

Book Reviews

Sapira's Art & Science of Bedside Diagnosis, 3rd ed., by Jane M. Orient, M.D., 723 pp, hardback, \$89.95, ISBN 0-7817-5731-2, Philadelphia, Pa., Lippincott Williams & Wilkins, 2005.

It is an uncommon textbook that can span the distance between neophyte and maestro. Nonetheless, this latest edition of *Sapira's Bedside Diagnosis* easily manages that stretch.

In not quite 700 text pages this volume covers the interview, detailed examination of each body part and system, and the clinical reasoning that makes sense of these data.

Orient is the editorial philosopher's stone, changing into gold what in some other texts is leaden prose. A subtle humor retains interest throughout the book. There is a photograph of the tomb of a voodoo queen, who grants miracles without knowing the issues, perhaps similar to physicians who grant diagnoses without knowing or examining the patient. Quotations from medical greats such as Ibn Sinna ("Avicenna") join those of Fats Waller, and each of these to a salient point. You can see a photograph of the actual zebra whose hoof beats are so often not heard.

This is a volume by and for scholars: those who are, and those who would be. Proffered mnemonics are not your usual acronyms; there is a fondness for etymology as a memory aid. Classical artworks are used in some illustrations.

Who could forget McBurney's point, having seen it drawn on Michaelangelo's statue of *David*? First heart sounds in Mobitz block are demonstrated with a musical score. An Ojibway Indian mask demonstrates classic Bell's palsy features. Historical tidbits staple items to the memory. Dupuytren, whose name has become connected to a specific type of finger contracture, had his hearse pulled to the cemetery by his devoted students.

This is no mere compendium of eponymic oddities competing for limited memory space. Careful attention is given to the likes of Bayes's theorem, likelihood ratios, and other clinical reasoning skills.

That said, the approach is appropriately qualitative, not quantitative. A generation of physicians spoiled by ready access to every scan and laboratory test known needs to return to bedside diagnosis to improve our use of such tests.

Third parties eager to keep more of the money are reining in physicians' financial enablements. When direct payment by patients is ultimately restored, we will crave the efficiency available through astute bedside diagnosis, and the patient will be the better for it. Why not begin now?

For the beginner there are flags in the margin to indicate emergent physical findings, and clinical pearls are marked with a stylized pearl. There are acres of tables and graphs. Want to know which of nine potential findings for ascites gives the most information? A table of likelihood ratios shows a variation from 2 to more than 9 for positive findings. Do earlobe creases really help predict coronary artery disease? Read and see.

Nonetheless, this is not an anthology of "decorticated checklists." This is about the bedside diagnosis of the medical condition of another person. Emphasis is placed on developing the patient's story, not on Balkanizing a patient into preformed categories suitable for framing in ICD-9 codes. The Weed "Problem-Oriented Medical Record" and the electronic medical record (EMR) both come under deserved criticism on this point. These methods trade away the elaboration of the patient's story for some gain in accessibility.

It is a poor swap. The EMR is primarily an audit tool, akin to an auto garage that has many engine parts laid out on the floor, neatly labeled. One may not know whether he is looking at the engine from a Porsche or a delivery van. The bankrupt concept of patient noncompliance is ruthlessly exposed as a way of turning the patient from a partner into an obstruction to the physician who is paid by someone else to apply an alien agenda to the patient.

Coverage of topics is fine-grained. Examination of the eye occupies 54 pages. (Perhaps syphilis should give place to the

eye as the thing to know in order to know medicine.) Events estimated to occur as infrequently as once in 30 years of specialty practice receive mention, though the book explicitly elevates the generalist physician mindset.

The writing and vocabulary are as exacting as the clinical methodology they describe. English grammar and vocabulary come off life support, leaping to lend their embedded logic and precision. Don't convict yourself by claiming that the patient is a "poor historian," since the historian is the one who records the story, not the one whose story it is. Purpura is the name of a condition, not a lesion.

