
Global 2000 revisited: the environmentalists' errors

Meteorologist Dr. Hugh W. Ellsaesser turns a critical eye on claims that man is progressively fouling his nest, and finds they don't stand up to scientific scrutiny.

*This article was adapted from a presentation to the World Affairs Council of Northern California at their March 1988 forum on "The Global Environment: Reassessing the Threat," in San Francisco. The author is Participating Guest Scientist, Atmospheric and Geophysical Sciences Division, at Lawrence Livermore National Laboratory.**

It was in the 1960s that I began to doubt the message of the environmentalists—that man was progressively fouling his nest. The large disparity between their claims and what I had come to accept from my own training and observations as a meteorologist led me to investigate many environmental issues in detail. In every case investigated I found a sharp dichotomy between the apparent "consensus view" (since the news media and the technical editors of the scientific journals tended to side with the environmentalists) and what could be logically and scientifically defended based on the information then available. And I have found that there have been a substantial number of well-informed and influential people who shared my appraisal.

If this seems implausible to you, may I suggest that you turn the objective and emotionless eye of the scientist on the consistency with which environmental issues are presented as *moral* issues—portraying the sins of mankind and three of his major creations: civilization, technology and the free-market free-enterprise capitalistic economic system. The environmentalists and the eco-tacticians of the Sixties and Seventies, in a thousand variations, "peddled the proposition that 'only man is vile' " (Richard Newhaus, 1971).

At least some of you can remember back in the late 1960s, just before the formation of the Environmental Protection

Agency and the adoption of the Clean Air Amendments of 1970, how we were bombarded with claims that air pollution was increasing *out of control*. The *Oakland Tribune* of Jan. 13, 1970 quoted the Chancellor of the University of California to the effect "smog is increasing 10 times as fast as the population of California." As late as Oct. 3, 1973, Sen. Edmund Muskie was still saying, "In 1970, it was clear that our efforts were failing. The air was getting dirtier rapidly. . . . Protection of public health could no longer be subservient to considerations of economic and technical feasibility, particularly when those factors were controlled by industry" (NAS/NRC, 1973, p. 10).

Please compare these statements with the then available data on airborne pollutants shown on **Figures 1 and 2**; the former is from Ludwig et al. (1970), who were then with the National Air Pollution Control Administration, the predecessor of EPA, and the latter from EPA (1974) itself. An even more dramatic picture of the steady and long-term decline in man's polluting of the air is indicated by Auliciens and Burton's (1973) graph of average winter smoke levels at Kew Observatory in London since the 1920s, shown in **Figure 3**. Do these graphs suggest to you that the quoted statements by our leaders were based on something other than sound information? How could they have gotten away with such statements before a free and unbiased press? In my opinion, the answer is that the press was not unbiased—if anything, they were among those egging the environmentalists on.

Health effects of pollution

The same disparity appears if one looks closely at the health effects of air pollution. Tabershaw et al. (1968) stated:

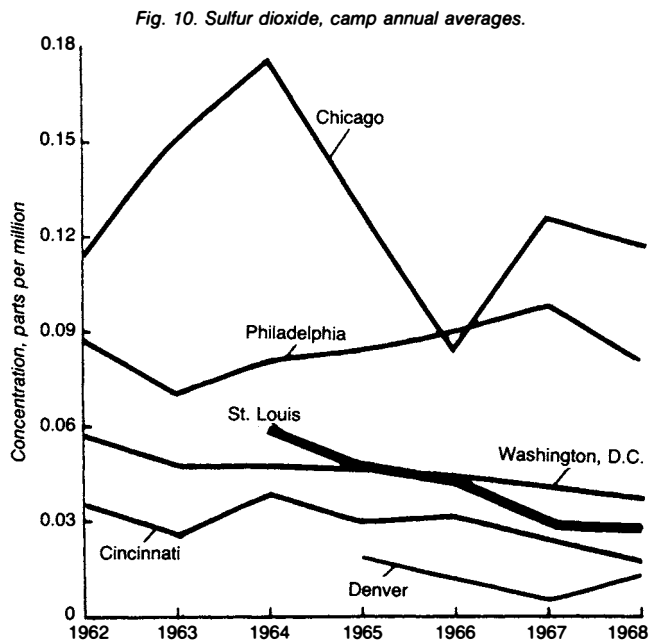
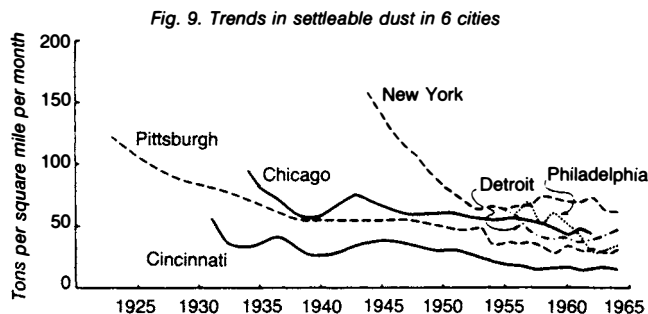
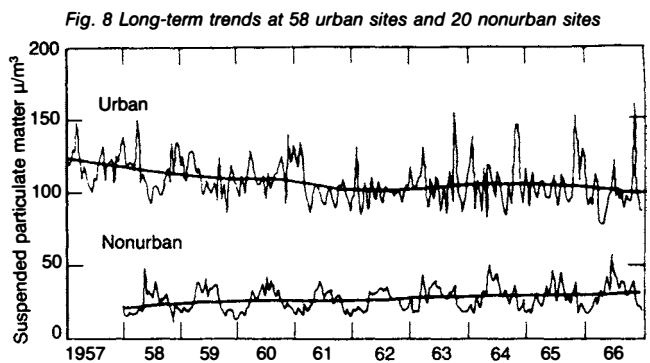
“The fact that millions of Los Angelinos have been exposed for years to above-threshold limits of oxidant without any serious health effects raises doubt that we are correctly as-

