

Appendix M

CONCENTRATED BENEFIT over DIFFUSE INJURY

by John W. Gofman, M.D., Ph.D., and Egan O'Connor, November 1993

The law of Concentrated Benefit over Diffuse Injury can be stated as follows:

A small, determined group, working energetically for its own narrow interests, can almost always impose an injustice upon a vastly larger group, provided that the larger group believes that the injury is "hypothetical," or distant-in-the-future, or real-but-small relative to the real-and-large cost of preventing it.

1 ● The Surprising Aspect of This Law

Many scholars have written about this extremely important axiom before -- it is not original with us. The fact that narrow special interests are always at work for their own benefit *at the expense of others* is not at all surprising, given human nature. And it is not surprising that the beneficiaries select what appears to be the strategy of least cost to themselves.

The surprising aspect is the failure of so many victims -- especially in peaceful democracies -- to appreciate the *aggregate* consequences which inevitably accrue, when each small injustice has such a high chance of prevailing.

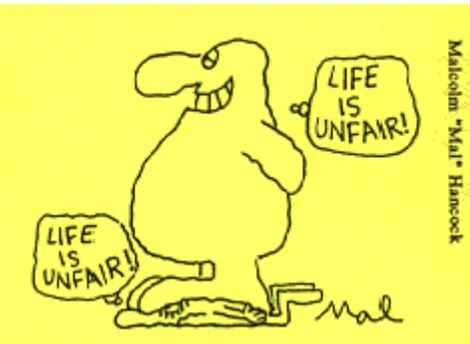
2 ● The Real Scope of the Injury

We regard Concentrated Benefit as the most harmful law of all humanity. Is this correct?

The terrible feature of this law is that each incremental injustice has a very high chance of prevailing. So, even when new injuries or injustices truly are small, the aggregate abuse can accumulate to tragic proportions after the axiom of Concentrated Benefit has operated on behalf of various narrow interests again ... and again ... and again.

We often wonder at the vast abuse which the general public has failed to prevent: Tyrannies, wars, genocides, mass starvations, proliferation of nuclear weapons, intimidation by well-armed international and local thugs, corrupted democracies, corrupted markets, massive thefts via inflation, inadequate schools, unnecessary poverty, destruction of wildlife, and gross pollution, to name a few.

Why do people tolerate this severe abuse, when they so vastly outnumber the few beneficiaries?



The main explanation, in our opinion, is the operation of Concentrated Benefit over Diffuse Injury, insidiously and incessantly. By the time people think, "We're just not going to take this anymore," the costs and personal dangers of reversing the abuse have usually grown too. Moreover, there is no inherent limit to the scope and number of attempted abuses, whereas citizens have inherently limited resources to resist.

3 ■ Pollution Fights: What Every Activist Soon Learns

Narrow, special interests can prevail via government force, via direct force, or via deceit. Direct force is used by gangs and tyrants, but polluters achieve their aims "peacefully" by using both deceit and the force of government on their behalf.

This essay explores some strategies in the environmental movement toward the law of Concentrated Benefit -- with emphasis on the problem of pollution at *low* levels.

The axiom of Concentrated Benefit over Diffuse Injury accounts for the current promotion of a "de minimis" policy toward nuclear (and other) pollution. A de minimis policy asserts that society should not concern itself with trivia. (Latin: *De minimis non curat lex*. The law does not concern itself with trifles.) A de minimis policy toward *pollution* asserts that poisonous discharges and human exposures below a certain level should be treated as non-existent -- because their consequences are allegedly trivial.

Trivial. That is the essence of the axiom. Triumph for each injustice is virtually assured if the advocates succeed in presenting it as trivial.

When polluters and their agents accuse citizens who oppose them ("activists") of being Chicken Littles and hysterics and ignorant extremists, the polluters are working for a public perception that the injury is trivial.

And because the general public can not afford to do battle against *trivial* injustices, citizen activists against pollution know that their chances of prevailing are improved if they can show that the pollution constitutes a calamity for the community. Anyone who has been an activist for a year has learned how the axiom of Concentrated Benefit over Diffuse Injury "demands" proof of a calamity.

4 ■ The Meaning of No Safe Doses

As a result of the axiom, we receive appeals again and again from citizen-groups who need an expert to swear that nuclear pollution in their locality is (or will be) a

calamity. And since we are well known for stating that human evidence proves, "There is no safe dose of radiation," it is natural that we hear from these groups.

The word "safe" means free from risk of injury. Existing human studies combined with nuclear track-analysis show that every dose of ionizing radiation confers a risk of carcinogenic injury, even at the lowest possible total dose and dose-rate (Gofman 1981, Gofman 1990). Government statements are false when they say that it is impossible to know what happens at very low doses of ionizing radiation.

