valley, Michigan Torch Club.

How did we get into this mess? In the 35 years that I have been in clinical medicine many dramatic changes have occurred technologically, which allow us to sustain life while some treatment is given to correct a problem, but also when no cure is available. CPR was not fully developed until the 1970s; prior to that open massage of the heart could be attempted with some success if the patient was under observation in a hospital. The early attempts at external massage were not very successful until the full protocol including defibrillation was developed. Pacemakers came along also in the early 1970s and are a great solution for a small group of patients. The next major development, also in the 1970s, was the ventilator. Previously we marked the time of

the spontaneous arrest of respiration as the time of death; e.g., respirations ceased at 10:50 p.m. Now we're much more focused on cardiac activity. Ventilators are so readily available in the hospital setting that patients may end up on one by default; if the patient's desire to not be placed on a ventilator is unknown to the caregivers, the default is always to preserve life. There has been a rising public awareness and knowledge of available techniques that has resulted in both increased expectations of success and fear of how technology might be used to prolong life in an undignified state and at great expense.

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*Right to die litigation  
in the past 20 years has helped  
establish the ground rules  
for terminating life support  
and has firmly defined the  
patient's right to refuse treatment.*

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Right to die litigation in the past 20 years has helped establish the ground rules for terminating life support and has firmly defined the patient's right to refuse treatment. In 1990 Michigan passed a Durable Power of Attorney for Health Care statute which permits individuals to put their end of life wishes in writing in a form which enables caregivers to honor them even if the patient is unable to express them due to illness. Such laws are found in 43 states currently. Problems develop when there has been conversation about these desires with loved ones but no written documentation. The documentation also may not be available at the time emergency treatment is started. For terminal patients this can be avoided by the patient carrying or wearing a DNR tag.

Another factor is rising awareness of diseases which kill slowly, other than malignancies, and usually involve the gradual loss of mental capacity and/or neurologic control, such as Alzheimer's, ALS or MS. These patients may want to end it all while still in control. Dr. John Finn, Medical Director of Hospice of Michigan feels that the request for PAS is a cry for help to which

the physician should respond by giving increased care.

A few definitions are in order before we proceed:

**Physician assisted suicide (PAS):** physician supplies the means to end life with the understanding that the patient intends to use it to end his or her own life.

**Passive euthanasia:** "pulling the plug"

**Active euthanasia:** death brought about by administering the means directly to the patient intending that death will occur.

**Physician assisted death:** general term including PAS and active euthanasia.

A potent force in the issue of PAS is the Hemlock Society and its founder, Derek Humphry.<sup>1</sup> Humphry, a British newspaper reporter, now living in the U.S., helped his wife, Jean, a cancer victim in pain due to bone metastases, to die in 1975. He was able to secure a fatal dose of medication from a physician friend. In 1980 he founded the Hemlock Society and was its executive director until 1992. He is currently president of ERGO (Euthanasia Research and Guidance Organization). He has written several books on the subject including: *Jean's Way, Let Me Die Before I Wake, The Right to Die, Dying With Dignity, Lawful Exit, and Final Exit.*

*Final Exit*, first published in 1991, is now available in its second edition of 1996. Humphry reviews current U.S. law and warns of the danger in assisting suicide either as a lay person or a physician. His conclusion is that it is acceptable to be present but not to directly assist or provide the means. He does a good job of discussing depression and advising those who may be depressed to seek psychiatric help. He argues strongly for legalizing PAS and in my opinion sees PAS as the first step in making active euthanasia legal. Since PAS is not legal and few physicians are willing to risk participation, Humphry devotes much of *Final Exit* to describing how to and how not to commit suicide in a peaceful, non-violent manner. The book contains a 25 point checklist before considering suicide and an 8 step preparation for the act. There is also a chart of drugs, their lethal doses, and their relative advantages/ since drug availability

is a problem, a major component of his method is to use a plastic bag over the head to speed and assure death once the person is unconscious. This assures death even though the dose may have been only sufficient to cause deep sleep or coma due to poor absorption or an inadequate dose. The method is described in graphic detail along with the reasons for each step.

Of the 2,250,000 deaths per year in the U.S., only 31,000 are listed as suicides.<sup>2</sup> This represents only 1.4%, and the overwhelming majority of these represent persons with psychiatric illness. Except for Dr. Kevorkian's clients, we cannot detect how many of the deaths were due to PAS, but there are undoubtedly some concealed in there.

Public opinion does support legalizing PAS at least to the extent that Oregon's Death With Dignity Act of 1994 was passed by a 51% majority. It has not been implemented due to court challenges which ended on October 15, 1997, when the Supreme Court rejected the challenge clearing the way for the law to take effect. The issue is again on the ballot as a referendum to repeal. Surveys of the public and physicians in Michigan have also shown at least moderate support for legalization.<sup>3</sup> By combining those responding as definitely and probably favorable, 54% of physicians and 67% of the public responded positively to a plan for legalization similar to the Oregon law which was being considered by the Michigan legislature in 1994.

Michigan law prior to 1992 contained no specific prohibition of assisted suicide. The legislature passed a temporary prohibiting law on December 3, 1992 which became effective on March 30, 1993 and expired on November 26, 1994. This was prompted largely by Dr. Kevorkian's early activities. A blue ribbon commission was formed as part of the law to make recommendations for a permanent law, but it reached no practical conclusion. Since the expiration of the temporary law, prosecutors have relied on common law and homicide statutes, but with little effect. The temporary law provided for a four year felony conviction, but juries would not convict Dr. Jack. In 1993 the Michigan State Medical Society took a neutral stand on PAS at the time that the matter was being studied by the blue ribbon commission.<sup>4</sup> In May 1997 the MSMS revisited the issue and after intense debate voted to oppose PAS. The

MSMS is now in agreement with the AMA, which has the position that "the taking of life is antithetical to the physician's role as a healer."

Those of us living in Michigan need no introduction to the name, Jack Kevorkian.<sup>5</sup> In fact he is well known throughout the U.S. and even in Europe. He was born in Pontiac, Michigan, the son of Armenian immigrants. He graduated from the University of Michigan Medical School in 1952, and took a residency in Pathology. During his training he published an article entitled, "The Fundus Oculi and the Determination of Death." This was based on research he performed involving photography of the eyes of dying patients. Due to these activities he earned the nickname of "Dr. Death" as early as 1956. In 1958 he presented a paper at a meeting in Washington, DC, advocating medical experimentation on consenting convicts during executions. Embarrassed, University of Michigan officials asked him to leave his residency. He next surfaced in the literature in *The American Journal of Clinical Pathology* where he detailed his experiments on transfusing blood from cadavers to live patients. In 1970 he became the chief pathologist at Saratoga Hospital in Detroit. Later that year he quit pathology, travelled to California and invested his life savings in the production and direction of a movie based on Handel's "Messiah." With no distributor, the movie flopped.