sessing the toxicity of this pollutant in humans as it exists in smog.” Los Angeles still exceeds the National Air Quality Standard nearly 200 days a year, a standard purportedly established on the basis of health effects. And yet, even today, we have no evidence that residents of Los Angeles are showing symptoms of any health effects resulting from this exposure. And in Los Angeles, the ozone standard is not merely exceeded—it is frequently exceeded two- to threefold.

The health effects of sulfur dioxide, smoke, and dust particles were deduced primarily from the so-called Air Pollution Episodes, the most famous of which was the London “Killer Smog” of Dec. 5-9, 1952, which is presumed to have been responsible for about 4,000 “excess” deaths. During this period of anticyclonic calm and dense fog, the temperature hovered just below freezing, but not enough below to freeze out the dense water-drop fog. This fog was so dense and pervasive that a Covent Garden ballet performance was canceled because the stage could not be seen from the first balcony in the (then-unheated) opera house. And on the Isle of Dogs, near the River Thames, pedestrians said at times they “could not see their feet.”

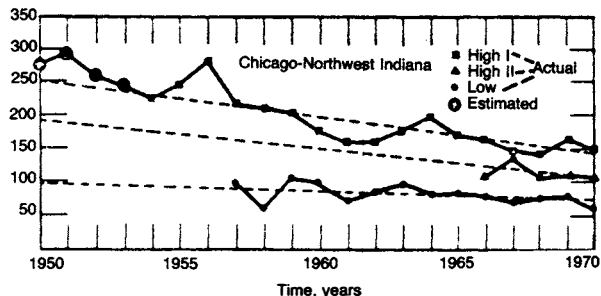
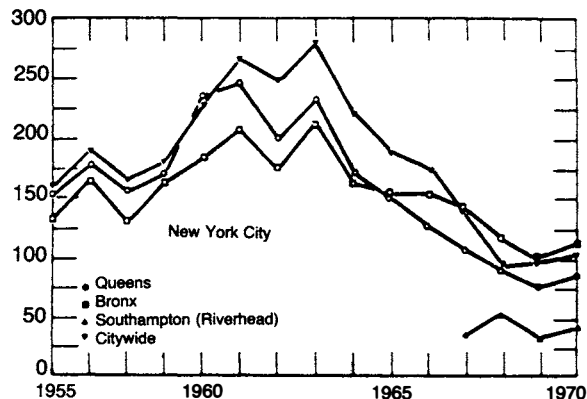
Figure 4 from Wilkins (1954a and b) is the paradigm of the relationship of air pollution and human health which the reporting of this episode has left in the mind of everyone.

FIGURE 1
Trends in particulates, settleable dust, and sulfur dioxide in selected U.S. cities



The charts above, labeled Figures 8, 9, and 10, are taken from Ludwig et al. (1970), and is based on air quality data available at the time.

FIGURE 2
Trends in airborne particulate matter and sulfur dioxide prepared by EPA (1974)



Note that the concentrations of sulfur dioxide, averaged over the London area, only reached 0.7 parts per million (ppm) and the filterable particles or smoke 1.6 milligrams per cubic meter. The experts of that time had adopted 10 ppm as the maximum permissible level of sulfur dioxide considered safe for long-term exposure. **Figure 5** from the report of the committee which investigated the fog (Ministry of Health, 1954), compares weekly mortality in Greater London (population approximately twice that of London Administrative County) in 1952-53 with that in the corresponding period of the previous winter and that of the other large cities of Great Britain. The differences between the lower two curves defines the so-called "excess deaths." The 4,000 under the first sharp peak have been generally attributed to air pollution; the 8,000 under the second, lower but broader peak, are usually, as here, attributed to an epidemic of influenza.

