
Viewpoint

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Inhaber and the Limits of Cost-Benefit Analysis

IN JANUARY there was an exchange in the *Washington Post* between Mark Green of Congress Watch and Peter Schuck of the American Enterprise Institute on how much cost-benefit analysis could be reasonably used for the purpose of social regulation. I read through that exchange and, unsurprisingly for a representative of the *Wall Street Journal*, came to a somewhat different conclusion from Mr. Green's. Yet as I read his article, I was struck most of all by the extent to which I agreed with his analysis.

His argument, to quote from the *Post* article (January 21, 1979, section C1), is that "given the state of economic art, mathematical cost-benefit analyses are about as neutral as voter literacy tests in the Old South." That is not exactly a dispassionate way of putting it, but I think he is on to something. It may well be that by thinking explicitly about costs and benefits, even apart from the final verdict one reaches in a given case, one injects something into the debate that is not politically neutral and is, in some fundamental way, hostile to a large part of the current movement for social regulation.

This possibility came to me quite powerfully out of a piece of work that I did recently, part of whose results appeared in the *Journal* as a feature piece. The subject was the report produced a couple years ago by Dr. Herbert Inhaber, a physicist working for the Atomic Energy Control Board of Canada. Inhaber made a first cut at going through the existing literature on the risks associated with various

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energy sources, in an attempt to figure out how the sources ranked relative to one another.

The *Journal's* involvement with the Inhaber report began some months ago when an article in the paper by another author mentioned the document in passing. Following that mention, a strange thing happened. Our features editor, Tom Bray, began to get detailed and passionate mail on the subject, telling what an egregiously bad piece of work the Inhaber report was. Some of this mail directed our attention to studies that, we were told, destroyed poor Inhaber quite completely. Tom Bray—being, among other things, a first-rate journalist—thought that if Inhaber could make so many people so mad, he must have struck a nerve somewhere. I was asked to see what all the noise was about.

It turned out that Dr. Inhaber had backed into these attacks by attempting a variety of cost-benefit analyses. What he set out to do was to make a pretty straightforward calculation of various kinds of energy risks. He took all the literature on the various energy sources—conventional systems like coal, oil, and nuclear power, as well as the newer and more decentralized technologies like wind and solar energy—and he added up the various risks to life and limb from each of them, all the way from the mining of the materials necessary to constructing each system, through the generation of power (including the back-up facilities needed by decentralized systems), to final waste deposit. The resulting report was fairly widely distributed, in no small part because Inhaber was the first person to do the unattractive but useful work of going through all the existing sources in the field and making the rather tedious calculations necessary to extract some kind

of comparable data from them. But Inhaber's report also got attention because it reached a rather startling conclusion. He said that the energy systems some people have touted as "clean," like solar energy and wind, could actually be riskier to society than some conventional systems, including nuclear power.

In retrospect, it is no great mystery why Inhaber's method of risk analysis would come up with such a conclusion. There are two kinds of structural reasons that contribute to the final verdict.

First, when one deals with a power source like nuclear energy, the maximum risks may be huge, but they are also remote. So any risk assessment method that counts both these factors will judge nuclear energy as relatively safe. Second, some of the new decentralized technologies are at the moment relatively inefficient and unreliable compared to the older systems. The low efficiency means that relatively large collectors are needed. Large collectors take substantial amounts of material to build. And these materials pose risk to life and limb as they are mined, manufactured, and transported. Further, the low reliability of the new systems makes it necessary to take account of their back-up systems, and add the attendant risks of those into the final risk total.

One can begin to see some of the structural problems with a method like the one Inhaber used. Moreover, there are limitations from obvious and ordinary failings in the data—from the gaps, the ambiguities, and the errors in some of the studies, and the lies as well. Also, it is hardly likely that any researcher doing the first comprehensive collection job in this area can avoid contributing some plain ordinary mistakes of his own.

Besides those kinds of problems, there are middle-level conceptual problems that risk assessment of this sort is only beginning to deal with. For example, is it helpful to count up all the risks involved in huge solar collectors, if in fact the solar collectors will not be built until some way is found to bring the size down and the cost into line?

There are also the larger conceptual dilemmas. For instance, are there some possibilities connected with some kinds of energy production that are so horrible that it is quite reasonable to refuse to risk them now no matter how remote the chances of their occurrence? Or are

there some kinds of dangers—for instance, the risk of producing a deformed child—that should be counted as being worse than illness or death or shortened lifespan?