Flaws are few and minor. There is reference to "the turn of the century," leaving one to suppose that 1901 is intended, not 2001. The dermatologic section would have been more excellent if its images could have been produced in color. A little less confidence in formal psychodynamics would have been welcome.

If you have become comfortable and rote in your history and examination, prepare to have your cage rattled. How much more is available when you engage rejuvenated analytical capacities to a more informed and detailed examination? Prepare to be humbled by what you do not know, or have never heard. Prepare to be irritated by what you know that is now proven to be false.

This is what a standard textbook should be—one that doesn't confound "standard" with dull uniformity, nor carries forward armloads of fossilized lore from past decades. Even the bones of Willie Sutton are demineralized and found to be—those of one George Dock.

You cannot help liking and benefitting from this book. Read a chapter a week and cover it twice in a year. In a year you will be a better, more efficient, more compassionate physician, but will in no way have exhausted the deposit of wisdom that is here.

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Guns and Violence (Current Controversies), edited by Laura K. Egendorf, 202 pp, hardback, \$34.95, ISBN 0737722061, Farmington Hills, Mich., Greenhaven Press, 2005.

Forty-nine percent of U.S. households have guns. In these 47.6 million households, half of those weapons are owned specifically for self-defense. But a gun is used in 70 percent of homicides and 60 percent of suicides, and death from firearms is the second leading cause of injury death.

Liberals contend that gun availability causes the violence, and insist that gun control is both justified and necessary to prevent it. They also view gun violence as a health-related crisis. Because liberals' ideas have led to disastrous results for so many domestic policy issues over the past several decades, a careful evaluation of their ideas on gun violence is valuable.

The 2005 issue of *Guns and Violence (Current Controversies)*, presents the liberal and conservative viewpoints so they easily can be compared. The introduction, the chapter overviews, and the prefaces are biased toward the liberal viewpoint, but this does not detract from the book's effectiveness. Four questions are examined: (1) Is gun violence a serious problem? (2) Can government measures reduce it? (3) Is gun control constitutional? (4) Is gun ownership an effective means of self-defense?

At least three authors from each side discuss each of these four questions. Liberal authors include Bill Clinton and writers from the Progressive Policy Institute, the Brady Campaign to Prevent Gun Violence, the Million Mom March, and the Harvard Injury Control Research Center. Conservative authors include Dr. Miguel Faria, Massad Ayoob (author of *In the Gravest Extreme: The Role of the Firearm in Personal Protection*), Dave Koppel, Robert A. Levy of the Cato Institute, Gary Lantz of the National Rifle Association, and Gary Kleck of Florida State University's School of Crime and Criminal Justice.

The facts appear to be entirely different depending on who presents them. According to liberals, the Second Amendment clearly results in extraordinary social costs. For them, firearms are lethal weapons that can escalate "often-impulsive" acts. They worry that, "once a bullet leaves a gun, who is to say that it will stop only a criminal and not a family member?"

They note that the mortality rate from gun violence is similar to that from the human immunodeficiency virus (HIV), which is recognized by the Centers for Disease Control and Prevention (CDC) as an epidemic. In the United States, gun mortality is more than twice that of the next highest of the industrialized countries. It costs as much as \$100 billion each year, and it disproportionately affects young people, as the second leading cause of death among youth age 10 to 19. Its root causes are poverty, unemployment, stress, fear, and racial and income inequality. Finally, liberals note that since "sensible and effective" policies have made motor vehicles safer, health policies should be able to do the same for firearm violence, and the federal government should develop a strategy to accomplish this.

Liberals believe that the Constitution is a "living and changing" document, any part of which can be discarded at will, and that rights are never absolute. Over the past 200 years, the states, the federal government, and the people have all changed. Liberals believe that since the individual is primarily a member of the collective, the Second Amendment only guarantees a collective right. They claim the Founding Fathers guaranteed individuals the right to own guns because our citizens are arms of the government, and the citizens have a duty to protect their government. But they worry about how order can be maintained in a "democratic republic" when so many people have been invited to share in the power of the state—that is, allowed to own guns.