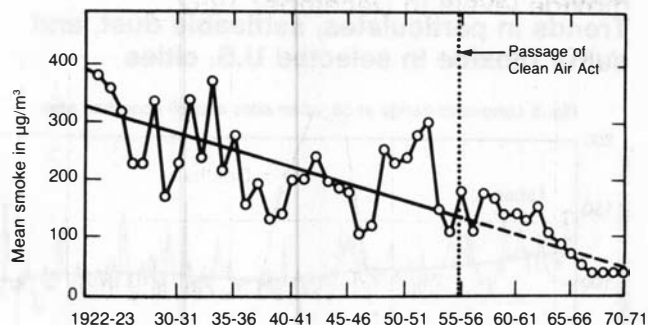
The lower panel of Figure 5 compares mean weekly tem-



The politics of "environmentalism": There are powerful forces in the world who view industrial civilization as an enemy, and who use the ploy of warning of an impending hazard to seek the authority to control people, the budget, or the social agenda. Above, a 1981 Washington, D.C. demonstration against nuclear power. The evident anti-American lunacy of the protestors has not stopped their policy from winning virtual hegemony in actual practice!

FIGURE 3

Average smoke levels at Kew Observatory during October-March 1922/23-1970/71



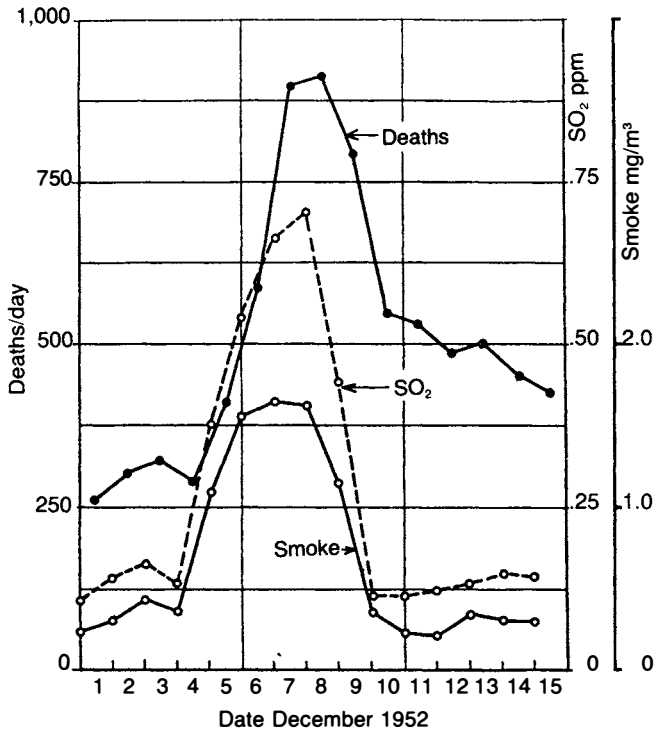
peratures of 1952-53 with those of the previous winter. Note that in 1953 the temperature dropped below the 1951 "normal" value in early November and reached its lowest value for the year in the first week of December, rather than in late January, as in the previous "normal" winter. November 1952 was up to 12°F colder than November 1951, and this in a city where the normal range in monthly means is between 39.7°F in January and 62.7°F in July, i.e. 23°F. Note also that mortality in both London and the other cities of Great Britain had begun to rise before the fog—this was reported to be a result of the November cold.

Figure 6 shows weekly mortality for London Administrative County for 1959 (solid curve) compared to a normal derived from the 1954-58 data (dotted curve). To this I have added plus-signs indicating the variation of the mean monthly temperatures averaged over 80 years scaled to approximately the same range as the normal mortality curve. I draw your attention to the normal annual cycle in mortality, from about 650 per week in late summer to about 1,050 at the end of January, and the degree to which this is inverse to the mean temperature curve, i.e., mortality is high when temperatures are low and *vice versa*. Note also the large peak in mortality in February 1959 which the County Medical Officer labeled "Cold" and "Influenza." These values are running five-week averages; for the week ending Feb. 21, 1959, the figure was 1,815 deaths—just off the top of this graph or nearly twice the normal of about 1,000 for this week of the normal year.

