Risk in Perspective

RISK COMMUNICATION: A NEGLECTED TOOL IN PROTECTING PUBLIC HEALTH.

Do we live in riskier times than humans have ever faced? This is a common question in these days of terrorism, SARS, weapons of mass destruction, climate change, ozone depletion and HIV/AIDS.

The answer is resoundingly equivocal. There is both good risk news, and bad. But despite the mixed evidence, many people say they think the risks we modern humans face are greater than they’ve ever been. The implications of this apprehension are immense for public and environmental health and for the global economy.

We write to offer insight into how human risk perception is both analytical and affective, which offers an explanation of why the public’s fears sometimes don’t seem to match the facts. We suggest that, empowered by such insight, governments can and must do a more effective job of risk communication, through both their policies and what they say about them. Understanding and respecting the analytic and affective ways people make risk judgments can help governments help citizens keep their sense of risk in perspective. This, in turn, will not only help individuals make wiser, healthier decisions for themselves. It will also help focus social concern on the relatively greater risks. That will allow governments, businesses, and other social institutions to invest in optimal protection of public and environmental health with the most efficient use of limited resources.

Just how risky is the world in which we live? Consider some data from the United States, which reflect similar trends in developed nations worldwide. In 1900, the average life expectancy was about 45 years of age. Today it is nearing 80. In just the last 40 years, infant mortality has dropped from 26 per thousand live births, to 7. In 1918, the influenza epidemic killed 600,000 Americans. In 1999, influenza killed about 36,000 Americans. By major measures, this is a far healthier, safer world than it has ever been.

But new risks have arisen. Worldwide more than 22 million people have died of AIDS since 1984. The postwar industrial/technological/information age has given us both the benefits and the risks of nuclear power, pesticides, and many new technologies. Under the burden of a global population that in the last 100 years has exploded from 1.65 billion people to more than 6 billion people, environmental risks such as climate change, water and air pollution, and mass extinction of species have added to a growing litany of new perils.

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On top of this new host of new hazards, we live in a
time of unprecedented media availability and information
immediacy. Whenever something is discovered that may
even possibly be perilous, we learn of it, worldwide,
within days. It is also a new phenomenon that a majority
of our sources of information are owned by a small
number of large corporations. Seeking to maximize
profits, the media outlets of these global firms often
make new risks sound as dramatic as possible in order to
 grab attention and attract us to buy their next newspaper,
magazine, or television broadcast.

These are the modern realities of what seems like a
risky world. But it is not by careful rational analysis
alone that we interpret information about the risks our
modern world presents. Such conscious analysis is
relatively slow and effortful. In addition we use ancient
intuitive processes that are instinctive, fast, and often not
completely accessible to conscious awareness. We apply
a series of affective criteria to perceive and respond to
danger. Essentially, several decades of research on risk
perception suggests that humans tend to fear similar
things, for similar reasons. To understand the
characteristics of risks that trigger these responses is to
gain some insight into why people are commonly more
afraid of some relatively small risks, and less afraid of
some that in certain ways cause greater harm.

Dread
What’s worse, being eaten by a shark or dying of heart
disease? Both kill you, and heart problems are far more
likely to do you in. But the dreadful death often evokes
more concern. Despite the fact that heart disease kills
roughly 25 percent more Americans each year, cancer
evokes more fear in most people because cancer is
perceived as a dreadful way to die. This helps explain
why hazards that might cause cancer, such as radiation
and industrial chemicals, evoke strong fears. Dread is a
clear example of the more general way we think about
risk in terms of our intuitive feelings, a process that has
been labeled The Affect Heuristic.

Control
Do you feel pretty safe when you drive? Most people
do. Having the wheel in your hand gives you the feeling
that you can control what happens. But switch to the
passenger seat and you’re a little more nervous because
you are no longer in control. This also applies to process.
If you feel as though you have some control over the
process determining a risk you will face, the risk
probably won’t seem as big as if it was decided by a
process over which you felt you had no control.

Is the risk natural or is it human-made?
Anthropogenic sources of radiation like nuclear
power, mobile phones, or electrical and magnetic fields
frequently evoke greater concern than radiation from
the sun, which is a vastly greater risk (1.3 million skin
cancer cases, 7,800 melanoma deaths, per year in the
U.S.) but less worrisome to many because it is natural.
This factor helps explain widespread concern about
many technologies and products, and offers important
insights into one key factor in the debate over the
Precautionary Principle.

Choice
A risk we choose seems less risky than if that risk is
imposed on us. If you use a mobile phone while driving,
you may have on occasion noticed a driver next to you,
using his or her mobile, and felt upset about the risk that
other driver was imposing on you, even while you
voluntarily took the same risk, albeit with less concern.
(Of course, you have control over your car, so the factor
of control also contributes in this example.)

Children
In addition to the genetic imperative to survive (which
is, after all, the underlying impetus of our risk
perceptions and responses) humans are genetically driven
to reproduce. Survival of the species depends on survival
of our progeny. So it is not surprising that research has
found that a risk to children, like asbestos in a school or
the abduction of a youngster, seems worse than the same
risk to adults, such as asbestos in a workplace or the
abduction of an adult. During last year’s sniper attacks in
Washington D.C., after five adults had been murdered,
the sniper wounded a 13 year-old boy. The local police
chief, tears in his eyes, declared of the sniper “He’s
really getting personal now!”