Kevorkian first showed his interest in euthanasia and ethics by publishing numerous articles in the obscure German journal, *Medicine and Law*, including one entitled "The Last Fearsome Taboo: Medical Aspects of Planned Death" in 1988. In it he proposed a system of planned deaths in suicide clinics, including his former theme of medical experimentation on patients. In 1987 he actually advertised in Detroit papers as a "physician consultant" for "death counseling."

The more notorious portion of his career began in 1989 with the building of his "suicide machine" in his kitchen in Royal Oak using \$30 worth of scrap parts. On June 4, 1990 he first used this machine in the assisted suicide of Janet Adkins, a 54 year old Portland, Oregon, woman with Alzheimer's Disease. He carried it out in his 1968 VW van in Groveland Parks near Holly, Michigan. There was rapid response of the legal community resulting in an injunction by Oakland County Circuit Judge Alice Gilbert prohibiting his participation in any suicides.

This injunction, which still stands was never enforced. An attempt to prosecute Dr. Jack in the death of Atkins resulted in a dismissal of the murder charge on December 12, 1990, by District Court Judge Gerald McNally. Subsequent attempts at prosecution have likewise failed, and Dr. Kevorkian has continued to assist suicides.

One penalty he has paid for his activities has been the loss of his medical licenses with the Michigan Board of Medicine summarily suspending him on November 20, 1991, and a California law judge suspending him on April 27, 1993. Since he is retired from active practice, the suspensions only impact his PAS activities. He can no longer access drugs and medical supplies and thus has switched from an intravenous drug technique to inhaled carbon monoxide.

Here are some interesting facts about Dr. Jack's assisted suicides. One third were Michigan residents, thus the majority came from some distance to seek out his services. One third were cancer patients and another third had neurodegenerative diseases. Two had no documentable disease. Perhaps as many as 12 were terminally ill whereas the rest were chronically ill but not likely to die very soon. All his suicides experienced social isolation, conflicted relationship with caregivers, and difficult "existential journeys." Only three were under hospice care. In the same time period, Hospice of Michigan cared for 30,000 patients and only 3 of their patients sought out Dr. Jack.

Within the last year several Supreme Court decisions have come down which establish the Court's approach. The decisions in June 1997 ruling, that both the New York and Washington laws banning PAS are constitutional, seem to be in conflict with the more recent ruling on October 15 that the Oregon law permitting PAS is constitutional. Thus it would appear that the matter is up to the individual states. The arguments against the New York and Washington laws involved the liberty interest protected by the 14th Amendment's Due Process Clause and a right under the Equal Protection Clause, an argument which equates the right to refuse treatment with a right to assisted suicide. It seems the debate will go on and further referenda will appear on the ballot, or state legislatures will be courageous enough to deal with the subject.

Some additional details about the Oregon law point out its problems and weaknesses.<sup>6</sup> It requires a physician to

certify that a patient has less than six months to live, a difficult task at best, but in this setting one that becomes mute after the patient dies of PAS. It allows for only a prescription for oral medication; no psychiatric evaluation is required; no reporting to the state is required, and there is no enforceable state residency requirement. If the oral medication fails for any number of reasons, there is no backup provision to complete the suicide. The positive side of this law is that before it has had a chance to go into effect, it has started an AMA focus on end-of-life issues such as palliation and competent compassionate care.

Other parts of the world with cultures similar to ours have experience in PAS. The Northern Territories of Australia have a "Rights of the Terminally Ill" law passed in 1995.<sup>7</sup> It is similar to the Oregon law except that it requires the physician to be present and actively involved, even administering the lethal substance. Also a second opinion from a physician trained to treat depression is required. The term terminal illness is likewise used, but not defined as to how long the patient has to live. This law may be overturned by a national statute outlawing PAS.

Holland has a rather long experience with PAS of about 20 years, which really is more accurately characterized as active euthanasia.<sup>8</sup> The law does not permit it, but it is practiced under prosecutorial discretion under the theory (force majeure) that a law can be ignored when there is no other option in dealing with a problem. The legal system has thus produced guidelines permitting PAD when requested by the patient or patient's representative. Studies have shown, however, a trend toward involuntary euthanasia especially of those with terminal malignancies. Apparently a physician can merely decide to end the patient's suffering without consultation with anyone, even a conscious and competent patient. In 1990, 11,840 people died from physician administered lethal overdoses. This is a very large number in relation to the population of Holland. Those with neurodegenerative diseases are not likely to have their lives ended this way, perhaps since a good state-financed care system exists and these patients are not perceived as suffering greatly. For the cancer patients PAD has displaced hospice in that there are only two programs with limited services in the whole country.

In one Canadian province, British Columbia, an exception is found to the

general rule that PAS is illegal.<sup>7</sup> In B.C. there are guidelines for prosecutorial discretion similar to but more restrictive than those in Holland. These were issued by the attorney general. At the opposite end of the country in Halifax a physician has been charged with first degree murder for giving a fatal potassium chloride injection. The trial, scheduled for the spring of 1998, sparked renewed public debate with public attitudes divided as in the U.S. Past court decisions have been by narrow margins of 4 to 3 and 5 to 4.

I would now like to explore the subject as it appears to me as a physician, namely what I characterize as the physician's dilemma. Many if not most physicians who treat dying patients have had requests for PAS. Many for the past century have written prescriptions knowing or suspecting that the patient has a potential to take an overdose of an otherwise legitimate medication. Some physicians guard against such prescribing when suspicious of the patient's motives. We already have a monitoring system in most states that makes it hazardous for a physician to prescribe the larger doses of narcotics required by patients with terminal pain who also require increasing doses due to addiction. Although this need for narcotics is widely recognized, only physicians who specialize in treating cancer patients are granted the benefit of doubt by the "narcotics police" in the state pharmacy department. Knowing this, family physicians and general internists who also logically have these terminal patients hesitate and tend to under-prescribe. This is the problem that the AMA educational effort will focus upon.

The state of Michigan is one of the few with no specific law outlawing PAS. This is a much safer situation for the legitimate practice of medicine since most anti-PAS laws can be used against a physician whose patient overdoses on needed pain medication. It is therefore preferable to have no law on PAS from physicians' standpoint, even for those physicians opposed to PAS. This explains the ambivalence that organized medicine has exhibited in the debate. We know from surveys that physicians are split on their desire to have a law legalizing PAS, since this puts pressure on those who don't want to do it.