The conservative authors see the problem differently. For them, the policy of keeping guns away from criminals by disarming responsible citizens is another failed liberal idea that only worsens the problem it purports to solve. Almost all gun violence is perpetuated by a very small group of criminals using illegal guns, while more than 99 percent of firearms never are used illegally. Outlawing guns to prevent violence would be like outlawing speech or printing presses in order to prevent libel.

Conservatives maintain that firearm availability to responsible citizens will not make them criminals, but conversely, that an armed citizenry is a powerful deterrent to violent crime. Private citizens use guns defensively 3.6 million times per year; one million of these episodes occur in the home. In 98 percent of the instances, the owner only brandishes the weapon without using it. Guns save 25-75 lives for every life lost, and the medical costs saved outweigh by 15 times those incurred by criminals.

Thirty-two states now have concealed carry laws. In 1987 Florida passed the first, when its murder rate was 36 percent higher than the national average. Over the next four years the rate declined to 4 percent below the national average. Since then the national homicide rate has risen by 12 percent, while Florida's has decreased by 21 percent. If all states without them had adopted these laws in 1992, more than 1,500 murders, 4,000 rapes, and 60,000 aggravated assaults would have been avoided each year. Concealed carry laws have cut the death rate from mass shootings in public places by 69 percent. Partly because of these laws, the murder rate now is at a 30-year low.

In addition, firearm accident rates, including those for children, have steadily decreased since 1900, and have decreased even more rapidly since 1975. School violence and school shootings are extremely rare and declining. Children age 14 to 15 are 14 times more likely to die from automobile accidents, five times more likely to die from drowning or fire, and three times more likely to die from bicycle accidents. Fewer school children are killed by violence than by lightning strikes.

In 1979, the public health establishment, adopting liberal ideas, promulgated a gun control agenda that included the complete eradication of handguns in America, with a 25 percent reduction to be attained by the year 2000. Over the following decade, hundreds of biased, misleading research articles, funded by taxpayers, were published in medical journals. The most notorious example is that of Dr. Arthur Kellermann, who currently heads the Emory University School of Public Health. In 1986 and in 1993 he published articles in the *New England Journal of Medicine* purporting to show that guns in the home are a greater risk for family members than for the assailants. These articles have been thoroughly discredited, though gun control advocates continue to cite them.

Gun ownership as an individual right depends on interpretation of the Second Amendment. There are three main interpretations: (1) the Standard Model, i.e. that it is an individual right; (2) the states' rights view that it belongs to state governments; and (3) the collective view that it belongs to all the people, but only can be exercised by the government.

Unfortunately, virtually the entire legal establishment asserts that the Second Amendment protects the right of state governments to maintain military organi-

zations. But the nation's leading legal and Constitutional scholars, as well as past Supreme Court decisions, support the Standard Model. Since 1980, for example, 35 of 39 law review articles affirm the Supreme Court's recognition of gun ownership as an individual right. Employees of the gun control lobby wrote three of the remaining four articles, which support a collective right.

Guns and Violence exposes one small part of the liberal agenda to kill America's identity and our national culture. As David Horowitz points out, liberals lie to all—especially to themselves—and they are determined to regulate and control people's lives and to redistribute their income.¹ Their religiously utopian delusions are too powerful for any amount of reason to kill. If they really were concerned about crime and violence, liberals would insist that all states institute concealed carry laws.

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1 Horowitz D. *Left Illusions—An Intellectual Odyssey*. Dallas, Tex.: Spence; 2003.

The Tipping Point—How Little Things Can Make a Big Difference, by Malcolm Gladwell, 288 pp, hardback, \$25.95, ISBN 0316316962, New York–Boston, Little, Brown, 2000. Also available as Time Warner AudioBook, three CDs, three hours, \$24, read by the author.

The Tipping Point is a book about change and presents a new way of understanding why change so often happens quickly and unexpectedly.

Gladwell says that the best way to understand the emergence of fashion trends, the ebb and flow of crime waves, the transformation of unknown books into bestsellers, the rise of teenage smoking, or any number of mysterious changes that mark everyday life, is to think of them as epidemics. He says that ideas and products and messages and behaviors spread in the way that viruses do. The three rules of *The Tipping Point*—the Law of the Few, the Stickiness Factor, and the Power of Context—offer a way of making sense of such epidemics. Gladwell gives us a number of examples.