Figure 7 is a similar comparison of weekly mortality in 1957 compared to normal. Here we see mortality was well below normal in the early part of the year—labeled "Mild Weather" and above normal for the rest of the year with the two superimposed peaks—labeled "Influenza" and "Fog." Bear in mind that in London, fog generally means cold as well. The yearly mean temperature for 1957 averages 1.8°F

FIGURE 4

Daily London Administrative County (AC) deaths compared with smoke and sulfur dioxide levels in December 1952



above normal; the anomalies for January, February, and March were +3.0 to +6.8°F and for November and December, they were +0.9 and +0.7°F, i.e., still above normal but cold relative to the rest of the year.

Now that you have some appreciation for the way London mortality tracks temperature and how it is distorted by influenza epidemics, examine **Figure 8**, which is a graph of departures of mean daily temperatures from normal from Scott (1953) to which I have appended the daily mortality curve from Figure 4. Note that daily deaths were rising during the latter half of November when daily mean temperatures remained 2 to 10°F below normal and began rising sharply on Dec. 5 when the temperature dropped to 12°F below normal and then continued rising as the temperature remained almost constant on Dec. 6 and 7. As temperatures rose slightly on Dec. 8, deaths reached a peak and as temperature continued rising to the seasonal norm on Dec. 9-11, deaths dropped back to a new level about twice that of November. Now examine **Figure 9**, which is a repeat of Figure 6 to which I have added crosses giving the five-week running average of deaths per week in Greater London taken from Figure 5 (the

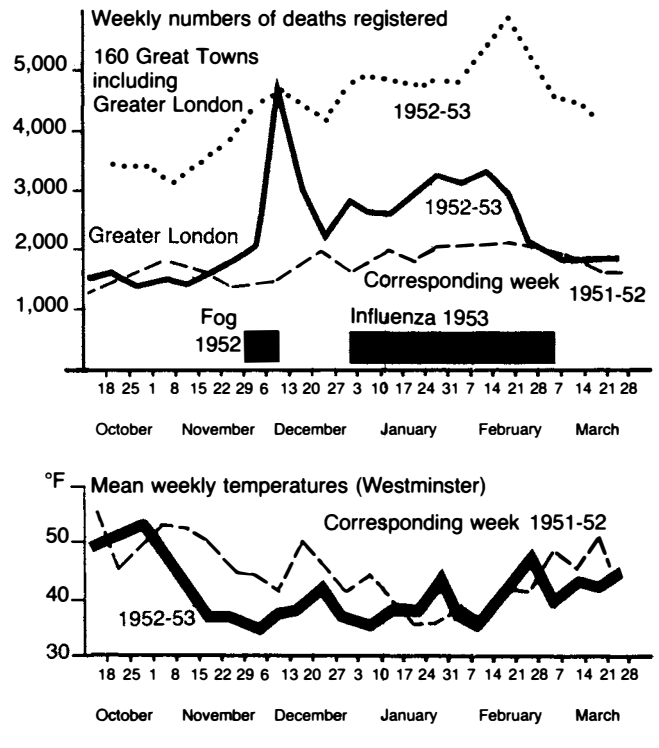
numbers were divided by 2 to make them comparable to the death rates for London Administrative County). Other than having two winter peaks, separated here because of the calendar-year scale, the results look very much like the results presented by the County Medical Officer for 1959 on the original figure.

In attempting to decide whether the London mortality peak of early December 1952 was due to air pollution or to an exaggerated normal winter peak of mortality brought on by the coincidence of cold weather and an influenza epidemic, the following should be kept in mind:

- 1) Between 80 and 90% of the increase in deaths, during and immediately following the fog, were due to respiratory and cardiovascular diseases and occurred mainly in people with preexisting respiratory or cardiac disorders. Over 90% were in people over the age of 45.
- 2) No evidence was found of a new clinical or pathological syndrome. The diagnosed causes of death were all the same ones which occurred less frequently at other times. Thus, it was impossible to distinguish any deaths from those which would have taken place regardless of the fog.
- 3) To the great majority of normal, healthy individuals

FIGURE 5

Weekly deaths and weekly temperatures in Greater London in winter of 1952



(of whom I happened to have been one) the fog was little more than a nuisance.