Let's now examine the situation if PAS were legal, and the physician is willing to participate. By definition PAS involves only provision of the means of suicide and not the more active aspect of administration that

is defined as active euthanasia. When PAS is legal, the partially incapacitated patient poses a problem. Should the dose be brought to the bedside, perhaps taken out of the hard to open bottle, placed by the patient's head on the pillow, or directly into the patient's mouth with a swallow of water to wash it down? Would a helpful friend or relative be open to prosecution for such assistance? A law such as the Oregon law and one proposed in Michigan in 1994 only permit the physician to write the prescription. What if the dying is prolonged or the patient botches the attempt? It is evident that PAS in some instances begs the further physician involvement of PAD. If we then find it necessary to amend the law in this direction we find ourselves proceeding as the Dutch have in the past 20 years. Could we find legal means to control such a process? I contend that PAS does put us on the proverbial slippery slope which can go even further than the Dutch have. They have a social welfare system that effectively removes the economic motives for abuse. We have a healthcare system that could lead to this type of abuse, namely a "duty to die" for those no longer deemed useful in society and also too expensive.

In conclusion I feel we can agree that the medical profession must provide more skilled caregivers for the terminally ill and that medical insurances, including Medicaid and Medicare, need some revision to provide optimal comfort care. This need not be an overly expensive change in these programs. Medicare does provide for hospice coverage in the last six months of life no matter what diagnosis the patient carries. I have observed this in action in the case of a family member and was pleased with the outcome as were the other family members. We also need to recognize and treat depression more effectively. When all this is done, we are still left with the truly terminal patient who will die in the next few days, who may be in great pain, perhaps is having seizures, may be severely short of breath, or has become psychotic and uncontrollable. There is a legal and currently used but little known technique called terminal sedation for these patients. It consists of giving the patient sufficient intravenous drug sedation to control the symptoms and at the same time ceasing the administration of food and fluids. This will lead to a peaceful death in 72 hours or less,

***Please see "Suicide," page 34***

# Planet Aqua—What Wonder Water Works

by Charles B. Reif

## About the Author

Charles Reif was born in Washington, D.C. and moved to Minneapolis while still a child. He was educated at the University of Minnesota, obtaining a B.A., M.A. and Ph.D. while there. He moved to Wilkes-Barre, Pennsylvania in 1942, taking up a position teaching biology at Wilkes College. He retired as a professor in 1982. He wrote forty papers in the field of limnology and was active in civic and professional affairs.

Presented in May 1996 to the Wyoming Valley, Pennsylvania Torch Club.

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Of the four inner planets of our solar system, Earth (with a capital E) is the only planet with relatively pure diprotium oxide in great quantity. More commonly known by its chemical formula,  $H_2O$ , diprotium Oxide appears in three physical states: as a gas or water vapor which is usually expressed in terms of humidity, as a liquid usually expressed as water, and as a solid usually expressed as rime, snow, or ice. Since water is the most commonly observed form, the word Aqua is used in the title of this paper. In whatever form it appears,  $H_2O$  is the *sine qua non* of Planet Aqua.

Most importantly, among the physical manifestations of  $H_2O$ , water reaches its maximum density above its freezing point at 39.2 Fahrenheit or 4.0 degrees Centigrade. That is, water is heaviest a few degrees *above* its freezing point.

Incidentally, the appellation Planet Aqua was never formally accepted by the League of Nations, and, has not as yet, been proposed for serious consideration by the United Nations. However, as an aquatic biologist I favor Planet Aqua.

Furthermore, Planet Aqua has an atmosphere which is roughly four fifths nitrogen, an inert gas, almost twenty percent oxygen (as  $O_2$ ), some inert gases and various amounts of  $H_2O$  in its gaseous form. The atmosphere also contains enough carbon dioxide to sustain life. The role of  $H_2O$  in living systems, of course, is dependent upon the appearance of diprotium oxide as a liquid. The composition of the atmosphere as just stated has possibly been such for about a billion years or so, in order for life to be

present on Planet Aqua, as it has been.

However, for the purposes of this paper we need not at this point, but later, consider some of the events which did make life appear on Planet Aqua. Suffice it to say here, that diprotium oxide, acting variously in its three physical forms, does accomplish many physical and biological wonders. So let us now turn to a consideration of those wonders.

The changes undergone by water, in its three states of being, must be here reviewed since those changes are fundamental to an understanding of what wonders water works. Melting is the change from a solid form to a liquid form. That change requires energy. Changing from a liquid form to a gaseous form is called evaporation, and it also requires energy. Changing from a solid form to a gaseous form is sublimation. I'm sure you all have noticed how ice cubes, in a tray in a frost-free refrigerator, tend to become smaller.

All of these changes among the physical states of water involve either the formation or breakage of *unique physical bonds* between individual water molecules. Water molecules exhibit a peculiarly uneven shape. Their two hydrogen atoms (to wit the diprotium name) are skewed to one side of the oxygen molecule. The upshot is that one side of a water molecule has more positive charge on it than the other side. So each molecule of water behaves like a tiny magnet and attracts its diprotium oxide neighbors. The resulting hydrogen-bonded network gives water its many peculiar properties, for example, its high surface tension which supports aquatic shore bugs such as water striders (Gerridae). But most important, hydrogen bonds give water its unusually high latent heats of evaporation and freezing. Changes of states among ice, liquid, and gas for the substance diprotium oxide, require the gain or loss of extra amounts of "hidden" energy as hydrogen bonds between water molecules are rearranged and broken. Indeed, life on Earth depends on hydrogen bonds. It is the modest hydrogen bonds which holds together the double strands of DNA in chromosomes!

Those changes undergone by diprotium oxide result in what is known as

the hydrologic cycle, on a global scale. Water evaporates from oceans, lakes, and streams, and is transported in the atmosphere in a gaseous form. Condensation of that gas to a liquid or solid states frees the water to return, sooner or later, to the oceans. A relatively small portion of that precipitation falls on land, about one eighth of the total. What does fall on land, in one way or another, thanks to the force of gravity, returns to the oceans. Some of the returning liquid finds its way into spaces within the rocky formation which stand above sea level. As ground water, the liquid picks up a variety of chemicals in solution which in turn may result in some of the wonders water works. Some of the dissolved material mixes with sea water. And here is the place to mention that within each gallon of sea water, mostly in extremely small amounts, are representations of each of the known chemical elements on Planet Aqua.

One of the very, very important physical aspects of diprotium oxide, shared, I believe only with antimony, is the fact that in changing from a liquid to a solid form water expands and the resulting solid form, ice, is lighter than the liquid form. It that were not so this might be Planet Ice, and life would not have come into being.