Hush Puppies, the classic American brushed-suede shoe with the lightweight crepe sole, was all but dead in late 1994. Sales were down to 30,000 pairs per year. Wolverine, the manufacturer, considered

phasing out the shoes that made them famous. But then something strange happened. At a fashion shoot, two Hush Puppies executives were told that the classic shoe had suddenly become hip in the clubs and bars of downtown Manhattan.

By the fall of 1995, things began to happen in a rush. Designers called wanting to use Hush Puppies in their spring collections. In 1995, the company sold 430,000 pairs, and the next year four times that. Hush Puppies were once again a staple of the wardrobe of the “young American male.”

Hush Puppies had suddenly exploded, and it all started with a handful of kids in the East Village and SoHo, who were wearing them precisely because no one else would wear them. Then the fad spread. No one was trying to make Hush Puppies a trend, but that's what happened. The shoes passed a certain point in popularity, and they tipped.

Gladwell analyzes the gradual rise of New York crime over decades until the mid-1990s as the Power of Context, previously known as the “Broken Window” theory. Huge crime fighting efforts were unsuccessful in changing its course. But then something strange happened. At some mysterious and critical point, the crime rate began to turn. It tipped. Within five years, murders had dropped 64.3 percent and total crimes had fallen by almost half. The decline in crime was anything but gradual. Something else clearly played a role in reversing New York's crime epidemic.

In this context, Gladwell uses the story of Bernhard Goetz and his shooting of four thugs who accosted him on the subway. As he put a bullet through each and started to leave, the fourth was screaming, and Goetz walked over to him and said, “You seem all right. Here's another,” before firing his fifth bullet into Darrell Cabey's spinal cord and paralyzing him for life. He epitomized the peak of the epidemic of crime in New York City. Newspapers and talk radio made him a hero, and he was found innocent of a felony.

When William Bratton was brought in as the new head of the transit police, he decided to implement the “Broken Window” theory. If a window is broken and not repaired, people walking by will conclude that no one cares and no one is in charge. Soon, more windows will be broken, and anarchy will spread.

With felonies in the subway system at an all-time high, Bratton decided to crack down on fare-beating. First, he picked stations where fare-beating was the biggest problem, and put as many as 10 plainclothes policemen at the turnstiles. The team would

nab fare-beaters one by one, handcuff them, and leave them standing, in a daisy chain, on the platform until they had a “full catch.” The idea was to signal, as publicly as possible, that the transit police were now serious about cracking down on fare-beaters. Bratton also insisted that a check be run on all those arrested.

Sure enough, one out of seven arrestees had an outstanding warrant for a previous crime, and one out of 20 was carrying some kind of weapon. Suddenly it wasn't hard to convince police officers that tackling fare-beating made sense.

“For the cops it was a bonanza,” Bratton writes. “Every arrest was like opening a box of Cracker Jacks. What kind of toy am I going to get? Got a gun? Got a knife? Got a warrant? Do we have a murderer here? A precipitous drop in crime was brought about by enforcing a \$1.75 fare—and, among other things, laws against graffiti—and crime tipped.

Paul Revere's legendary midnight ride exemplifies the Law of the Few. On the afternoon of April 18, 1775, a young boy who worked at a livery stable in Boston overheard one British army officer say to another something about “hell to pay tomorrow.” The stable boy ran with the news to Boston's North End, to a silversmith named Paul Revere.

Revere listened gravely; this was not the first rumor to come his way that day. As the afternoon wore on, Revere and his close friend Joseph Warren became more and more convinced that the British were about to make a major move that had long been rumored: that they were to march to the town of Lexington, arrest colonial leaders John Hancock and Samuel Adams, and proceed to the town of Concord to seize the stores of guns and ammunition that some of the colonial militia had stored there.