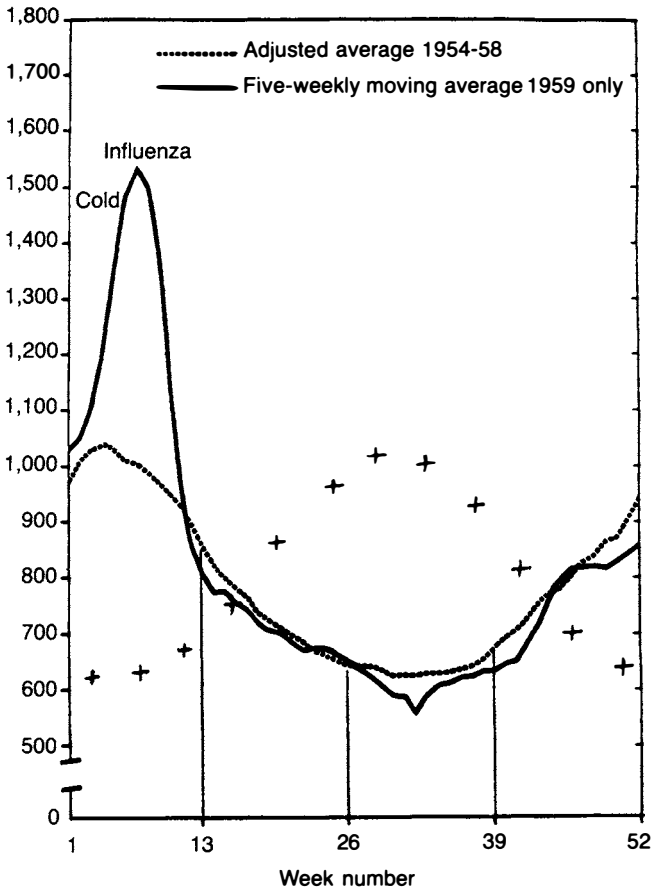
4) There was then and there is now no evidence that the pollutants, known or hypothesized, to have been in the air, could have caused such mortality, i.e., beyond the simultaneity of the occurrences. In the words of a specialist in toxicology and occupational health: "The obvious discrepancy between the alleged disastrous effect of air pollution on health and the inconspicuous concentrations of sulfur dioxide measured in the air have taxed the imagination of toxicologists for the past 20 years." Since Battigelli (1968) made this remark 20 years ago, we can now say that it has taxed their imagination for 40 years.

5) In the same annual reports of the London County Medical Officer (1952-65) that I have been citing above, appear the following statements: "Striking increases in mor-

tality have previously occurred in London in conjunction with periods of intense fog and cold" (Report for 1952, p. 159) and "So far, in the history of London smogs, there does not seem to have been an incident *causing excess deaths* which has not also been accompanied by low temperatures" (Report for 1958, p. 18) [emphasis in original].

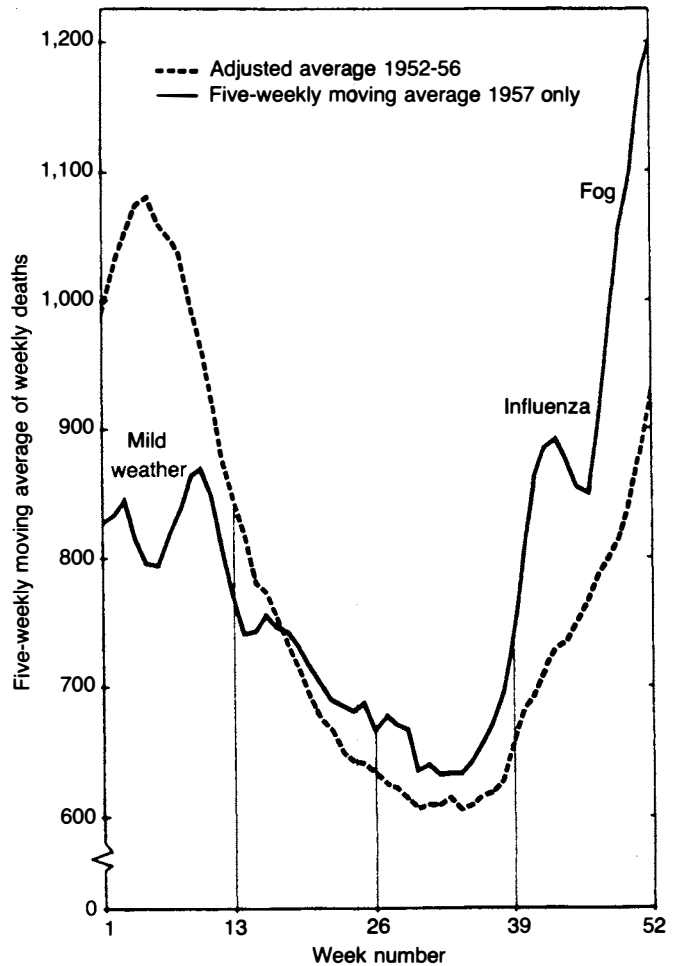
6) In the influenza literature, it is stated that years of influenza epidemics tend to show three peaks of infection; a pre-winter outbreak, which may not always be discernible, in which the infection spreads through the population, an early- to mid-winter outbreak, which tends to be sharpest and produce the highest rate of infection, and a late-winter outbreak, which generally lasts longest and may account for the greatest total number of cases. The influenza literature also expresses wonder about the absence of a report of an influ-

FIGURE 6
Weekly mortality for London AC during 1959 compared to 1954-58 norm and 23°F mean temperature range*



*Mortality figures derived from data from the County Medical Officer (1960).