This may be the right point to mention that despite the antifreeze aspects of the ocean's saltiness, sea water does solidify to form sea ice. Sea ice, with all the dissolved chemicals, is heavier than freshwater ice. Thus when sea ice is carried into estuaries where freshwater is just returning to the oceans, the sea ice sinks. On the other hand, when freshwater ice is carried out to sea, it floats. When the ice on Harveys Lake is about to break up, without too much windiness, the chemicals which have fallen on the surface of the ice during the winter, cause the ice to form vertical rods of ice which then fall apart and later melt. In ice masses such as cover the Arctic Ocean, where the ice is jumbled, the highest ice loses its salt content and when melted is potable.

Of the one eighth of the total precipitation of water that does fall on land, some of it sinks into the ground. A number of factors determine how much water enters into the lithosphere. The nature of the

ground material determines that. Between the grains of sand, varying according to the kind of sand, water finds much interstitial space. Newly formed rock may have few spaces. Older rock generally has cracks into which water can seep. Geological formations with lots of space for water to be are called aquifers. The chemistry of the ground water depends on what soluble materials are in the rock. Thus some ground water may be so rich in some kind of dissolved stuff that it is economically important. Some ground water is not fit to drink. Some may be corrosive. Certain regions have hot springs which are of economic importance. When the geographic stratigraphy is right, ground water issues forth as a spring, but spring water may not be, ipso facto, potable. Some ground water travels a great distance before forming a flowing spring. Glen Summit water probably starts as rain in the Catskill Mountains and moves through the Catskill beds to be pumped out at Glen Summit. An important aquifer under the great plains of the United States is several thousand miles in extent. It is being tapped along its length and may not be able to supply its most southern users.

The level at which the ground water is present in the planet's lithosphere, below the surface of the ground, is termed the water table. Wells must necessarily be sunk well below the water into the aquifer to be of any use. Under cities which depend largely upon ground water, the water table is markedly depressed. Water is being pumped out of the wells faster than the ground water can move back in to maintain a level water table under the city.

I would be remiss were I not to mention the very important function of wetlands in slowing the movement of rain water back to the oceans. Aquifers perform somewhat the same function but are not as apparent.

The distribution of precipitation of rain or snow or sleet or hail, worldwide, is not uniform. The rotation of Planet Aqua which determines the circulations of the hydrosphere and the atmosphere is the prime factor in setting into motion the weather patterns. Precipitation thus varies seasonally as well as geographically. Moist air, carried against mountains is cooled and tends to drop its water vapor in the form of rain or snow. The lee side of a mountain thus is relatively arid. Because of the easterly rotation of the planet the weather patterns move from west to east. The greatest insolation is received between the Tropic of Cancer and the Tropic of Capricorn as the thermal atmospheric patterns in the two

hemispheres, north and south, move toward the poles. The clash between warm moist air and cold dry air, in connection with the altitudinal factor, thus determines major patterns of precipitation. Lunar and solar variations also influence the wonders water works.

About a million years ago the Gulf Stream found its way to the Geographic North Pole and thus the Arctic Ocean was open. Since stratospheric winds tend to converge at the poles, and there descend to move south, they set the pattern for precipitation on the North American continent at three centers, on Labrador, the Canadian Shield west of Hudson's Bay, and in the Canadian Rockies. A general thermal cooling of the planet resulted in that precipitation's being in the form of snow. More snow fell annually than melted and thus accumulated to a depth of several miles. Ice, like cold molasses, tends to spread out slowly. It actually moves in turbulent flow. As a glacier flows from its center it passes over rock outcrops and plucks chunks of those outcrops which are moved into the mass of the ice and there ground against other rocks. The result is smaller and smaller rounded rocks such as boulders, cobblestones, pebbles and sand. Climatic thermal changes cause the glaciers to melt, (retreat), or advance. The ice which moved into what became northeastern Pennsylvania came from Labrador, after plucking rocks across the future New England and New York States. In its advance the ice scooped out depressions which, as the ice melted, filled with water and became more than one hundred natural lakes, of which Harveys Lake is the biggest, by volume. It also left behind sand banks, eskers, and rounded hills which are different in appearance from the sharp-ridged hills in areas where the ice was absent. The sharp ridges were formed by millennia of rain and snow. The rounded hills were smoothed by the glacial ice. Both kinds of hills are thus among the wonders water works.

Synchronously with the accumulation of the Pleistocene ice on the glacial centers, was a lowering of the ocean levels as diprotium oxide left the oceans as water and remained on land as ice. During the greatest accumulation of ice the oceans were about three hundred feet lower than they are now. This enabled the streams flowing off continents to deeply erode their terminal seaward valleys. Thus the bays along the east coast of the United States now have deep water. And the water which was entering the lowered ocean was colder,

heavier, and hugged the bottom to erode, on the ocean bottom, trenches which extend across the continental shelf into the abyss.

Sand is generally being carried downstream and in part deposited in the estuaries of the transporting streams. Some of the sand reaches the coast to form the popular recreational beaches along both the east and west coasts of the United States. Powered by wave action, the beach sand is generally moving toward the south. In many places groins have been built in the hope that beach erosion will be retarded. However, some of the sand moves along until it comes to one of the canyons mentioned above and down the sand goes into the abyss.

During the middle of the Pleistocene Epoch, the main body of the glacier weighed enough to depress the crust of the planet. Since the melting of the ice the depressed areas have been rebounding. Evidence for this rebound has been gained through the study of recent stratal tipping and by the changing drainage patterns. Lake basins have also changed in response to the rebounding.

Glacial conditions still prevail on Greenland and Antarctica, the central lithospheric areas of which are now below sea level. Trapped in the ice of Greenland and Antarctica, stratigraphically, is evidence of atmospheric changes during the last twenty-five thousand years.

A unique geological phenomenon is the Buried Valley of the Susquehanna which lies beneath the level floor of the Wyoming Valley. The Buried Valley was formed toward the end of the Pleistocene Epoch by running water which flowed beneath the glacial ice which had been trapped within the preglacially existing Wyoming Valley. The Buried Valley is a story in its itself.

Alpine glaciers prevail in some mountains but many have been retreating during the last fifty years or so. The Sun Glacier in Glacier Park, which I explored in August of 1929, has long been gone. Louis Agassiz was the first to demonstrate that the glaciers of the Alps were indeed in motion. Such glaciers move more rapidly in the center than they do along the edges. If two alpine glaciers flow in juxtaposition a medial moraine forms between them. At the region of furthest advance the ice piles up rock debris in the form of a terminal moraine. The flowing of glaciers has produced some humor. Mark Twain wrote about a farmer who decided to move his belongings onto a glacier to get a free ride down the mountain. And one of the Park Service guides in New York City's Central Park, having explained to

the tourists that the boulders in the park had been brought down from the far north by glaciers, was asked where the glacier was. His reply was, "It has gone back for some more boulders."