Our statement that there is no safe dose of ionizing radiation does not mean that every dose -- regardless of its size -- produces the *same* amount of hazard or qualifies as a calamity. Our books show again and again that the size of a radiation risk is tied to the amount of the accumulated dose and the number of people who receive it.

"Two billion people on the planet have no electricity. But they want it -- and how they get it is going to be one of the most critical environmental issues of the next century."

● **Neville Williams, Solar Electric Light Fund (cited in 1993 by Sustainable Technologies International, Box 1115, Carbondale CO 81623).**

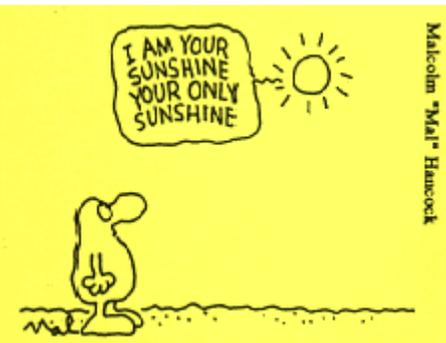
Even after a nuclear accident as severe as Chernobyl, it is unrealistic for an irradiated population to feel, "We are all doomed," or "The children are all doomed." Although the aggregate number of Chernobyl-induced cancers will be very large -- at least a million over all time -- this will occur not because everyone in fallout areas has a *high* personal risk of cancer from Chernobyl. It will occur because there is no safe dose, and therefore the accident creates a small extra risk of cancer for *many* people (over 500 million exposed individuals, inside and outside the ex-USSR).

The fact that the enormous health consequences of the Chernobyl accident are diffused among so many people is what allows powerful operation of the law of Concentrated Benefit over Diffuse Injury. Governments which sponsor nuclear power can say that personal cancer-risks even from Chernobyl are small. This assurance is supposed to inactivate public resistance to "routine" levels of nuclear pollution.

5 ● Kiev's Children: Their Fate Was "Blowing in the Wind"

It would be much harder for people to obscure the health consequences of nuclear pollution if the wind and weather during the Chernobyl accident had happened to concentrate most of Chernobyl's fallout on Kiev, an ancient city of about two million people only some 50 miles south of the reactor-site. This could easily have happened, with a different combination of weather and a somewhat less powerful explosion (giving less altitude to the radioactive plume).

With very unlucky circumstances for Kiev, the whole-body doses from Chernobyl could have been high enough in that city to cause radiation-induced cancer sometime during the lifespan of one-third of all the young children exposed during the accident there. What sort of dose would do that? The answer is approximately 17.5 whole-body rems, average, per child (Chapter 5 in CNR's forthcoming book). Fortunately for Kiev (and for the nuclear power industry), the city was spared from such exposures, and the fallout was diffused over an enormous area inside and outside the ex-USSR.



6 ● If the Sum Matters, Then Each Contribution Matters

Even when there is no safe dose of a pollutant, the individual risks and also the collective risks from a single local source of pollution or from a single release can be low -- but that does not necessarily mean that small releases of such pollutants are "born trivial."

With respect to nuclear pollution and every other type of persistent pollutant which lacks a safe dose, the following point deserves emphasis again and again:

What counts biologically is the sum of all the injuries over time from ALL the combined sources and events which release persistent poisons (radioactive or other) into the biosphere. If the sum matters biologically, then each contribution to the sum matters. Whoever consents to the small releases is consenting automatically to their worldwide sum, whatever it turns out to be.

It follows that there should be no need for citizen-activists to argue that each small source of pollution by itself, in isolation, constitutes a calamity. Unless activists object to releases of "even one molecule," their opposition to small sources is both rational and morally imperative.

7 ● De Minimis Policies on a Global Scale

Suppose that the United States adopts a de minimis policy toward pollution. Then every other nation is also entitled to such a policy. A likely result:

Polluters worldwide will actually release *more* (not less) of their total poisons by the simple technique of sub-dividing them in time and space, so that the consequence of each proposed release, by itself, can be convincingly presented as "too trivial to count at all."

We can expect the total poison produced by human activity to increase a great deal as living standards rise, at least for 2 billion very poor people. Moreover, as population

expands from the current 5 billion toward 10 billion people, the total quantity of poisons produced by human activity is likely to increase by a very great deal.

Legalized and non-legalized releases of even a "trivial" fraction of a growing total could still be devastating.

8 ● "But Humans Are Living Longer Than Ever!"

Devastating? With regard to poisonous emissions at very low levels, claims are made that diffuse injury to humans has never been proven and therefore is probably just imaginary. Suggestions that unproven means unreal are false. Dangerously false.