FIGURE 7
Weekly mortality for London AC during 1957 compared to 1952-56 norm*



*Derived from data for 1952-1956 from the County Medical Officer (1958).

enza epidemic in the London area in early December 1952, when such an epidemic was clearly evident at that time in north and central England and across the channel in Europe. It concludes that the epidemic in London may have been masked by an air pollution episode.

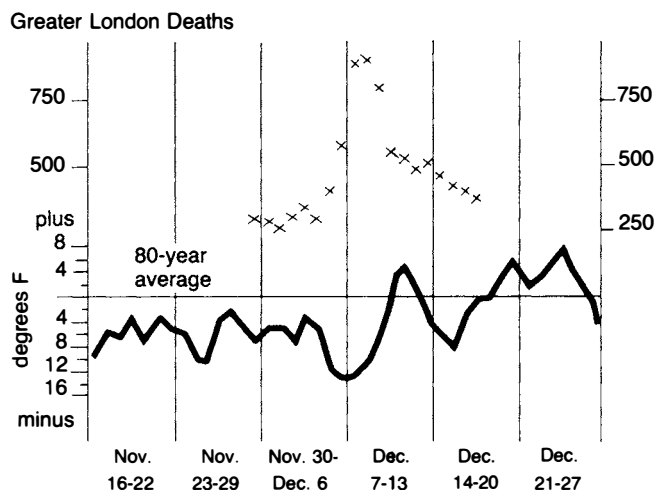
Does it matter whether the 4,000 "excess deaths" in London in December 1952 were due to air pollution or to cold weather and influenza? Yes, it matters. Without the wide acceptance of the proposition that they were "caused" by air pollution, toxicologists, such as Battigelli, cited above, would have the courage to stand up and defend their convictions and we might not now be hamstrung by our present stringent air quality standards, which are very expensive, if not impossible, to meet and we would be able to spend the money on the real problems facing us, of which there are many, rather than wasting it on imaginary ones.

The radiation question

One more quick example. You all have no doubt been exposed to estimates of the number of additional cancer deaths that will result from the nuclear accidents at Three Mile Island and Chernobyl. These were based on data from very high exposures extrapolated by a straight line back to the zero point, i.e., no cancers only at the point of no radiation. On **Figures 10 and 11** I show two sets of data on cancer incidence against exposure to radioactivity. Figure 10 shows total cancer incidence against external background radiation dose in millirem per year for individual states from Cohen (1980). Note the amazing fact that cancer rates appear to decline with increased radiation dose! Figure 11 shows mortality from "leukemia" and "other cancers" for the Hiroshima-Nagasaki survivors as a function of radiation dose in rads—this Figure is from Luckey (1988) and is based on the data of Kato and Schull (1982). Note the equally amazing fact that the sample group in the lowest exposure class of 3.4 rads (actually 0.1 to 9.0 rads) has an incidence rate below that of the zero or control group. This point is generally explained away by the claim that it is not statistically significant but—note that it contains the largest number of cases, 23,073. Dr. Luckey (1988) has collected some 300 published studies covering all types of life forms—plants, bacteria, and animals, including humans—which support his general conclusion that increases in radioactivity exposure up to about 10 times the normal background exposure would, in fact, be beneficial, i.e., would lead to fewer cancers, greater longevity, and even *decreased genetic effects*, etc.

Without reviewing any more of these cases, let me state categorically that these three cases—trends in airborne pollution, health effects of air pollution, and health effects of exposure to radioactivity—are typical of the situations I have found in every such environmental problem I have been able to investigate over the last 20 years. The sharp contrast between the *Global 2000 Report to the President* (Council on Environmental Quality and Department of State, 1980) and

FIGURE 8
Winter 1952 mean daily temperature in London plotted as departures from 80-year mean



The Resourceful Earth (Simon and Kahn, 1984) is not unique; it is typical. Even the internal contradictions within *Global 2000* itself are not uncommon—frequently a review, a summary, a covering letter or a press release turns a rather mundane book or report into a life-threatening disaster. The amazing thing is the consistency with which the shorter version paints the grimmer and more threatening picture and is also the one which gets most widely disseminated and repeated.