On the relatively steep higher slopes of mountains, snow may accumulate and form small alpine glaciers. If the slope be relatively steep and the ground be somewhat of loose material, the leading edge of the small glacier digs in and forms a depression on the mountainside. If the temperature rises over a period of time the ice melts and a small body of water remains. Such small alpine ponds are called tarns. The water in such tarns is closer to being "pure" than is water in any other natural aqueous formation. Tarns are possibly the least biologically productive of all kinds of bodies of water.

Something that we can see the better, since the TV meteorologist can show global air masses, with the masses' different kinds of weather, is that the atmosphere is indeed in motion all the time. A primary factor of atmospheric motion is the rotation of the planet itself. A secondary factor, also primarily due to the planets rotation, is the pattern of ocean currents. The Guld Stream in the western North Atlantic and the Japan Current in the western Pacific move water from the equatorial regions toward the north. Cold water from the polar regions sinks to the bottoms of the oceans and moves equatorially very, very slowly, thus the oceanic water is constantly in circulation. The surface currents also perform an essential thermal function in that they keep the tropics from becoming too warm.

Another oceanic phenomenon, which, if it hits the right coast, can cause great damage. A tsunami or tidal wave is caused by a geological disturbance on the bottom of the ocean. As such a wave travels across an ocean its crest may be only a few feet high. But its length or period is usually so long that the water along a coast where it strikes may appear to be receding. The receding takes many minutes. Then as the crest comes in as a big roller, the wave may crash hundreds of feet inland. To a keen observer on a ship at sea a tidal wave is not detectable.

Lake Erie occasionally experiences a seiche when a strong wind from the west pushes the water toward the eastern end of the lake. The water level at the eastern end may be five or six feet deeper than usual, while the water level at the western end of the lake may be an equal amount lower. The piled up water at the eastern end then seeks equilibrium so that as the eastern end goes

down the western end goes up. Such an oscillation may continue for a week or more.

This is a good place to mention the effect of hurricanes, known as typhoons in the North Pacific and williwills in Australian waters. Those major storms are part of the thermal regulation. But let us focus on the thunderstorms which, as associated with hurricanes, and the other local thunderstorms, build up when the adiabatic rate of a air mass is propitious. The amount of electricity in one thunderstorm is tremendous. And at someplace on Planet Aqua not a second goes by but what a lightning flash occurs. The static bloopers which we used to hear on radios in the good old days were due to some, to me not understandable, electrical phenomena.

And now we come to one, or more events which may have involved thunderstorms in the dim and distant past, more than a billion years ago. Theorists whose research is in that field, suggest that it was the energy in flashes of lightning which enabled nitrogen, oxygen, and carbon to become associated in what became living organic chemicals. From those living organic chemicals evolved cells, with nuclei, and DNA, and life was on its way. Biologists now postulate, or recognize five or six kingdoms. Whether these different kingdoms are the results of one phylogeny, or whether they represent individual family trees, I do not know. My point in this paper is, that had not all of the qualities of water been what they are, and had not Planet Aqua been an optimal distance from Sol, and had not Sol been the kind of star it is, this Torch Club meeting would not have come to be.

Some theorists now assert that it was the same lightning flashes, which received their power from the splitting of water molecules, that brought about molecular oxygen in sufficient amounts to sustain the organic molecules which the same power helped produce.

To go back to the action of water within the lithosphere, caves such as Mammoth Cave, have been made by subteranian running water. Limestone with its more soluble calcium carbonate is most susceptible to being modified to have caverns. A cave had first to be made by running water but when the source declined, the ground water, in dripping from the ceilings, ever so slowly, built up the stalactites and stalagmites. And related to them is travertine which precipitates from the calcium-rich waters flowing from hot springs.

Places such as Yellowstone National Park, Hot Springs in South Dakota, and Bath,

England, are famous for the thermal manifestations of water. Geysers require the subterranean conversion of ground water to steam, and an accumulation of water above the steam, to permit the building up of a head strong enough to accomplish a blow out. The steady movement of the ground water regulates the timing of such geysers. Some of the warm springs have a high sulphur content and supposedly are therapeutic. In some places the hot water is harnessed to produce electricity.

Another geological phenomenon which requires saturated ground, of relatively fine material, is solifluction. Mud slide is a less sophisticated name for the slipping of wet ground due to the pull of gravity. The mud is called slumgullion and in major cases slumgullion has blocked valleys to impound lakes. In a few instances such a dam has later been washed out by high water, with a flooded valley downstream as the outcome. Some disagreement exists as to whether the local famous Boulder Field is the result of glacial action or solifluction.

Drinking water has become an important commercial item. Collecting and supplying drinking water is a major industry. In the Wyoming-Lackawana Valley we should all be grateful to Colonel Watres who had the foresight to build the reservoirs along the streams which debouch into the Susquehanna within the valley. About a fifth of the planet's fresh water is held in the Great Lakes and all the other lakes of northern United States and Canada; another fifth is in Lake Baikal in Siberia. The Amazon system carries another fifth. The need for water as human overpopulation continues to become more critical has seen the development of desalination processes. Strangely, beneath the arid surface of the Sahara Desert is a good supply of untapped water. What the citizens of the Mongol Empire did for water I do not know. And I would be remiss if I did not mention the water-conserving adaptations which many terrestrial organisms have made to be able to live in arid habitats.

Let me mention one last manifestation of water. One hears the axiom that no two snow crystals are the same. I suppose that if the water which freezes within the cold clouds were absolutely pure all crystals might be similar. But, as I have implied before, absolutely pure water probably does not exist on Planet Aqua. Thus the minuscule amount of this chemical or that chemical in some way influences what kind of a snow crystal forms when the water solidifies. What I do know is that with a microscope, set up out of doors with the temperature below freezing, while

snow is falling, one can catch snowflakes on a glass slide and view them thus greatly magnified. Specialists in that field claim they can recognize the source of the water which is forming the snowflakes. I know that I have delighted to see the snowflakes as magnified one hundred diameters but I do not have the kind of patience required for that kind of research.

