

EXCHANGE.

Nuclear Fallout

Cambridge, Mass.

Jay M. Gould in his article "Chernobyl—The Hidden Tragedy" [March 15] correctly quotes our late friend Andrei Sakharov, but his own numbers are unsupported and his logic relating the two is wrong.

Sakharov *assumed* that there is no threshold for radiation damage and therefore estimated an increased cancer incidence caused by low-level exposure to the radioactive products of atmospheric nuclear tests. He knew well that the expected increase in mortality is small and randomly distributed among the population so that for each case it is impossible to prove that radiation was the cause. The increase itself can never be directly determined. It must rest on the non-threshold assumptions and on the validity of dose estimates.

Twenty-five years ago Ernest Sternglass claimed that U.S. childhood leukemias were caused by bomb tests. The number of leukemias was *lower* than Sakharov's estimates and the claim was repudiated by the Health Physics Society. Gould and Sternglass's recent "findings" of effects from Chernobyl have also been widely challenged, both by the press and by us in *Environment International*, volume 18. Doses were higher in Canada, where there was a *decrease* in mortality, and forty times higher in Europe, where no increase was observed.

Gould's comparison chart of breast cancer mortality rates with the density of emissions from civilian nuclear reactors proves nothing. The strontium emissions from nuclear plants are minuscule—less than 1 percent of that from bomb tests. One can correlate breast cancer mortality with many factors; the issue is which is the causal one. In a very detailed study, Seymour Jablon of the National Cancer Institute failed to find any increase in leukemia or cancer near nuclear plants.

Vladimir Chernousenko's statement that 8,000 of the 600,000 Chernobyl cleanup workers are dead is probably correct. But this is the number expected from the U.S.S.R. and Ukraine's statistics from *all* causes. An implication that the deaths are all, or mostly, due to radiation is false. Health records for many of those 600,000 are being collected and studied by a laboratory under Dr. Anatoly Tsyb in Obninsk, Russia, and we can hope for reliable data in the future. We have been unable to find any evidence that Chernousenko has radiation poisoning. His symptoms are a better match to his heavy cigarette smoking.

Chernousenko's suggestion that most ailments in Ukraine and Belarus are due to radiation is not supported by the data. Professor Fred Mettler of the University of New Mexico, leading a team of 100 international physicians, did a careful study of people in Ukraine and Belarus. This was reported as part of the International Chernobyl Study by the Interna-

tional Atomic Energy Agency in 1991. The increase in the "subjective" health measures (headaches, etc.) was as great in areas with no radioactivity as in those areas with high radioactivity.

The Chernobyl accident was a human tragedy. However, incorrect claims will not help anyone exposed to radiation. Neither will such claims help officials to protect public health in this country. Pressure from an unduly alarmed public might divert the funds that could be better used for risk reduction elsewhere.

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GOULD REPLIES

New York City

According to Sakharov's memoirs, in 1958 he calculated that ingested bomb test fission products would accelerate the deaths of between 500,000 and 1 million people worldwide for every 50 megatons of nuclear explosive power. The Natural Resources Defense Council has recently estimated that by 1963, when U.S./U.S.S.R. atmospheric bomb tests ceased, they had jointly accounted for nearly 600 megatons, so that Sakharov's estimate of the number of premature deaths caused by bomb test fallout would be in the range of 6 to 12 million. Yet Wilson states that Sakharov "knew well that the expected increase in mortality is small."

The nuclear establishment, of which Richard Wilson is a leading proponent, has no explanation for the many epidemiological anomalies cited in my article, which as a statistician working with official vital statistics I can in every case correlate with large-scale nuclear emissions. While statistically significant correlations do not necessarily imply causation, they require that objective scientists seek plausible alternative explanations.

For example, Wilson challenged Ernest Sternglass's and my discovery that Chernobyl radiation reached the United States in May 1986 and, according to official mortality data, resulted in statistically significant increases in mortality in that month for the very old and very young and those with failing immune systems, as attested by the doubling of AIDS-related deaths in May 1986.

Wilson and Shlyakhter state that doses were "forty times higher in Europe, where no increase was observed." But they ignore the finding by J. Scheer, published in the November 1989 *Lancet*, that the post-Chernobyl increase in infant mortality in southern Germany was far greater than the increase observed here. They dismiss Chernousenko's findings, endorsed by the World Health Organization, that pointed to an extraordinary rise in thy-

roid cancer among children in Belarus since 1986. They also have no alternative explanation for the finding by Canadian pediatrician R.K. Whyte that 320,000 excess neonatal deaths observed in the United States and United Kingdom after 1950 could be attributed only to bomb test radiation. And how else would they explain our recent discovery that the percentage of low birthweight live births rose by 70 percent in Nevada in 1951, when bomb tests were first shifted from the Pacific to the Nevada test site? They are scornful of the anomalous number of childhood leukemias found in the bomb test years by Sternglass, but ignore the support offered by V.E. Archer, published in the *Archives of Environmental Health* in 1987.

They summarily dismiss our chart showing a non-chance geographic correlation of recent breast cancer mortality rates and per-capita levels of airborne emissions of radioactive iodine and strontium from civilian reactors, which since 1970 amounts to a cumulative total of some 370 trillion picocuries.