That night at 10 p.m., Warren and Revere met and decided they had to warn the communities surrounding Boston Harbor. At midnight Revere jumped on a horse at the ferry landing at Charlestown and began his ride to Lexington, knocking on doors and telling the people to spread the word that “the British are coming.” Each person in turn spread the word to others like a virus, until alarms were going off throughout the region.

When the British began their march toward Lexington on the morning of April 19, their foray into the countryside was met, to their utter astonishment, with organized and fierce resistance, and they were soundly beaten. From that exchange came the war known as the American Revolution.

Gladwell considers Paul Revere's ride as perhaps the most famous historical example of a word-of-mouth epidemic, and it started the greatest experiment in personal freedom and limited government ever unleashed on earth.

These three characteristics: one, contagiousness; two, the fact that little causes can have big effects; and three, that change happens not gradually but at one dramatic moment, are the same three principles that define how measles moves through a grade-school classroom, or how the flu attacks every winter.

We have been introduced to the failed system of socialism under the guise of managed care or single-payer initiatives—systems that are experiencing huge financial and quality problems throughout the world. As physicians, we should employ the viral-like method used by Paul Revere. Instead of the simple message “the British are coming,” the alarm that prevented the assault on the greatest experiment in freedom experienced by humankind, our alarm should be, “the Socialists are coming, the Socialists are coming!”

As it spreads like an epidemic to the masses, we may be able to watch the rising tide of socialism dramatically tip. We could then proceed, without harassment, to continue our development of the world's finest medicine for our patients.

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Intellectual Morons: How Ideology Makes Smart People Fall for Stupid Ideas, by Daniel J. Flynn, 304 pp, hardback, \$25.95, ISBN 1400053552, New York, N.Y., Crown Forum, 2004.

This reviewer has pondered that question a number of times, having fallen for a stupid idea once or twice. So, having been asked to review this book, I decided to write a short answer, which is, first, that those who believe in the principle of live and let live do not zealously force ideas on anyone, but those who thirst for power over others do attempt to force their ideas on others. The latter usually have stupid ideas, or they would not require force for their spread.

Powerseekers must exert effort, so they spread their ideas energetically, and since humans are social animals, a herd mentality takes over, in which those who prefer to live and let live remain supine even in the face of the spread of stupid ideas. Additionally,

many stupid ideas on the surface seem plausible, and because it takes work to examine and criticize ideas, stupid ideas take root easily.

Daniel J. Flynn fingers ideology as the reason smart people fall for stupid ideas. In the book, he conducts a masterful exposé of a number of stupid, harmful, even death-dealing ideas, which may yet destroy civilization. Even so, much more remains to be examined. For example, what creates the nidus of infection that allows an ideology to exist, protected from assault by a mental criticism that might be likened to the immune system? Does raising children without providing real-world consequences for their actions play a role?

Why, after falling for stupid ideas, do people cling to them instead of discarding them? Why are ideologues not ridiculed and hounded? Has there been a change over time in the problem of people falling for stupid ideas? Does mass communication play a role? Are there geographic differences?

What ails the originators of ideologies? Why is the ideology such an *idée fixe*? Why are intellectuals so prone to stupid ideas that the ordinary citizen often rejects without hesitation? What mental quality separates the true believer from the skeptic? Why do people choose an ideology as their guide?

In short, underlying the noxious weeds of ideology are root systems, disturbances in the surrounding mental ecology that allow the weeds to emerge and flourish, and necessary nutrients that allow them to bloom like an outbreak of Red Tide. Possibly some of the answers lie partially in human neurobiology, but lest some think this a determinist screed, the primary function of the brain remains to keep us alive by alerting us to dangers, including those within ourselves and our fellows, in the realm of psychology.

Ideology leads to stupid ideas, but ideologies themselves, despite, as the author points out, the fact that they may contain a laudable idea as their core, seem to encrypt within themselves various stupid ideas: for example, that any idea in human affairs can be the entire solution to any problem; or that inconsistency and exceptions cannot coexist with a good idea; or that any idea, any abstraction, when applied to the real world of humans and their affairs, can function without a requirement for feedback to see whether it works.