The aquatic phenomenon with which I am fairly familiar from a personal experience is lake stratification, so well exemplified in Harveys Lake. Remember, water is densest

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**"Socialism," from page 20**

one out of thirty seats—in five different campaigns. That's a total of one victory in 85 tries, and even he won only because he was also nominated by the city's Republicans. Even in the worker strongholds of East and South Baltimore, the independent labor parties usually garnered only 10-20% of the vote. Hence, the socialists who sought the votes of Baltimore's workers in 1908 and 1912 were two decades too late. The city's workers by then had pragmatically rejected independent politics as impractical, but they did not become politically inactive. Simultaneously with their failures to elect their own candidates, they began to experience success in finding allies in the wider community on important issues. In shifting coalitions with businessmen, professionals, journalists, clergy, academics, reform-minded politicians, and liberal women, they lobbied the state legislature. They obtained a law protecting oyster dredgers, a law limiting the hours of the city's streetcar workers, and a law requiring reports of occupational diseases to the State Health Department. Eventually they obtained laws on child labor, shorter hours for women workers, and workmen's compensation, to name a few. They abandoned futile independent political campaigns in favor of lobbying activities as the most practical vehicle for achieving their goals. American

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**"Funding," from page 10**

community is receiving for the dollars invested in the not-for-profit agencies. It becomes much easier to inform the public what is being done with their dollars when there are numbers to report. It ceases to be "we do good things" and becomes "we helped so many people do this and so many people do that."

Another benefit of this funding procedure is the improved communications

at 39.2 degrees. When Harveys Lake has a foot of ice covering it, the water at the bottom of the lake, being at about 36 degrees, is lighter than water at 39.2 degrees. When the ice melts and the surface water warms to 39.2 degrees the surface water is heavier than the bottom water and, possibly being blown to one side of the lake, slides down under the lighter water near the bottom. Such a mixing is the spring turnover and water throughout the lake is well oxygenated. During the summer the bottom water warms up to 40 degrees or so.

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workers did not want, as Charles A. Beard put it, to "ride a dead horse." Independent politics had yielded little while lobbying had brought significant incremental gains. In abandoning the one for the other, Baltimore's workers acted pragmatically as Americans had traditionally acted. Here we see that pragmatism is closely related to another American value. As Seymour Martin Lipset has noted, Americans have an achievement, or "success" standard for measuring personal worth. They have the same standard for measuring the worth of their political activities.

In seeking the reasons for the absence of a viable socialist party in the United States, we have looked at fourteen aspects of our political system, our economic life, our ethnic mix, and our value system. There are more, but I have covered the most important. I will list those fourteen again in summary:

- winner-take-all elections;
- the federal system;
- co-option of radical proposals by the major parties;
- geographical mobility of workers;
- early possession of the right to vote before the industrial revolution began;
- the higher standard of living of American capitalism;
- occupational mobility of native-born workers;
- intentions of many foreign-born workers

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between the funder and the requesting agency. Once there is data written down, then there is a place to start an insightful dialogue. The result is a better understanding of what the funder wants and is willing to fund, a better understanding of who the agency serves and what it wants to achieve. This better communication can improve the level of trust and confidence between funder and receiving agency.

At a time when donors are disenchanted by scandal, rumors and misunderstandings,

In the fall when the surface water cools and becomes heavier than the deeper water, the fall overturn occurs and all the water is again oxygenated. Harveys Lake thus has sufficient oxygen throughout the year to support lake trout. Lake Winola, which is not as deep, turns over twice each year but cannot store enough and so cannot support lake trout in the summer.

In conclusion, may I suggest that if cognizant beings do come to Planet Earth they will do so in their search for diprotium oxide.

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- to return to the old country;
  - ethnic diversity in the labor force;
  - American individualism;
  - American equalitarianism;
  - mistrust of government; and
  - American pragmatism.

Which were the most *important* factors? Frankly, I cannot say. Eric Foner, after considering almost as many factors as those I have briefly summarized, noted that each of the proposed explanations for the absence of socialism in the United States had a degree of merit. He contended, however, that "we [cannot] simply add them all together in a kind of mixed salad and feel satisfied with the result." Yet, the "mixed salad" is the only explanation which incorporates all the complexities and subtleties of American labor history. An intellectual mixed salad may not seem satisfying but it may, all the same, do the most justice to the evidence. No one factor is an explanation by itself, nor for that matter is any limited group of factors a total explanation. As Seymour Martin Lipset has said, "Even when looking at the history of American radicalism in a comparative context, it is impossible to determine which of the many factors has been the most important, how much each explains..."

History certainly is complicated, isn't it?

***For a copy of the sources used for this paper, write to the editor and enclose a prepaid return envelope.***

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it is critical that human service agencies present their achievements in the clearest, most comprehensible way. Only through improved accountability and clear communication can not-for-profit agencies win the public trust and continue toward their goal of improving the quality of life in our community.

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## "Radiation," from page 8

"one of the most common statements of the research community in discussing knowledge and interest in this important subject is 'I could lose my funding,' or 'my job'."

The dominance of the linear no threshold hypothesis thinking was evident in the conference held in Seville, Spain November 17-21, 1997. The meeting was convened to reconcile the widening gulf between predicted actual biological results and the stringent limits proposed for radiation protection. The conference was jointly organized by the International Atomic Energy Agency (IAEA), the World Health Organization (WHO), and the United Nations Scientific Committee on the Effects of Atomic Radiation. Keynote speakers at each of the ten sessions, all of whom support the linear no threshold hypothesis, were given one half hour or more. The "heretics" were largely silenced; they were limited to three minutes during questions from the floor or buried in the 200 contributed papers.

More and more knowledgeable scientist are now beginning to speak out. An organization called Radiation, Science, and Health has been formed to combat the dominant thinking on this subject. It is an international group of independent persons knowledgeable in the science and public policy of radiation health effects. Members include Nobel Laureate Rosalyn Yalow, Dr. Victor Bond, Theodore Rockwell and many of the "heretics" I have quoted in this paper. They are committed to change radiation science policy in the public interest. Their stated purpose is "to document scientific data; to advocate for objective review of low-

level radiation science policies. Responding to world-wide public concern: apply costs/benefits to policies and programs; and recommend needed research." They are preparing a report that collects all of the available data. The Health Physics Society and the American Nuclear Society have both issued statements that support the fact that the linear no threshold hypothesis is not valid.

The Advisory Committee on Waste reported to its sponsor, the Nuclear Regulatory Commission:

"We conclude that a reexamination of the regulatory model is appropriate. The first task is an impartial review of the data and their quality.

"The increasing emphasis placed by the NRC on risk-informed regulation makes it imperative that the actual health risk of low levels of ionizing radiation be assessed accurately. ...special...attention should include: (1) Assurance that the study includes scientists other than those who are 'recognized experts' with a reputation built on the linear no threshold (LNT) model: (2) An evaluation of the data by an entity with an expertise in statistics or information science but no prior position on LNT. ...(3) Consideration of all studies that relate to the LNT."