We offered this chart at a recent breast cancer conference sponsored by Bella Abzug's New York City Commission on the Status of Women to show the importance of neglected environmental factors in accounting for the fearsome epidemic rise of breast cancer, particularly in New York and Connecticut suburban counties. We pointed to the possible link to unpublicized but massive emissions from reactors at Indian Point, New York, just north of the Bronx, and Millstone, Connecticut, on Long Island Sound, which far exceed comparable emissions from the Three Mile Island accident. As a result, the per capita levels of density of emissions in these counties are the highest in the nation. We suggested to the "unduly alarmed" members of the Long Island Breast Cancer Coalition that they seek independent measures of the radioactivity of Long Island well water.

For lack of space, my article omitted a chart showing a similar correlation of nuclear emissions to regional variations in our measures of immune deficiency among baby boomers aged 25 to 44, based on the anomalous deterioration, for the first time ever, of their mortality rates since 1983, which the Centers for Disease Control attributes to AIDS. Both charts document the accuracy of Sakharov's prediction of the lethal effects of ingested fission products on immune response, which is precisely what Chernousenko dared to reveal was behind the great wave of morbidity that accelerated the dissolution of the Soviet Union after 1986. We too suffer from similar ailments of deficient immune response.

Wilson's meanspirited disparagement of Chernousenko's radiation poisoning is belied by his acceptance of Chernousenko's estimate that 8,000 of his youthful fellow clean-up workers have died. This brave scientist, cast

(Continued on Page 752)

director has committed an error in seduction, of the sort he would never make in his acting. To seduce someone, you need to leave a little breathing space, even if your strategy is more aggressive than hard-to-get. Surely people are never really swept off their feet. Rather, they recognize the sweeping gesture and decide to yield, letting themselves fall back at the right moment into the proffered arm. Neglect to leave half a second's pause for the swoon, and you end up whacking your intended on the spine. That's what Branagh has done. Like an overeager lover, he went all-out in the opening moments of *Much Ado*, with the result that his too-pretty scenes don't make any room for the audience.

But that's the worst I can say about this *Much Ado*, which at its best reaches a level beyond criticism. It makes you marvel anew at Shakespeare. Go beyond the directorial infelicities and you find yourself caught up in a story in which people fake their way through love, through sex and even through death. The wise cannot find their way amid the deceptions piled on deceptions; only fools recognize the truth, and so everybody goes away laughing—the alternative being left for other plays to imagine.

The most dangerous film in captivity, *Man Bites Dog*, at last has begun a theatrical run in the United States. Though the fainthearted should avoid exposure, I gladly recommend the picture to anyone who wants to see how a premise may be taken too far *right from the beginning*.

Made in Belgium by the young team of Rémy Belvaux, André Bonzel and Benoît Poelvoorde, *Man Bites Dog* is a fake black-and-white documentary that pretends to show the daily life of a professional killer. Yes, the description I've given is factual. No, it doesn't convey anything. Though you may know perfectly well in advance what *Man Bites Dog* is about, the very first sequences overthrow a faculty as weak as mere understanding. *They can't do that!* the brain screams in disbelief. Oh yes they can. The only questions are, How much beyond too far can the filmmakers push their story? and, When will you stop laughing at it?

As Benoît, the very voluble, self-approving murderer, goes about his bloody rounds, you become aware of everyone around you in the audience. Sure, you all laughed when Benoît killed the old lady. Then a few of you fell silent when he wiped out a whole family in the suburbs.

Those quiet ones must be cowards, stick-in-the-muds, moralizing bores. But now Benoît has engaged the documentary-makers in a gang rape and disembowelment. *That's not funny*—so why are those people behind you laughing? They must not know where to draw the line!

Does anybody know where to draw the line?

When *Man Bites Dog* played last fall in the New York Film Festival, *The New York Times* called it "a nasty practical joke" that made the audience its victims. Possibly. But I'd say it victimizes people far less than does the critical and popular hit *Reservoir Dogs*, however far that film's advocates stretch their imaginations in its defense. Though it's a terrifically effective piece of filmmaking, *Reservoir Dogs* seems to me to be nothing *but* terrifically effective. There's a vacuum at its center. *Man Bites Dog* may be gross, offensive, show-offy. (May be? It is.) But it is not thoughtless; it is not slickly, wholeheartedly professional; nor (despite the charges of its more imaginative opponents) does the picture make a bugaboo of television. At the height of the carnage, in fact, Benoît sings a ditty in praise of cinema—as if he were its incarnate spirit.

Man Bites Dog is a film for people who know that movies are a guilty pleasure and who enjoy both ends of the bargain. □

EXCHANGE.

(Continued From Page 722)

out like Sakharov for telling the truth, had been invited by Petra Kelly to complete his book in Germany. At a Berlin conference three days before her untimely death, she asked for funds to support his continued work for the few remaining months of his life. The U.S. nuclear establishment, having consistently tried to deny compensation to American radiation victims, including our own atomic veterans, would presumably treat Chernousenko and the 8,000 workers in the same heartless way, not to speak of the millions whose lives have been shortened by the continuing nuclear cold war.

Jay M. Gould

CORRECTION

Due to an error in processing Katha Pollitt's "The Male Media's Hillary Problem" (May 17), an incorrect figure was given for the number of women who do not assume their husband's surname. According to a 1991 survey in *Bride's* magazine, the figure is 29 percent.

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