***The Illusion of Certainty* by Erik Rifkin, PhD, and Edward Bouwer, PhD**

New York: Springer Science+Business Media, 2007. 244 pp., \$79.95 hardcover; \$29.95 paperback.

Reviewed by J. Willis Hurst, MD, MACP

It was a pleasure to review the book *The Illusion of Certainty*, by Erik Rifkin, PhD, and Edward Bouwer, PhD. A pleasure

I say—the real word should be *opportunity*.

I am not a scientist or a statistician. I am a questioning clinician, who teaches medical students, houseofficers, and fellows, who has sensed that we are all being asked to worship at the altar of cleverly crafted advertising and scientific jargon.

Earlier in the year one intern presented the history of a patient to me. He said, “This patient is a 38-year-old male who experienced retrosternal chest pain when he ran. The pain occurred four separate times during the previous week. The pain lasted about 2 minutes after he stopped running. The patient noted that the pain was also felt in his lower jaw and left elbow and that it recurred each time he ran.”

I asked, “What do you think is causing the pain?”

He replied, “I don’t know. The blood lipids are normal and he does not smoke. So coronary disease is not likely.”

I asked, “Where did you get that information? The risk factors associated with coronary atherosclerotic heart disease (CAHD) are only present in about 50% of the patients who have the condition!”

He answered, “We had several lectures during the year on the prevention of CAHD. They failed to make that point.”

“Well,” I responded, “your patient has classic unstable angina pectoris due to CAHD. The absence of risk factors should not deter you from making the diagnosis.”

The authors of this book have produced an excellent antidote to misleading advertising and lectures given by peripatetic lecturers.

The authors define their terms so that communication is clear. They write: “A risk factor is a biological condition, substance, or behavior that has an association with but has not been proven to cause an event or disease.”

“Absolute risk reduction (ARR) is the difference between absolute risks in two groups.” They point out that ARR is rarely provided to the public.

“Relative risk reduction (RRR) uses the ratio of two absolute risk numbers to measure how much risk is reduced in one group compared to another group.” The authors point out that RRR tends to distort the benefits to the patient and that ARR is needed to make decisions.

I asked four interns to define ARR and RRR. Each of the interns had graduated from a different medical school. None of them could define the terms. They were, I surmised, destined to be in the pocket of the pharmaceutical houses.

I was particularly impressed with the way the authors display risks. They make it easy to understand ARR by creating a diagram, called a Risk Characterization Theater, that seats 1000 people. They black out the number of seats that would be affected by ARR.

The authors are skilled communicators. They are highly respected environmental scientists. Rifkin is president of a consulting firm in Baltimore, and Bouwer is professor and chairman of the Department of Geography and Environmental Engineering at Johns Hopkins University. Their greatest skill is their ability to intertwine real-life situations into their message through case studies titled “Vioxx and Heart Attacks,” “Prostate Cancer Screening,” “Elevated Cholesterol: A Primary Risk Factor for Heart Disease,” “Statins, Cholesterol, and Coronary Heart Disease,” “Colorectal Cancer Screening,” “Health Effects of Smoking,” “Chlorination of Drinking Water and Health Risks,” “Exposure to Residential Radon and the Risk of Lung Cancer,” “Ecological Risk Assessment,” “Asian Oysters in the Chesapeake Bay,” and “Chromium and Sediment Toxicity.”

Finally, a chapter written by guest author Bob Sheff, MD, titled “The Physician and Patient in Perspective,” is a gem. He makes the following comment. “If the study you are reviewing shows a significant drop in absolute mortality, this is very helpful to you in assessing its significance. The problem with pharmaceutical companies advertising the effects of statins on cholesterol is that they are touting the wrong outcome.”

My comments should not be construed as opposing the elimination of known risk factors in our effort to reduce the development of CAHD. I strongly recommend the effort. I simply wish to stress, as the authors of the book stress, that we must not give the impression that the absence of known risk factors eliminates the development of CAHD. In addition, we must not imply that the rigid control of blood lipids and other known risk factors will *guarantee* the prevention of CAHD.

Much more research is needed in risk reduction, and we must use ARR rather than RRR to express the results of our research. Advertisers must also use ARR rather than RRR, or they are knowingly hoodwinking the public.

I view this book as I view Strunk’s little book, *The Elements of Style* (1). It should be read and reread, lest we slip and make a serious cognitive error.

1. Strunk W Jr, White EB. *The Elements of Style*. New York: Macmillan, 1959.

The reviewer, **J. Willis Hurst, MD, MACP**, is consultant to the Division of Cardiology at Emory University. He was chairman of the Department of Medicine at Emory for 30 years and is the author or editor of almost 400 scientific articles and over 60 books, including *The Heart*, widely considered to be the “bible” of cardiology.