

an instinct for the representation and description of imaginary, or chimerical, dragons.

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Permissible Dose: A History of Radiation Protection in the Twentieth Century by J. Samuel Walker. Berkeley, CA: University of CA Press, 2000. xii + 168 pp. ISBN 0-520-22328-4.

This book is so biased that it does not even admit the possibility of benefits from low-dose radiation (radiation hormesis), which is one of the best established alternative treatments (Kauffman 2003).

As the historian of the US Nuclear Regulatory Commission (NRC), Walker probably wrote an accurate record of what the NRC, its peers, and its antecedents did to protect us from excess radiation. Moreover, the writing is outstandingly clear, perfectly edited, and well-organized, mainly chronologically, and has footnotes to sources that appear in the best academic tradition.

The NRC is to be congratulated on its successful protection of the public, except for accidental individual blunders in industrial or medical practice. It may feel proud of resisting the excessive demands of the EPA, John W. Gofman, MD, PhD, and self-styled environmental groups, and certainly did not cave in to the opposing demands of industry and medicine. The book's undesirable aspects are the rationalizations for the NRC's positions and recommendations.

One of the reasons for public panic about radiation is exemplified by this quotation: "... a radiological accident has no definite end; uncertainty about the long-term effects of exposure continues. Invisible contaminants remain a part of the surroundings ... An "all clear" is never sounded." Walker does not think the NRC bears any responsibility for the myth that all radiation exposures are risky, and thus has contributed to unfounded fears (p. 146) because eventually the level of exposure would be in the beneficial (hormetic) range until it dropped below even that. The linear no-threshold (LNT) extrapolation from high doses is justified throughout the book despite overwhelming evidence of its failure to account for observations (Kauffman 2003).

Of the hundreds of journal articles and books reporting or reviewing radiation hormesis (Luckey, 1991), not one is cited. Of the 4500 individual examples of hormesis (Hively, 2002), not one is cited. Of the dozens of reviews in peer-reviewed journals by respected scientists, specifically T. D. Luckey, E. J. Calabrese, B. L. Cohen, J. M. Cuttler, M. Pollycove, L. E. Feinendegen, K. L. Mossman, A. C. Upton, and S. Wolff, among others, not one is cited. After admitting only that "controversy" exists over the biological effects of low doses many times, Walker gives one token quotation based on newspaper and magazine articles by Myron Pollycove, and even this may have been

chosen because Pollycove was a consultant to the NRC. This was presented so as to marginalize it. Walker did not cite a single piece of evidence for hormesis (benefit), or even use either word, maintaining the fiction that the choices were between minor risk or no risk.

Another token, marginalized-by-context quotation was that of Theodore Rockwell, who complained that his colleagues (presumably including EPA and NRC) in the field of radiation protection failed to recognize the costs of excessive caution. "He suggested that the assumption that exposure to any amount of radiation might cause injury produced 'five different kinds of harm: billions of dollars wasted, ridiculous regulations imposed that degrade the credibility of science and government, destructive fear generated, detrimental health effects created, and environmental degradation accelerated'" (p. 155). Did Walker actually wish he could support this view?

Thus, it is clear to this reviewer that the NRC intends to perpetuate its fanatical defense of the LNT model by citation bias, marginalized quotations, and innuendo, an example of how not to do scientific or historical writing. How many innocent or ignorant readers of this book will be fooled?

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 Kauffman, J. M. (2003). Radiation Hormesis: Demonstrated, Deconstructed, Denied, Dismissed, and Some Implications for Public Policy. *Journal of Scientific Exploration* 17(3), 389–408.
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The Emperor of Scent: A Story of Perfume, Obsession, and the Last Mystery of the Senses by Chandler Burr. New York: Random House, 2002. 318 pp. \$24.95 (cloth). ISBN 0-375-50797-3.

This book is both wonderfully interesting and intensely irritating. Irritating because it is written breathlessly in florid verbiage, and factual accuracy sometimes goes by the board; interesting for its main story, about an iconoclast's battle with the Scientific Establishment. The protagonist, Luca Turin, is clearly more right than wrong, and the central substantive issue is itself fascinating: What is it about a substance, about a given molecular species, that determines its odor?

The conventional wisdom is that molecular shape determines what we smell: odor-producing molecules dock into smell receptors of just the right configuration, as with immune reactions or enzyme-substrate interactions.