

## Let's Get Real About Risk

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Hundreds of thousands of Americans will die this year, deaths that can be prevented. Millions will get sick with preventable illnesses. Billions of dollars and countless hours of human effort will be wasted unnecessarily--all because we are afraid of the wrong things.

In a frenzy of fear we are pouring millions this summer into protecting ourselves from the West Nile virus, and spending only a fraction of that sum on public education encouraging people to wash their hands, which would eliminate far more disease transmission than killing every mosquito in America.

Public and private spending on the cleanup of hazardous waste in America is estimated at \$30 billion a year. Hazardous waste is a real problem, but the number of people whose health is at risk because of it is actually quite low. Compare that \$30 billion with only \$500 million a year on programs to reduce smoking, one of the leading preventable causes of death in America.

Or consider the Boston suburb where parents were so terrified that a chemical was in the air of just one room in their children's elementary school that they pressured the town school board to close the school at midyear. As a result, 6- to 11-year-old children who had nearly all been able to walk to school were put on buses and sent on snow-covered streets through rush-hour traffic to classrooms in the local high school. All this, even though the chemical (a solvent used in a nearby plant) was present at levels of under 10 parts per billion--well within safety limits--and the most cautious public health experts, hired by the parents, said that putting a fan in the window was all that was needed to make the air in the school safe.

We could make decisions that are more rational and informed. In many areas, science can identify the physical hazards, tell us how many people are likely to be affected by each one, what various mitigations will cost and how effective we can expect them to be. We can rank risks and remedies and put things in perspective. But we don't. Instead, we make policy based more on fear than fact.

Let's be blunt. This irrational response kills people. In a world of finite resources, we can only protect ourselves from so many things. If we overspend on risks such as pesticides or asbestos, which are real but of relatively low magnitude, we have less to spend on greater threats such as bacterial food poisoning or fossil fuel emissions. As a result, thousands of the people exposed to those higher risks will die.

The usual suspects blamed for bad policy are politics, greed, the media, even the open, manipulable nature of democracy itself. True, these are all factors in a process that often becomes a battle between competing private agendas rather than an informed search for policies that will serve the greatest common good. But the principal underlying cause of wasteful choices that seek protection from the wrong bogeymen is fear.

By definition, fear is more emotional than rational. We fear before we think. Cognitive scientist Joseph LeDoux of New York University identified neural pathways that send information about possible hazards to the amygdala, the fear response center in the ancient core of the brain, before the same information is sent to the cortex, the newer, thinking, rational part of the brain. A hiker who comes upon a shape on the ground that could be either a snake or a stick jumps out of the way immediately--even while another part of his or her brain is trying to think rationally about which one it is.

But society, with limited resources, must be more rational than that. When individual fears become group fears, and when those groups, organized or not, become big enough or visible enough to put pressure on the government to provide protection from less dangerous threats, we can end up with policies that leave a lot of people in the way of harm from higher risks that we're doing less about.

It turns out there are some universal perception factors, identified by social psychologist Paul Slovic and others, that make many of us afraid of the same things and thus tend to turn individual fears into group fears that then foster irrational government policy. Among them are:

**CONTROL VS. NO CONTROL** You normally feel in control when you drive. Not so when you are an airplane passenger bumping through turbulence at 30,000 feet. When you feel you have control, you are less afraid.

**IMMEDIATE/CATASTROPHIC VS. CHRONIC** We tend to be more afraid of what can kill a lot of us suddenly and violently, like a plane crash, than, say, lung cancer, which causes hundreds of thousands more deaths, but one at a time, over time.

**NATURAL VS. HUMAN-MADE** We're less afraid of radiation from the sun than of the radiation from power lines and cell phone towers. The risk from the sun is immensely greater, but no matter. Those power lines and cell phones are human-made. This one helps explain widespread fear of new technology and chemicals.

**RISK VS. BENEFIT** Medicines often have dangerous side effects, but the more we perceive a benefit from the drug, the less we fear its risks.