The first chapter deals with the true believer who has succumbed to ideology, thereby putting his brain on autopilot. So we start at a point where someone has

already created an ideology, and the intellectual morons have already succumbed to it. Why does this happen? Is it laziness, a lust for power, obsessive behavior, anxiety about uncertainty, or some combination of these, with or without other factors? We need to know.

The chapter gives us an important orientation, pointing out that for intellectual morons, intentions matter more than outcomes (lack of a feedback system is my diagnosis for that). Ideologues are prone to mistaking their ideal for the real, and to not realizing that what never fails inside the mind of an intellectual, never works outside the confines of his head. Tolerance for the failed idea rarely wanes, but tolerance for the humans invariably does. Flynn alerts everyone to the need to suspect anything that demands human sacrifice (not necessarily only of life). He warns us about gurus, the founders and popularizers of theoretical systems. Stress the word “theoretical” here; the gurus are not empiricists. They and their moronic followers are arrogant, a result of being praised and singled out all their lives for their smarts.

With this introduction to the true believer, Flynn introduces us to the generals leading armies of true believers in modern-day America, and leads us on a truly hair-raising journey. Many well-read members of the audience have encountered some of these sinister eminences, but even the most widely traveled person may avoid slums; there is much we can and must learn about our civilization's enemies, and this book takes us to their filthy lairs.

Herbert Marcuse, Alfred Kinsey, Paul Ehrlich, Peter Singer, Rigoberta Menchu and her props, Howard Zinn, Noam Chomsky, Gore Vidal, Leo Strauss, Margaret Sanger, W.E.B. Du Bois, Alger Hiss and the Roosevelt Communists, Ayn Rand, Betty Friedan, Jacques Derrida, and Michel Foucault populate the pages of this book in succeeding chapters. Familiarity with their original works will very much enrich your reading of this book, but there are plenty of quotations and incisive analysis for those not familiar with these people. A bibliography would have been nice, but that is a minor point; the notes are very good, and include critical scholarship.

The author has a delightfully dry, wicked sense of humor that had me laughing, especially in the sections on Ehrlich, Strauss, and Chomsky. Of course, he had some ripe material to ridicule. There is nothing funny in the evolution of the ideologues treated here, but ridicule may be one of the best weapons against them.

The author shows that Peter Singer attempts to transform moral questions into mathematical ones. Singer says that newborns cannot see themselves as entities with a future, and so they cannot have any preferences about their future existence. He seems to think he can predict the future: that if killing a baby leads to happiness of a greater number of people than allowing it to live, it should be killed. Singer disregards his own inability to have any preferences about his future when he was an infant, although that state seems to characterize all infants.

Flynn provides a number of lucid comments throughout the book that serve to organize thought in a useful way. For example, Marcuse divorced Marxism from its association with economics and applied its tenets to victim categories. He created a theoretical framework that endorsed double standards and separated words from their meanings. Flynn does some digging up of obscure facts, such as the Nazi-like ideas of Sanger, which he says were left out of six biographies.

I would say Flynn is in error in disparaging a right to privacy. The Ninth Amendment would cover a right to privacy; what must be pointed out is that abortion is not a privacy issue, any more than spousal murder would be a marital or privacy issue. He points out the inevitability of the road to "Eden on Earth" being detoured to "Hell," with examples from Singer and Sanger.

Louisiana demagogue Huey Long is quoted as saying that if fascism ever came to America, it would come by calling itself anti-fascism. Flynn gives us a clear definition of "deconstruction": "Deconstructive criticism aims to show that any text inevitably undermines its own claims to have a determinative meaning, and licenses the reader to produce his own meanings out of it by an activity of semantic 'freeplay.'"

These are only a tiny sample of the gems in this well-written, well-researched, logical book. I highly recommend that you obtain a copy and study it.

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Under-Exposed: What If Radiation Is Actually GOOD for You? by Ed Hiserodt, 247 pp, paperback, \$14.95, ISBN 0930 073355, Little Rock, Ark., Laissez-Faire Books, 2005.