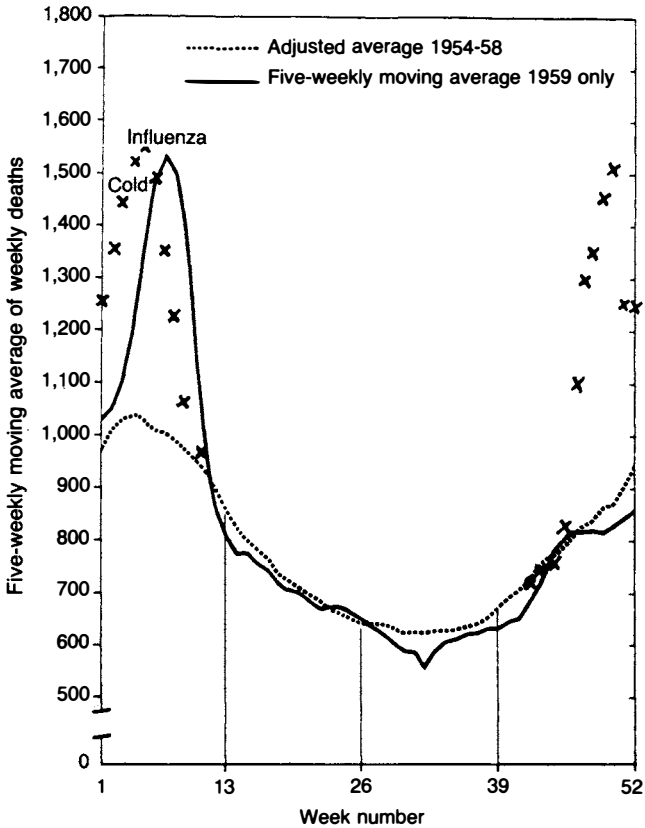
What are the reasons for this strong consistent bias in our communications systems for picking out and broadcasting the bad news and ignoring the good news? I have found some very powerful forces behind this bias:

1) First, it is in the nature of us human beings to be more interested in bad news than in good news. We all perk up at a fire, a bloody accident, a heinous crime, an impending threat or a lurking danger, or literally anything that *goes wrong*. The media people have long recognized this and are vying with each other to get and keep our attention.

2) Second, from time immemorial, the standard ploy for controlling people, the budget, or the social agenda has been to warn of an impending doom or hazard and to then openly or covertly seek the authority and/or the resources to control it. Ready examples which come to mind are the "seven good years followed by the seven lean years" from the Pharaoh's dream, and the live sacrifices of the Aztecs. The political steamroller generated at the end of the 1960s to combat the threat of air pollution literally flattened anyone who tried to stand up and tell the public that air pollution was not a problem, or at least, not a worsening problem. The same thing is

FIGURE 9

Weekly mortality for London AC during 1959 compared with 1954-58 norm* and with 1952 running mean in Greater London



*Mortality derived from data from the County Medical Officer (1960).

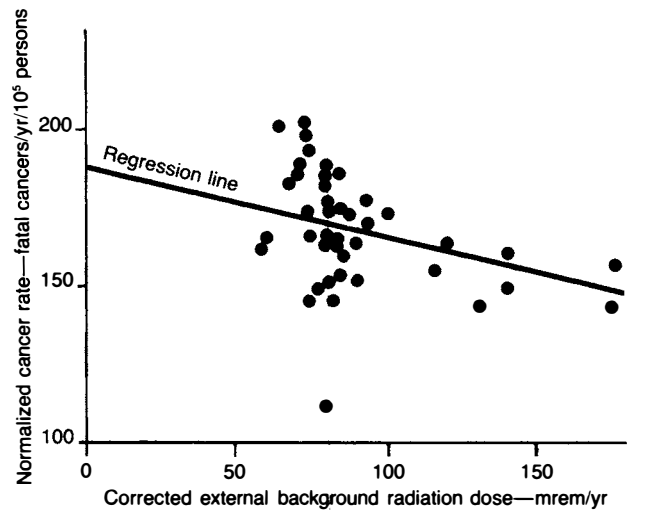
happening now with acid rain and nuclear winter.

3) There are powerful forces in the world today, including in this country, who view the free-market free-enterprise system, and the industrial machine with the advanced and affluent civilizations which it has produced, as at least an enemy—if not inherently evil. Part of this follows, no doubt, from the fact that it has also generated forces capable of policing the world. These forces have, in essence, declared war—in which all is fair—and are attacking us in any way they can. They long ago realized they have little hope of success without enlisting as fellow travelers as many as possible of those who for one reason or another are unhappy with the system. They have thought up ways to simulate the stratagems of tissue rejection and cancer, to turn the system on itself and to get it to dismantle its down defenses.

The attack goes on on every issue: pollution, pesticides, herbicides, food additives, hazardous wastes, population explosion, preempting resources from lesser developed countries and future generations, species extinction, military

FIGURE 10

Total cancer incidence against background radiation exposure, averaged over individual states in U.S.