Pollutants which are mutagens, for example, injure the health of *future* generations. Genetic afflictions whose cause is not identified can build up gradually, over many generations of exposure. For this and other reasons, the cause-effect relationship between certain pollutants and human health problems can be real but *never* provable.

Humans need some humility about unforeseen and unforeseeable consequences of messing with the ecosystem. In a system, by definition, everything is connected to everything else. It is said that toad populations are declining, worldwide. If true, then why? What else is occurring that we have not measured yet? What is next?

A familiar response of polluters and their defenders is that *humans* are living longer than ever.

So? Increases in human lifespan might continue right up until the ecosystem which supports us collapses (if it ever does). There are many reasons for the increase in longevity, including sanitation, pharmaceuticals, and nutrition. Perhaps we would be living even longer and in better health if it were not for pollution. Longevity and good health are not the same thing. (For example, many neurotoxins and genetic afflictions cause misery but not early death.)

With respect to debate over de minimis policies toward pollution, the song that "humans are living longer than ever" is a deceitful use of truth. Deceit is sometimes a sophisticated substitute for force used by people intending to *prevail*.

9 ● The Inherent Imbalance of Forces

The fundamental law of Concentrated Benefit over Diffuse Injury always operates in favor of specific polluters, not ever in favor of the general public.

This does not mean that citizens *always* lose. For example, citizens have battled the Yucca Mountain nuclear waste repository to a current standstill. The odds against successful opposition were enormous at the outset, many years ago. But determined citizens, even without an immediate personal stake in the outcome, changed the odds little by little. We are in awe of their selfless and effective work.

On the other hand, all of us have an obligation not to let an occasional success blind us to reality. Citizens have inherently limited time and resources, whereas the number of abuses attempted upon them *has no inherent limit*. Thus, for every success, there are necessarily tens, or hundreds, or thousands of other abuses which are neglected. In addition, each success inspires well-funded campaigns by narrow, special interests to reverse the cumulative successes and -- in our field -- to cultivate the perception that people against nuclear (and other) pollution are fanatics who impose huge and unfair costs on society.

10 ■ A Win-Win Strategy -- with Limits

Correctly or not, polluters believe in a huge benefit for themselves from de minimis policies and lenient "permissible" releases. By polluters, we mean owners and employees from top to bottom in a polluting industry.

The polluters' belief in a huge benefit is the focus of action by many environmental organizations, which work to provide the polluters with an equally attractive benefit which can be achieved with less pollution. More efficient use of energy with equal or greater profits. Utility-owned solar energy instead of nuclear power. More efficient manufacturing with less waste-production and with equal or greater profits. Cost-effective recycling. No decrement in employment.

This strategy of coping with the axiom of Concentrated Benefit is sometimes truly a win-win affair. "Both sides" achieve what they want. Although CNR was a leader for some of these proposals in the early 1970s, we also must point out that an exclusive focus on the axiom's "benefit" side has limits.

"Emotional" Assertions about Human Rights

The win-win strategy tacitly assumes that the victims have the burden of creating a solution, and that the aggression (pollution) must continue if the victims can not think up and arrange an attractive substitute which pleases the aggressor. This strategy avoids "emotional" assertions about the *right* of ordinary people not to be dumped upon, not to be used in biological experimentation, and not to have the common heritage of ozone, aquifers, and remaining wildlife injured. But in the end, it may be impossible to avoid the issue of genuine human rights. An example:

When the need is to contain nearly 100% of an activity's poison, the per-unit cost of containment is usually much higher for the last 10% contained than the per-unit cost for

the first 90% contained. This makes better containment inherently unattractive to polluters. The chance of cost-effective recycling for the last 10% of the poison is very low (and is non-existent for radioactive pollutants). The alternative of passing the extra containment cost along to customers is also unattractive. Why? Because (in general) the higher the price of something, the less people will buy of it.

"What's wrong with emotion? According to Webster's Dictionary, emotion simply means a strong feeling. Of course we feel strongly or emotional when we're engaged in struggles to protect the species and life-support systems of this planet ... To be called `emotional' should not be something to run from ..."

● **Michael C. Colby (in 1993), editor, *Safe Food News*, RD 1, Box 30, Marshfield VT 05658.**

In short, the hope of crafting a win-win solution on the crucial issue of ubiquitous, low-level emissions is often unrealistic. Without taking a stand on the human rights issue, what ground is there to stand on?

11 ● Some Morally Dubious Strategies against Pollution

In contrast with the win-win strategy, some ways of coping with the law of Concentrated Benefit are morally dubious. We are shocked whenever a major environmental group appears to concede a right to *pollute*. We quote an example from an influential group in 1991:

"The key to creating an environmentally sustainable global economy is partially to replace income taxes with environmental taxes -- taxing such environmentally destructive activities as burning fossil fuels, the use of pesticides, and the discharge of toxic wastes."