**IMPOSED VS. VOLUNTARY** Nonsmokers are often fearful of tobacco smoke. Smokers usually aren't.

**TRUST VS. DISTRUST** Experts in the field say this is often the most important risk perception factor, the fulcrum on which the whole seesaw of risk perception rests. If we trust the people informing us about a risk, and if we accept and trust that risk policies are determined in an open and reasonable process, our fears subside. If we don't trust the information or the process, our fears rise, as the Pentagon has discovered in the suspicious response of a few service members to its anthrax vaccination program.

So how do we make policymaking more rational? With a governmental process poisoned by selfish partisanship, often hostage to the influence of money and special interests, and spineless in the face of the latest media-fed fear frenzy, how can we get political leaders and government agencies to make wiser choices and protect us better? There is a model.

Some years ago, the Environmental Protection Agency and the automobile industry declared something of a truce in their war over the science of automobile emissions. Instead of each side spending millions on self-funded research the other side wouldn't accept, they each put in 50 percent of the money necessary--a total of \$6 million--to create something called the Health Effects Institute. HEI was not created to make policy, but to give policymakers credible, trustworthy scientific information on which rational policy could be based. It was set up to be an impartial scientific review board--an agency of neutral arbiters, outside the government, beholden to nothing but the truth. To conduct its evaluations, it appoints panels of scientists, representing their various fields somewhat as a jury represents the community in a trial, so that no one with an ax to grind can control the process.

HEI's success and influence are growing. All the combatants in the air pollution fight, for example, have looked to HEI for "the" scientific opinion on the seriousness of particulate pollution.

Why not create such an independent, nongovernmental agency--let's call it the Risk Analysis Institute--to provide us with credible, trustworthy guidance on risks? The institute would rank the hazards we face, so we would know which ones are the most likely to occur; classify risks according to which ones have the most serious consequences; and conduct cost-benefit studies to help us rank mitigation choices by cost and effectiveness, so we would know which options will maximize resources to protect the most people.

In addition, it would identify the range of remaining uncertainties. The institute's analysts would also compare the policies of various agencies, to warn when a policy that reduces risk in one arena might increase it in another. For example, federal government standards to increase fuel efficiency reduce pollution, but encourage smaller, lighter vehicles, which are more fuel-efficient but more dangerous for passengers.

Supreme Court Justice Stephen Breyer suggested something like this in his 1993 book "Breaking the Vicious Circle" (written before his appointment to the high court). He proposed "a small centralized administrative group, charged with a rationalizing mission" within government. But bear in mind that trust is perhaps the most important of all the risk perception factors. An agency of government could not establish that trust.

An institute outside government might. To that end, it should have as much freedom as possible from the influence of politics, real or perceived. Its funding should come without strings, ideally from a mix of sources with competing agendas but willing to invest in credible, sound science. Funds should also be guaranteed, so no contributor can influence outcomes by threatening to cut off the cash. And its scientific work would have to be carried out by professionals who are chosen for their education and training, their expertise and reputations for integrity, neutrality and open-mindedness, not for who their political friends are.

Setting up the institute outside the government would serve another important goal: Final policymaking decisions would still be made by government agencies, preserving citizens' ability to voice their concerns and use the political process to help shape the outcome.

That means that lobbyists, politics, the media and money would also still have influence. The messy process of policymaking would not change dramatically. But a Risk Analysis Institute's credible analyses, supporting not a specific policy but rational policymaking in general, would incrementally move government decision making toward wiser, more informed choices.

Some conservatives have given "rational risk policy" and regulatory reform a bad name, often invoking a supposed "rational" response ostensibly in the public interest but actually on behalf of the special interests of corporate sponsors out to neuter the power of government oversight. Equally inflexible consumer groups and environmentalists resist rationality because the more fearful something sounds, the more it helps them advance their agenda.

But injecting rationality into the process is nothing more than good sense, in everyone's interest. It's time to create a vehicle to produce credible, reliable science to help develop policymaking that looks beyond our fears to what will do the most good.

The longer we wait, the more we risk.

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