Is the risk new?
At the time bovine spongiform encephalopathy first
showed up in Germany, an opinion survey found that
about 85% of the public thought mad cow disease was a
serious threat to public health. But the same poll done at
the same time in the U.K., where it had been around for
years and killed many more animals and more than 100
humans, found that only around 40% of the public
thought mad cow disease was a serious threat. New risks,
including everything from SARS and West Nile virus to
new technologies or products, tend to be more
frightening than the same risk after we’ve lived with it for a while and our experience has helped us put the risk in perspective.

**Awareness**

The more aware of a risk we are, the more available it is to our consciousness, and the more concerned about it we are likely to be. SARS is currently evoking far more new coverage, attention, and concern than influenza, which kills an estimated 36,000 people a year. In the Washington D.C. area last fall, fear of being shot by a sniper was much higher than the greater risks of heart disease, cancer, or stroke. The other risks weren’t gone, but conscious concern about them was lower, because awareness of them had been reduced.

**Can it happen to me?**

Any risk seems larger if you think you or someone you care about could be a victim. Consider terrorism in the United States. Prior to September 11, 2001, the Americans who were victims of terrorism were “someone else”. Yes, they were Americans. But they were in foreign embassies, or on foreign military assignment. After 9/11/01, however, Americans at home felt they too were possible targets, and fear of terrorism grew.

This helps explain why statistical probability is often irrelevant to people and an ineffective form of risk communication. Imagine that someone hands out 1 million bottles of water, one of which carries a poison. You get one of those bottles. Now imagine taking a drink from that bottle. Your risk of dying from that water is only one a million, but it still feels risky to drink it, because you could be that one. This helps explain why the acceptable level of risk to many people is zero.

**The Risk-Benefit tradeoff**

Some risk perception researchers and many risk analysts believe that the risk-benefit tradeoff is the major factor that makes us more or less afraid of a given threat. If we perceive a benefit from a behavior or choice, the risk associated with it seems smaller. If there is no perceived benefit, the risk seems larger. When measles and polio were prevalent, the benefits of vaccination were perceived to outweigh the risk of the side effects. But now, with these diseases rare, the perception of some parents is that the risks of those side effects, as low as they are, outweigh the benefits of vaccines. Many American health care workers, “first providers”, are refusing a smallpox vaccination because the risk of the treatment, low though it may be, seems larger than the benefit, which is protection from a disease they aren’t convinced is a threat at all.

**Trust**

Research has found that the less we trust the people who are supposed to protect us, or the people or government or corporate institutions exposing us to the risk in the first place, or the people communicating to us about the risk, the more afraid we’ll be. The more we trust, the less concern we’ll feel. Imagine you’re in a desert, nearly dead of thirst, and someone appears and offers you two glasses of a clear liquid. She won’t tell you what is in either glass, only that one comes from Pope John Paul and one comes from a tobacco company. Which one would you take?

**THE IMPLICATIONS**

But what of all this? What is the utility of understanding the underpinnings of our fears? We suggest that by realizing and respecting the realities of affect and other heuristic processes, and by accepting that they are apparently deeply rooted and reflect intrinsic human techniques for survival, policy makers can incorporate these values, as well as fact-based analysis, into their risk management decision making. Further, by understanding the reasons people perceive risk as they do, policy makers can communicate with various audiences about these issues in terms and language relevant to people’s concerns. Risk communication which acknowledges and respects the affective motivators which underlie people’s concerns, rather than dismissing such perceptions as “irrational” because they are not solely fact-based, is likely to be more successful in helping people make more informed choices about the risks they face.

This is directly a matter of public health. People who are either too afraid of relatively low risks, or not afraid enough of relatively big ones, make dangerous choices. People afraid of flying choose instead to drive, a much riskier behavior. People afraid of terrorism or other crimes take the risk of acquiring firearms. In 2001 people afraid of anthrax took antibiotics prophylactically, increasing the proliferation of drug-resistant bacteria.

Further, chronic stress, by altering blood levels of adrenaline and cortisol, impairs the immune system. Worrying too much about getting sick may actually...
increase the likelihood that you will get sick, or sicker, or stay sick longer, or die, from any infectious disease. Chronic stress is also associated with the likelihood of type-II diabetes, accelerated osteoporosis, and causes decrements in learning and long term memory. Fear is, in itself, a risk.

Not enough fear can also be dangerous. People unafraid of natural risks like solar radiation, or risks they think they can control like driving, or risks that are associated with benefits, such as smoking or alcohol consumption or fat and calorie-rich diets, fail to take adequate precautions, and they too face a greater likelihood of premature death. Lack of appropriate caution can be dangerous too.

CONCLUSION

Some call this pandering to irrationality and emotion, and suggest instead that a benevolent technocracy should be empowered to manage societal risk in order to ensure intelligent, rational and effective policies. But this fails to recognize the sensitive and pivotal issues of trust and control. Even the most benevolent process, if removed from the input of citizen values, will feel like one over which the public has too little control, and will not likely be trusted. The policies of such a process are more likely to provoke resistance than support. Further, the very idea of such a rationality-based technocracy fails to accept that risk perception is at least as much an affective and intuitive process as it is analytical, and that fear itself, either too much or not enough, is a significant risk that also must be factored into decisions about public and environmental protection.

Risk communication, informed by the insights of risk perception, is a powerful yet neglected tool in helping people make more informed and ultimately healthier choices for themselves. More informed individual decision making will in turn free the leaders of social institutions to make reasoned risk management choices that will maximize public and environmental health with the most efficient use of limited resources.

Source for health statistics: CDC