While it is true that sufficient taxation would reduce destructive activities, how does the proposal differ (in moral terms) from taxing homicide? "It's OK to commit premeditated random mayhem, provided you do less of it." Beside this, it would be difficult to create sufficient political support for punitive levels of taxation (not just lipservice). A difficult but morally better goal might be creating support for the position:

"Low-level pollution must stop because narrow special interests (polluters) have *no right* to impose trespass, experimentation, or diffuse injury upon the general public and its common property."

I've seen more people win what they wanted by informing themselves about the nature of the problem and the process that they're involved in, and then expressing their goals in terms of their feelings ... Our emotions were put into us by the evolutionary process for good reason ... I often hear government officials or corporate officials say this person is `just an hysterical housewife.' I have high regard for hysterical housewives. I think they're a very good force in American society. And I think we need more of them."



●- Peter Montague, Ph.D., (in 1993), director of the Environmental Research Foundation, POB 5036, Annapolis MD 21403.

A Great Big Pitfall

The taxation approach is morally similar to the provision of the Clean Air Act which establishes "emissions allowances" for sulfur-dioxide from electric power plants. Utilities which bring emissions below the required levels obtain pollution credits (issued by government) to use for expansion or to sell to other utilities. The goal is to achieve a net reduction in total emissions, and to do it at plants where reduction is most cost-effective. Fine. Nonetheless, a market in government-issued pollution-credits is a statement that pollution at certain levels is not only legal but also morally legitimate.

If "environmental taxes" and "pollution-credits" succeed in reducing pollution, then it would appear that the policies help meet our moral obligation to future generations not to pollute and not to destroy the ecosystem. It can be argued that any strategy which moves society in the right direction must be morally right.

But when environmental taxes and pollution-credits legitimize pollution, they work in *favor* of low-level pollution and de minimis policies. This is the *wrong* direction. We repeat: If the *sum* of individually small acts of pollution is what counts biologically, then no contribution to the sum is negligible.

12 ● A Worthwhile Task for All of Us

The "iron law" of Concentrated Benefit over Diffuse Injury is so powerful in every aspect of life, and some of its consequences are so abominable, that victims are sometimes driven into strategies which they find morally distasteful. Such strategies are, themselves, a type of debasement and humiliation.

We have hope that humans can develop loftier strategies. A necessary requirement is that most people *recognize* the nature of the universal law which favors injustice over justice -- even in peaceful democracies. Since this type of education so rarely comes "from the top," either grassroots activists will do it, or it will not occur. The ground for inventing good and effective strategies will be much more fertile when everyone is so aware of the axiom that it enters the folklore ... when just the two words, "Concentrated Benefit," can communicate the ages-old dilemma and the dynamics of it.

Successful solutions to the dilemma are far more likely to come from the grassroots than from prominent intellectuals who so often depend today, directly and indirectly, on approval from one special interest or another. We note that the "founding fathers" of the United States were less beholden to special interests than today's professional intellectuals. The founding fathers actually addressed the law of Concentrated Benefit.

THE MEEK SHALL
INHERIT THE
EARTH AFTER
THE GREEDY HAVE
DESTROYED IT!

Malcolm "Mal" Hancock



The preamble to the United States' Constitution speaks of a government which would promote the *general* welfare, meaning that laws would benefit the population at large, not benefit small sub-sets at the expense of the general public. In the text of the Constitution, its authors tried to *limit* the areas of government activity -- limits which (if they had been honored) would have greatly reduced opportunities for narrow interests to "persuade" elected officials to operate on behalf of the narrow interests.

13 ● A Central Goal, an Earth-Shaking Achievement

It is hard to imagine a more beneficial achievement in human history than the future development of *generic* ways for the public to cope with the law of Concentrated Benefit over Diffuse Injury, and thus to prevent endless repetition of its many dreadful consequences (see Part 2).

Some years ago, an interviewer suggested to one of us (jwg) that it is too difficult for grassroots people to solve the *big* problems. He thought it was futile. I still answer now, as I answered then:

Of course it will be difficult to solve the big problems of humanity. But can you, or I, or anyone justify directing all our efforts toward solving trivial problems -- just because the ones we all really need to face are difficult?

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●- John W. Gofman, M.D., Ph.D., is chairman of the Committee for Nuclear Responsibility, and Egan O'Connor is editor. Dr. Gofman is professor emeritus of Molecular and Cell Biology at the University of California, Berkeley, and author of several books on the health consequences of exposure to ionizing radiation.