

The Innumerate's Hysteria du Jour

Book Review by John F. Rohe

What are salient risks for the obese smoker driving while impaired suffering from anxiety over news reports on West Nile virus? Or for the caring parent storing a loaded rifle in an unlocked case who writes the school board demanding seat belts on school buses?

Answer: The risk of harm by West Nile virus is dwarfed by obesity, smoking, and impaired driving. Seat belts on school buses, unless designed for the specific size and weight of the occupant, create a greater risk of harm than no seatbelts at all.

Authors David Ropeik and George Gray, through the Harvard Center for Risk Analysis, describe two components of risk: Likelihood of harm and the anticipated consequences. Both components must be considered in assessing any risk. Coffee, for example, offers a strong likelihood of affecting the consumer, but the consequences, such as insomnia, are not to be feared when studying for an exam.

Innumeracy is the mathematical equivalent of illiteracy. Its symptoms include the inability to assess risks with clarity. Casino gambling, it is said, is just a form of discrimination against people with poor math skills. Inattention in math class exacts a hefty toll beyond the remote odds at a slot machine. Persons unable to assess risks are more likely to offer the supreme sacrifice for innumeracy.

Our lives can be seen as one continuous algorithm – a series of encounters with risks of variable likelihood and consequence. Most risks are assumed without hesitation. We cross the street to visit a friend oblivious

to the risk. Other risks, like the West Nile virus disease, breed anxiety even while presenting a much lower threat.

The newsworthiness of harm becomes a more relevant threat for the innumerate. When a commercial jetliner tumbles from the sky, the pictures are captivating. The graphic art of journalism enjoys prosperity through voyeurism. Yet, the lifetime risk of death by motor vehicle is 443 times greater than a fatality by jetliner disaster.

Some risks are worth fretting about. Others sell newspapers.

We bring a limited lifetime supply of emotional capital to the task of parenting. How one elects to allocate this lifetime reserve is a function of how risks are assessed.

Risks of high likelihood and severity are no secret, like smoking or alcohol abuse, particularly while pregnant. But these risks lack the poignancy of a jetliner crash. Their victims are generally not memorialized in color photographs among the news headlines. Rather,

they are muted in the obituary column. In a perverse twist of fate, victims of innumeracy can even be driven to such high risk activities as smoking or drinking, brought on by dramatic news reports of such low risk drama as jetliner crashes.

Mortimer Adler once identified the most important question in life as: "How shall we live?" The answer to this question depends on how we assess relevant risks. It invokes the practical application of math skills to daily life. The risks in this study by Ropeik and Gray include, for example: firearms, genetically modified food, motor vehicles, indoor air pollution, outdoor air pollution, biological weapons, carbon monoxide, DDT, diesel emissions, environmental hormones, hazardous waste, incinerators, lead, mercury, nuclear power, ozone depletion, pesticides, radiation, cancer heart disease,

Risk: A Practical Guide for Deciding What's Really Safe and What's Really Dangerous in the World Around You
by David Ropeik and George Gray
New York: Houghton Mifflin
485 pages, \$16.00



John F. Rohe is an attorney practicing in Petoskey, Michigan

HIV, medical errors, and vaccines.

However, a leading risk eludes the authors of this 485-page book. They examine separate risks in painstaking detail. Thus, diesel emission risks become distinct from the risk of wind-born particulates. The likelihood and consequences of both smog and air toxins are found to be in the “low” risk rating. The process of separating greenhouse gas risks from other industrial hazards might be of academic interest at Harvard, however, in isolation, each risk obscures the more prevalent risk confronting the reader, namely: the constant increase in the sheer numbers of people.

By slicing and dicing each separate risk, the authors divert attention from that more pressing risk. The audience of this book is not offered information on the cumulative risk of population pressures. Most risks in this book are driven by a “multiplier,” namely, the number of people. There is little risk of deadly smog for the isolated hermit living on the frontier. Population pressures account for pollution, toxins, chemicals, ozone depletion, etc., etc.

Sadly, this book offers no insight on the big picture. By fixing on each finite, compartmentalized risk, the book offers a level of precision for the meticulous risk shopper; to inhale tailpipe carbon monoxide emissions or to breathe sulphuric vapor. When risk analysis on each threat becomes an exact science, innumeracy is perpetuated, not resolved. The cumulative threats of the multiplier are not mentioned or analyzed.

Readers are offered no guidance on how to determine an optimum population in minimizing cumulative risks now and in the future. The informed, numerate, risk assessor would want to enter cumulative risks to their calculations. The risk of becoming an uncaring ancestor resides beyond the scope of numeracy in this book.

The public policy implications of cumulative risks in the big picture tend to dwarf fragmented risks. Further information on the big picture risk is needed for an informed electorate in our continuing experiment of self-governance. This calculus, regretfully, is not to be found here. •