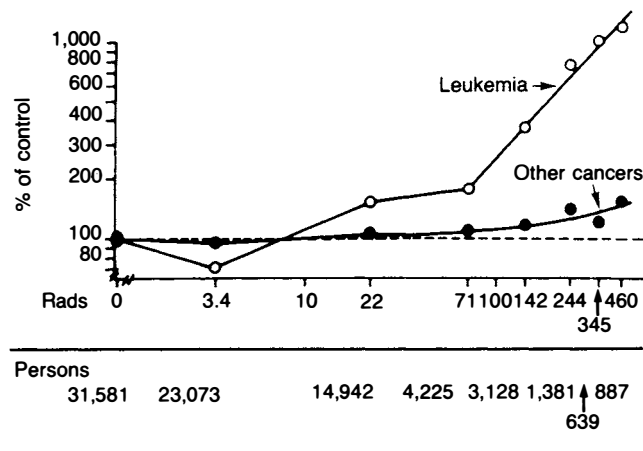
forces, the police, the FBI and CIA, the educational institutions, and the educational curricula. Despite the obvious increases in longevity and decreased mortality rates, particularly among infants, our society is painted as a dangerous place to live in, and every identifiable risk is ferreted out for elimination (other than those of crime and hard drugs, apparently—there is considerable evidence, in fact, that drugs are part of the attack).

4) Within my generation, a new force has been generated. Currently almost all scientific research is supported by government funds and relatively little of these funds are specifically allotted to the uncovering of new knowledge or granted as rewards for past achievements or to stimulate greater efforts from known achievers. The vast bulk are allotted to those who propose to study how to save us from known hazards or problems: climate change, the ozone layer, acid rain, nuclear winter, cancer, etc. The last thing that a research director or a scientist working in this system would want to do is to demonstrate or to admit that the problem, which he has been or hopes to be funded to study, is in fact, *not* a problem. That would be professional suicide. On the other hand, the pressure to come up with new hazards to study, or to make the present problem seem even worse and therefore of greater priority compared to other problems, is tremendous.

5) Another force, aggravated over the past few decades, is the increasing isolation of scientists from the remainder of society. Science training is a step-by-step process, each building upon the other. The mathematics ladder leads from arithmetic successively through algebra, geometry, trigo-

FIGURE 11

1950-78 cancer mortality in Hiroshima-Nagasaki (Kato and Schull, 1982)



nometry, analytical geometry, calculus, differential equations, integral equations, etc. In physics, it's kinetics, dynamics, electricity, optics, hydrodynamics, thermodynamics, etc. At the same time that these ladders have become longer and more difficult, with new ones continually being added, fewer and fewer science courses have been required of non-science majors. With each new class that is turned out of our educational institutions, communications between scientists and non-scientists about scientific subjects has become more difficult.

Perhaps even more serious, because it is less appreciated, is that the same situation is occurring between the scientists in different disciplines. It is little wonder that scientists are being regarded as weird, if not actually to be feared. How can you have faith in anyone you can't even understand?

I would like to leave you with one last thought. Dr. Bernard L. Cohen, one of the contributors to *The Resourceful Earth*, also added a one-page dissent. The essence of his dissent is as follows:

As a scientist, I see no barriers to a bright future for America and for mankind. . . . However, in the past 10 years, science has come under irrational attack from the forces of ignorance, and is losing public support. . . . Our government's science and technology policy is now guided by uninformed and emotion-driven public opinion rather than by sound scientific advice. Unfortunately, this public opinion is controlled by the media, a group of scientific illiterates, drunk with power, heavily influenced by irrelevant political ideologies, and so misguided as to believe that they are more capable than the scientific community of making scientific decisions. . . . Unless solutions can be found to this problem, I believe that

the United States will enter the 21st century declining in wealth, power, and influence, and within the next century will become an impoverished nation. I therefore find it difficult to share in the optimism that characterizes this report. That does not mean that I sympathize with *Global 2000*; indeed, some of those who were most influential in its preparation have been among the leading perpetrators of the policies that are ruining us. The coming debacle I foresee is not due to the problems they describe, but to the policies they advocate (Simon and Kahn, 1984, p. 566).

*This paper draws upon the work of Committee VII, Fifteenth International Conference on the Unity of the Sciences held at the J.W. Marriott Hotel, Washington D.C., 26-29 November 1986. The charge of Committee VII was *Global 2000 Revisited: or Reassessing Man's Impact on Spaceship Earth* (Ellsaesser, 1988). The author had the outstanding privilege of organizing, chairing, and editing the Proceedings Volume of Committee VII, ICUS XV.

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