The linear no-threshold (LNT) hypothesis for radiation carcinogenesis could be the costliest error in the history of science.

It was invented by Linus Pauling to win the debate with Edward Teller on banning atmospheric testing of nuclear weapons, according to Pauling's long-time close collaborator Arthur B. Robinson (personal communication). It uses the concept of collective dose to calculate huge numbers of casualties from tiny exposures. By the same reasoning, if 1,000 aspirin tablets will kill one man who takes them all, one death will also occur as a result of 1,000 men each taking a single aspirin.

Hiserodt demolishes the LNT in this brief, lucid book. Though written for the lay public in a chatty, colloquial style, the technical exposition is solid and footnoted, and it will not insult the intelligence of physicians.

Radiation, like many (if not most) chemicals, exhibits a biphasic dose-response curve, also called hormesis. While high doses of radiation are lethal, doses within a certain low range have a nonspecific stimulatory effect on the organism, enhancing growth, immune response, or DNA repair mechanisms.

Hiserodt reviews the most important animal and human data, with clear charts and graphs showing findings that will astonish those indoctrinated in the belief that any dose of radiation is harmful.

Among A-bomb survivors, longevity was increased at low-to-intermediate doses (1-199 rads). Mortality in American weapons plant workers was significantly *less* than expected. Nuclear shipyard workers exposed to radiation had lower all-cause and cancer mortality than their non-exposed counterparts. The actual evidence is consistent and convincing, as long as one looks at the data itself, and not the conclusion that prestigious committees draw for the abstracts.

The Environmental Protection Agency's campaign to reduce indoor radon exposure is based primarily on data from uranium miners, who do indeed have a higher risk of lung cancer. However, the potential role of other factors present in uranium mines, such as particulates and fumes from diesel engines, was never considered. The cancers are deep in the lungs, like those of South African miners exposed to amphibole-type asbestos, rather than concentrated in the bronchial epithelium as would be expected.

A multimillion-dollar, 5-year effort to demonstrate the harm caused by radon levels found in homes, however, showed a highly significant protective effect. Bernard Cohen wrote: "It came as a great shock to

me that my data ran contrary to LNT, and I didn't fully believe it until about 1993—when I shut off the \$1,200 radon reduction system in my house to save electricity." But it didn't make the news, and bureaucrats and health physicists—who have a vested interest in overzealous radiation protection—appear to pretend that the data either don't exist, or can be explained away. If radon were recognized as "Vitamin R," a lot of regulators would be looking for another job.

While the LNT-predicted radiation casualties are purely hypothetical, the deaths caused by belief in the LNT assumption are tragically real. After the Chernobyl accident, between 100,000 and 200,000 babies were aborted in Europe because their mothers believed they might be carrying a "nuclear monster." The actual dose from Chernobyl was about 1.4 SXR in Greece, and 0.5 in France: the SXR being a Hiserodt-coined unit for the dose received from one "shoe x-ray" in the days when good shoe stores had a fluoroscope to check the fit of the shoes. One could also receive 1.4 SXR from residing in Colorado instead of Texas for about 19 months.

Hiserodt includes a fascinating discussion of benefits that we have forgone because of misunderstanding radiation: the plutonium-powered pacemaker that never needs a battery change; a car that could conceivably get 5 million miles to the pound of plutonium; and small, intrinsically safe nuclear power generating stations. Promising medical benefits blocked by the LNT include low-dose radiation for cancer prevention, and even treatment; potential cure of rapidly lethal infections such as gangrene; and relief of conditions such as arthritis.

Reasons to keep this book on the reference shelf include its clear explanation of dose units; its tables of exposures from sources such as power reactors, your own blood, or jet flight; the specific activities of dangerous substances like salad oil and whisky; and the table on the manifestations of acute radiation syndrome. Even if you don't need the chapter on remedial nuclear physics, you'll probably learn something about what goes on in a nuclear reactor.

This is a good book to give to nervous patients, students, teachers, physics-challenged reporters, and public officials. But do keep one for yourself.

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