Jaworowski, a former chairman of UNSCEAR, wonders, in his Nukleonika article:

"What caused...UNSCEAR (to) need twelve years to prepare a report on hormesis...? Myths are hard to banish, and until recently hormesis was a scientific taboo. This was because it contradicts an assumption which is the basis for the current philosophy and policy of radiation

protection." He is referring to the LNT hypothesis in this last statement.

Is radiation hormesis real? The concept is now supported by a preponderance of the data. It has not been observed often because researchers were looking for an opposite effect and if they saw any evidence of it, they dismissed it as anomalous, much as we did in the early '50s. Some of the studies in the UNSCEAR report and in Luckey's book do not indicate beneficial response at low levels of radiation, but the overwhelming majority of them show either no effect or beneficial effects. Luckey claims that if you look hard enough you will find a hormetic effect. His book, *Radiation Hormesis*, CRC Press, Boca Raton, Florida 1991, is a critical review of the literature on this subject. He states that "Whole body exposures to low doses of ionizing radiation significantly increases major physiologic functions. These include growth and development, important parameters of reproduction, immune competence, resistance to cancer mortality, and increased life span."

The difficulty with many human studies is that it is hard to obtain sufficient data at these low levels to see any effect, and those that show positive effects are all statistical. In any event, it is now clear that the linear no threshold hypothesis does *not* hold at low levels of exposure to radiation. The reluctance of the UNSCEAR to come to this conclusion probably lies in the fact that the mechanism that produces positive effects are not well known. Cell studies are now being undertaken, and until they are completed and understood, it is doubtful that the more conservative experts will support the hormesis concept.

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## "Suicide," from page 29

but the physician has only treated severe symptoms and not directly caused the death. For the patient who is not in such an extreme state, but wishes to hasten his/her own death, the option of voluntary cessation of food and fluids is a possibility when combined with medical support in the form of good pain relief. This is in effect the way many patients die anyway.

Considering the Dutch experience and the obvious difficulties posed by a true PAS law, I have concluded that there is no practical way to legalize the assistance of suicide without moving on to active euthanasia. Since there is little if any public

or medical support for active euthanasia, I conclude that our best course is to expand hospice care and make the option of terminal sedation well known to both the public and the medical profession.

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- <sup>1</sup> Humphry, Derek. *Final Exit*. Dell Publishing, New York: 1996
- <sup>2</sup> Ibid, p.xv
- <sup>3</sup> Bachman, JA et al. Assisted suicide and euthanasia in Michigan. *N Engl J Med* 1994: 331:812-13
- <sup>4</sup> Barry, JL. What is the MSMS policy on assisted suicide? *Michigan Medicine* 1994: 93(7):80,79

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<sup>6</sup> Emanuel, EJ. Daniels, E. Oregon's physician-assisted suicide law. Provisions and problems. *Archives of Internal Medicine* 1996:156(8):825-9

<sup>7</sup> Phillips, P. Views of assisted suicide from several nations. *JAMA* 1997:278(12):969-70

<sup>8</sup> Van der Maas, PJ et al. Euthanasia, physician-assisted suicide, and other practices involving the end of life in the Netherlands, 1990-1995. *N Engl J Med* 1996:335(22):1699-1705

## "Alphabet," from page 13

Tours (SW of Paris) became the most renowned. These Alquin taught scribes to write in as fine a hand as possible. Then he set them to rewriting all Church literature and what remained of the works of Classical Greek and Roman writers. In the process the scribes developed a more fluid form of capitals and small letters, the "Caroline" alphabet, so named to honor Charlemagne ("Carolus Magnus" in Latin) (see chart). The Caroline alphabet became the official script of the Frankish Empire, and for centuries was the main literary style of Western Europe.

Two other notable national variations of the Roman alphabet were developed: Gothic and Italic. *Gothic*, a Germanic script that evolved from the Caroline alphabet, became a distinct style in the 12th Century, and is particularly important because the first printers modeled their types on it. It is heavy in appearance due to the extreme thickness of perpendicular letter strokes and the extreme thinness elsewhere (see chart). It became most popular in Germany, Holland and Belgium. The *Italic* form was developed in Italy four centuries later (16th) and quickly became popular throughout Europe. It is a slanted form of the Roman alphabet and is easier to write than the Classical Roman or Gothic "black letter" styles.

### Conclusion

The two main stages in formulating our alphabet were the devising of a consonantal alphabet by the Early Semites and the adding of vowels by the Greeks. The Romans refined and enhanced the letter forms and established the sequence.

During the Middle Ages monasteries of the Roman Church preserved the knowledge and use of the alphabet, added needed letters, and completed the development of the small letters.

Many writing systems have been developed—we know of nearly 200—of

which about 50 are in use today. Our Semetic-Greek-Roman alphabet is the most highly developed, the most convenient and the most adaptable writing system in existence. Given its flux in its formative years, it has survived with very little change for nearly 2,000 years, meeting the needs of diverse languages. Its outstanding feature is its simplicity, the *sine qua non* of universal literacy. Its simplicity derives from the use of a single letter to represent the vocal sound it designates, and from the small number of letters required.

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## "Cheers," from page 26

complete technophile. To conclude on a positive note, I'm willing to admit, until one of you convinces me otherwise, a positive benefit-cost ratio to the technologies of movable type (and the printing press), medical research, and the flush toilet (not necessarily in that order.) A recent national survey asked 1,000 people "What small convenience of the 20th century is most taken for granted?" Sixty-nine percent picked toilet paper. (The zipper came in second.) Those are technologies I can live with.

### Notes:

- <sup>1</sup> Karl Polanyi, "Our Obsolete Market Mentality," in George Dalton, ed., *Primitive, Archaic and Modern Economies: Essays of Karl Polanyi* (Garden City, NY: Doubleday) 1968, pp.59-77.
- <sup>2</sup> Jerry Mander, *Four Arguments for the Elimination of Television* (New York: William Morrow and Company, Inc.) 1978.
- <sup>3</sup> Bill Henderson, editor, *Minutes of the Lead Pencil Club*, (Wainscott, NY: Pushcart Press) 1996, p.183 (quotation attributed to the Associated Press).
- <sup>4</sup> Mary Pipher, *Another Country* (New York: Riverhead) 1999, pp.306-307.
- <sup>5</sup> Mander, op. cit., p.239.
- <sup>6</sup> Lily Henderson, in *Minutes of the Lead Pencil Club*, op. cit., p.15
- <sup>7</sup> Franklin Saige, "The Information Superhighway: Mega Buys," in *Minutes....*, op. cit., p.186.
- <sup>8</sup> Cited above
- <sup>9</sup> *Minutes....*, op. cit., p.117
- <sup>10</sup> From "Manifesto of the Lead Pencil Club," *Minutes....*, op. cit., p.233.
- <sup>11</sup> *Minutes...op. cit.*, p.83.
- <sup>12</sup> From Walden; quoted in *Minutes....*, op. cit., p.199.
- <sup>13</sup> *Minutes....*, op. cit., pp.149-150.
- <sup>14</sup> "Why I am not Going to Buy a Computer," in *Minutes....*, op. cit., 38.
- <sup>15</sup> Jerry Mander, *In the Absence of the Sacred* (San Francisco: Sierra Club Books) 1991, pp.49-50.

