

PEER REVIEW

Letters from Readers

THE BODY ELECTRIC

I was pleased that W. Ross Adey, in his review of my book *The Body Electric* ["The Energy Around Us," January/February], allowed that I "may now stand on the brink of vindication" for my position on the health hazards of nonionizing electromagnetic radiation. Coming from one who has worked in this field for many years while maintaining a discreet silence on the subject, his words are praise indeed. But many other points in his review distort my book and my work.

He dismisses my claim, for example, that therapeutic use of pulsed electromagnetic radiation may be "nurturing the seeds of cancer." Whereas he would have the reader believe that I think these therapies can initiate cancer, clearly my point is that pulsed electromagnetic radiation can promote growth of a cancer that already exists, which is not the same thing.

Similarly, his statement that I "dismissed . . . on dubious grounds" reports of a "reduced cancer growth rate in animals after exposure to electromagnetic fields" is inaccurate. These reports are discussed at length in *The Body Electric*, and shown to be riddled with errors. To believe in them is to believe, as Mr. Adey apparently does, that a form of treatment that increases the growth rate of normal bone cells can at the same time decrease the growth rate of cancer cells. Such a notion needs to be backed up with responsible scientific evidence. The weight of evidence to date suggests that electromagnetic fields are not able to make such fine distinctions between cells.

Further, I have never proposed, as Mr. Adey claims, a ban on "relevant research" into the effects of electromagnetic radiation on cancer. My opposition is to the widespread *clinical* use of pulsed electromagnetic radiation therapy before the proper research has been completed. This is not a dogmatic rejection of the therapy's potential benefits but merely what I, as a physician, consider a prudent precaution to protect public health. Nor is this a trivial matter: many independent investigators have reported a significant increase in the growth rate of cancer cells exposed to a variety of electromagnetic fields, including sixty hertz—the frequency of the electric current coursing through household wiring. Research into

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this question is more than "relevant"; it is essential, and I support it.

Mr. Adey also accuses me of having been "busy looking in closets for conspirators," presumably because I made public in my book the machinations that led to the closing of my research program and because I suggested the direct involvement of powerful government agencies. The events I describe are well documented. Rather than take Mr. Adey's word, readers might judge for themselves whether my account conveys a "bitterness" that "taints this book" or simply exposes to public gaze an unpleasant aspect of doing science that relates to policy matters, particularly military policy matters. Mr. Adey's assurance that "no monolithic view [of the dangers posed by various high-power military communications systems] exists within the Department of Defense" is small comfort. Those of us in what he describes as the "pioneering bands of scientists" who established the importance of electromagnetism to the processes of life know only too well that the price for having one's research funded over the years was to keep one's mouth shut or to say only those things that were pleasing to the government. The public has a right to know that government money dominates science in this country and that the government's objective is not always truth or public safety.

There are also differences of scientific opinion between Mr. Adey and me, and they have found their way into his review. Mr. Adey believes that the only valid path of research in these issues is through cellular and molecular biology, "the electromagnetic 'whispering' among cells" detected in tissue cultures. I do not view the human organism as a collection of disparate whisperings but as an integrated whole. Any assessment of what is hazardous must be made with this holistic view of the human body in mind. One could spend years (and some have) listening for barely audible, *in vitro* whispers while significant hazards, affecting real human beings, are allowed to escalate without check. Let readers examine the evidence presented in my book before accepting Mr. Adey's statements that, when it comes to the potential hazards of electromagnetic fields, "the typical home is probably safe," "the majority of [microwave ovens] meet existing safety standards," and that "there is no evidence linking such household items as hair dryers and electric blankets to cancer."

Of course, readers may have some difficulty discerning Mr. Adey's position,

when one can find, in a single paragraph of his review, such conflicting remarks as "there can be no doubt about the essential nature of the effect of so-called nonionizing electromagnetic fields on the tissues of organisms" and "the lack of a broad and credible data base is indeed the nub of the problem." (The second statement is inconsistent not only with the first but with the facts as well. In June of 1984, the Environmental Protection Agency proposed a standard for public exposure to radio-frequency microwave fields based on a scientific data base. The EPA decided not to adopt the standard, which, by the way, was a hundred times lower than the one mentioned in Mr. Adey's review, because of its cost to industry—not for lack of information. In fact, since 1984, significant new data have turned up to support the EPA proposal.)

Mr. Adey's most egregious distortion may be his assurance that "despite unfavorable political winds, science will continue to unravel these problems." Left to the military-industrial combine cum scientific establishment, these problems will continue to proliferate while "studies," designed to come out negative or equivocal, provide the public with a false sense of security. I agree with Mr. Adey that "unbiased" investigations are necessary, but the record of this research clearly indicates that the chances for such work being funded are small. The growing hazards of electromagnetic fields will be evaluated responsibly and openly only when an informed and concerned citizenry demands that it be done. Until then, science will be controlled, information distorted or restricted, and the clear and present danger of electromagnetic energy will not be dealt with.

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