

January 22, 1970

Dr. Chauncey Starr
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Dear Dr. Starr,

Thank you for your letter of January 16th which refers to my article of January 10th. As you do not mention my letter of January 1st I fear this may not have been forwarded to you from the Academy and I enclose another copy for your information.

Your paper was so provocative and so rich in the range of questions that it evoked that it is quite difficult for me to organize a set of complex reactions to it, and I fear that my main trouble in communicating with you about it stems from efforts to pick out one piece at the time. Besides the complexity of your own presentation there is also a serious figure-ground problem in view of the contemporary context of discussion of the hazards of nuclear energy development. When, as in your article, you do choose examples from that arena you may expect too much of any of your readers if their task is to disregard the general noise level of that discussion.

If I may reiterate the points in my letter of January 1st and perhaps explain them further, my main visceral reaction was directed at the glibness or optimism, all too evident in many formulations of energy policy, about the precision with which we know the biological hazards. The calculation that a hypothetical extreme catastrophe would have no worse effect than ten lethal cancers per million population would be extremely difficult to justify within two or three orders of magnitudes and has, of course, been sharply disputed by many contemporary critics. I have not reached a well formed judgement of my own on this matter and I am not sure that it is possible to on the basis of present information. But I have to challenge the assumption that this is a reliable calculation that can be fed into design calculations with the same confidence as physical engineering parameters. This is what I meant by a biased poker game and I hope there was no misunderstanding about that, though I am afraid a careless reader might find more sinister implications than I intended. So I would challenge your "principal point" in so far as it evidently totally disregards the level of uncertainty about the risk factor. One catastrophic failure in 100 plant years of operation might well be an absolutely intolerable level of breakdown, obviously depending on the magnitude of the associated catastrophe.

over

CHAUNCEY
STARR

Your reaction to my discussion of domestic electrocution misses the main point I sought to bring out. You use the number of deaths associated with various kinds of activities as a pragmatic estimate of the cost that society is willing to pay. The market in which such decisions are made has, in my view, too many externalities for this to be a fair judgement. One should rather, I believe, examine the incremental price that well informed individuals would be willing to pay for an incremental reduction in their hazard. The fact that many people are willing to undergo absurd risks in pursuit of their hobby horses may be a little more than evidence of the suicidal irrational impulses to which all of us perhaps vulnerable.

I would urge you then to take a closer look at the nature of the market whose analysis you introduced in your article. In fact, I am sure you could do a much more incisive a job than I would ever attempt in analyzing the many sources of distortion of rational choice in such a market.

I would be more willing to accept your assertion that "the protection of major capital investments may often be a more demanding safety constraint than social acceptability" if our legal system ensured a more equitable allocation of responsibility for damages. The Price-Anderson Act makes an important step in this direction, on the one hand, by properly imposing what amounts to "absolute liability" for exterior damages in the event of a nuclear accident even if only by the indirection of waiver of defenses through administrative action and negotiation. On the other hand it sets up a subsidised insurance system that grossly distorts the market in which an objective evaluation of these risks might be the subject of arms-length bargaining. I am sure you could also fetch many other examples where the population at large is frustrated from obtaining legal recourse for probabilistic damages. In these circumstances we simply do not have a fair market that would lead me to support your conclusion.

Let me by all means repeat my positive response to your suggestion of the meeting.

Sincerely yours,

Joshua Lederberg
Professor of Genetics

JL/rr