## "Immortality," from page 23

Do we want to be a dead end of evolution?

Do we want to be the selfish cancer of life on this earth?

Can we instead accept the unity of life and death as one precious gift to be treasured with thanks, not asking for more?

Our true immortality lies in the almost infinite consequences of our interactions

with other life and our planet. Evolution is a continuously active process. All living organisms are participants in this dance, are its co-creators. Our own living bodies carry within their cells the whole history of 3.85 billion years of life. Isn't that marvelous! Isn't that enough?

Years ago a pair of ice-age parents cared enough to raise a child. I am here today as a consequence of their caring. Maybe far in

the future parents will raise a child because in the distant past someone cared enough to preserve the soil, the air, the water, the plants and animals. By accepting the reality of our own individual deaths we may be able to direct our efforts towards preserving life in all its abundance on this blue-green dot of a planet in an uncaring universe. It is an awesome burden. It is a sacred responsibility.





*...In Support of Excellence*

Dear Torch Colleagues,

In recent letters to Torch members printed in this *Torch* magazine, I wrote of opportunity knocking and asked if you believed belonging to a Torch Club made a positive difference in your life. I suggested that if it has done that for you, you may wish to make a gift to the Torch Foundation in support of excellence in the IATC and your own Torch Club. I wrote of "giving back" and of "giving forward" so that the excellence of Torch may continue and be shared in future Torch Clubs with future members. I asked you to invest in Torch and listed various ways of "giving." This letter asks you to consider "giving in the future" by including Torch and the Torch Foundation in your estate planning.

After you have taken care of your family and other responsibilities, please consider Torch and the Torch Foundation for a part of what you leave behind. Consider joining those Torch members who already have remembered Torch in their Wills or other estate plan instruments. Consider Torch as one of your beneficiaries. Create a special legacy in your memory.

Bequests to the Torch Foundation can be made in any of various ways—all especially appreciated.

$n$  a dollar bequest—not just "a" dollar but a gift of any dollar amount you specify.

$n$  a percentage bequest—a gift, for example, of 5% or 10% or more of your estate or a portion thereof.

$n$  a contingency bequest—a gift of the residue of your estate after other bequests have been fulfilled.

Consult your attorney for these and other ways in which you can contribute in the future for the future of Torch

The topic of Estate Planning reminds me to remind you of gifts made "in memoriam" of deceased Torch members. Being remembered is important to everyone. Contributions honoring Torch members in this way are rewarding to the Foundation, to the IATC, to the donor and to the family and colleagues of the person being honored. In a forthcoming Torch Foundation letter, such contributions already received will be recognized.

To respond to current needs and to invest in the future of Torch, please make checks payable to Mr. Clarence A. Peterson, Treasurer of the Torch Foundation, and mail to 6160 Olentangy Blvd., Worthington, Ohio 43085. All contributions are tax deductible in accordance with IRS regulations.

Thank you,  
George P. Crepeau, President

## CALL TO ANNUAL BUSINESS MEETING & TORCH CONVENTION

The annual business meeting and convention of the membership of the International Association of Torch Clubs will be at the TravelLodge of Winchester, VA June 22-26, 2000.

### Schedule of Events

#### THURSDAY, JUNE 22ND

9:00 a.m. - 3:00 p.m. IATC, Board meeting

12:00 p.m. - 6:00 p.m. Registration

3:00 p.m. - 4:00 p.m. Officers Exchange (this is the first convention session for all attendees)

4:00 p.m. - 5:00 p.m. General Business Session I

6:00 p.m. - 7:00 p.m. Welcoming Dinner

8:00 p.m. - 10:00 p.m. Theater at Shenandoah University

#### FRIDAY, JUNE 23RD

8:00 - 9:00 a.m. Breakfast (on your own)

8:00 a.m. - 5:00 p.m. Registration

9:00 a.m. - 10:15 a.m. General Business Session II

10:15 a.m. - 10:30 a.m. Refreshment Break

10:30 a.m. - 11:45 a.m. Torch Paper I

11:45 a.m. - 12:15 p.m. Transportation to Winchester Golf Club

12:15 p.m. - 1:15 p.m. Lunch at the Winchester Golf Club

1:30 p.m. - 4:45 p.m. Tours in the Winchester Region

6:15 p.m. - 7:00 p.m. Reception and Cash Bar

7:15 p.m. - 10:00 p.m. Dinner and Torch Paper II

10:00 p.m. - 11:00 p.m. Social Time

#### SATURDAY, JUNE 24TH

8:00 - 8:30 a.m. Breakfast (on your own)

8:00 a.m. - 5:00 p.m. Registration

8:30 a.m. - 9:10 a.m. Meet the Editor

9:15 a.m. - 10:15 a.m. Membership Development

9:15 a.m. - 10:15 a.m. Torch Foundation Board Meeting

10:15 a.m. - 10:30 a.m. Refreshment Break

10:30 a.m. - 11:45 p.m. Torch Paper III

12:00 p.m. - 1:00 p.m. Lunch

1:15 p.m. - 4:45 p.m. Tours in the Winchester Region

6:45 p.m. - 7:30 p.m. Reception and Cash Bar

7:30 p.m. - 10:00 p.m. Annual Banquet. Torch International Awards. The Paxton Lecture

#### SUNDAY, JUNE 26TH

7:30 a.m. - 8:00 a.m. Interdenominational Service (optional)

8:00 a.m. - 8:45 a.m. Breakfast provided as part of convention

8:45 a.m. - 10:00 a.m. Torch Paper IV

10:00 a.m. - 11:00 a.m. Business Session III and Closing of Convention

11:15 a.m. - 1:30 a.m. Torch International Board meeting and luncheon

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## Reflection

*"Do not say, the people must  
be educated, when, after all,  
you only mean amused,  
refreshed, soothed, put into  
good spirits and good  
humour, or kept from vicious  
excesses."*

—John Henry Newman:  
*The Idea of a University,*  
Discourse VI

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