As can be readily imagined, people wrote to Inhaber and the Atomic Energy Control Board with criticisms like this and, as a result, his report has been undergoing continual updating and correction. But none of these limitations explains the phenomenon that I was asked to investigate. The letters the *Wall Street Journal* was getting about the Inhaber report were not filled simply with criticism and suggestions for amendment. Instead, admitting to having no interest in amending the Inhaber report, they thought it would be better if the document were obliterated altogether. They said the report deserved obliteration because it was so badly done, but made no attempt to improve upon its analysis, or come up with a fundamentally different conclusion.

The chief opponent of the Inhaber report has been John Holdren, a Berkeley physicist active in the movement against nuclear power and in promoting research into nonconventional energy sources. In their letters, it is true, Dr. Holdren and his allies have included specific criticisms of the report. They have argued that Inhaber overestimated material requirements for windmills, used conservative assumptions for some nonconventional energy sources that he did not apply to other systems, and misquoted sources on the various kinds of conventional energy waste disposal risks. But in addition to the specific criticisms, these various letters and publications have also assailed Inhaber with a most extraordinary kind of general invective. They have charged not only that he is in error, but also that he is deliberately lying. They have called his document "by far the most incompetent technical document . . . ever known to have been distributed by grownups." They have called it "garbage" and Inhaber a "buffoon." They have claimed flatly that any expert who defends the report either has not read it or is not an expert (which, in fact, is not true).

They have attempted, when talking to me by telephone, to make contact with my dim journalistic mind by explaining that they have used all these strong words because their situation is similar to that of the journalists who attacked Watergate. We had used very strong language, I was told, to bring home the horror

of the Watergate offense against society and, for the same reason, they were using strong language to attack Inhaber.

Even for scientific controversies this is a very strange and, of course, grossly indecent way to conduct a debate. And for a while, I confess I was mystified by the spectacle. But now I realized that Inhaber's critics were precisely right to be so upset. The offense of a document like this is not that it opts for one energy system over another. Instead, what is really going on is that it launches, in large part unintentionally, a much more dangerous kind of attack. A document like this operates on the assumption that the risks of the various energy sources may be different in degree, but are not in critical respects different in kind; if they were different in kind, one could not presume to compare them on any scale whatsoever.

To put it another way, the method of inquiry in the Inhaber report asserts by implication that energy sources are all somehow ethically equivalent and that they can, in the large, be judged according to the same standards. The enterprise suggests that a person who argues for one energy source over another cannot legitimately be judged a friend or enemy of the people simply by the choice he finally makes.

This kind of comparison takes a subject that has been spoken of in moral absolutes and presents it as something uncertain, ambiguous, subject to doubt and, perhaps, to compromise. Making an assertion like this—saying that an area of inquiry is subject to doubt—may seem a minimal thing. After all, it certainly does not guarantee what one's verdict will be in a particular case. One might follow a method like Inhaber's and then decide to ban nuclear power, or a suspected carcinogen, altogether. But Inhaber's kind of discourse is, in spite of such uncertainties, a significant threat to the strategy by which today's new regulation has been making its gains.

The argument surrounding much of the new regulatory movement is that technological capitalism is poisoning people. The corollary of the argument is that the poisons produced by this capitalism must be removed from the environment, that this is the only ethically responsible course for public policy to take, that those who raise cost considerations should not be trusted because their arguments are only smokescreens thrown up by the forces of greed.

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For instance, Mark Green, in that *Washington Post* article, says that cost-benefit analysis might have prevented the Salk polio vaccine from coming on the market. He says cost-benefit analysis would have killed the idea of abolishing slavery. He says it would never have supported the child labor laws. He tells us that we cannot put a price on the child who can be saved from disfigurement from flammable sleepwear, or a price on the worker who is saved from asbestos-induced cancer. And the implication, which in its own way pollutes—indeed, poisons—the debate on regulation, is that those who talk in terms of cost-benefit analysis do not care about the child, do not care about the death.

I agree that these worries about children and lives are worries of the most profound kind. But in a way I think the people who have been attacking cost-benefit analysis in this way have not expanded their field of moral worry far enough. For instance, on the matter of toxic chemicals, we are increasingly able to discover more not only about the toxic character of the workplace, which is serious enough, but also about the toxic character of natural processes. To take one example—and this is not a smoke-screen, but a set of issues that at some point we must face in terms of public policy—by now we are aware of huge numbers of carcinogens occurring naturally in the food supply, in foods ranging from fish to green vegetables. Does our growing knowledge of these things come without some obligation to act? And if we do have to act, how can we do so without some form of cost-benefit analysis, imperfect though it may be?

Mr. Green is right in calling attention to the fact that cost-benefit analysis is the enemy of the unbridled agenda of social regulation that he has been promoting. But I think we will soon reach the time when regulatory trade-offs in this area cannot be avoided. It might be good for public debate on the issue if more people began to point this out. ■