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The psychology of risk perception

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Understanding why certain perils seem more perilous than others.

Two environmental accidents in different parts of the world — along with media and public reaction to them — have dramatically illustrated some of the basic psychological principles of risk perception. In 2010, the Deepwater Horizon oil spill sent millions of gallons of oil into the Gulf of Mexico. In 2011, the Fukushima Daiichi nuclear power plant in Japan — damaged after a devastating earthquake and tsunami — leaked radiation into the atmosphere.

These incidents dominated news coverage for weeks and created widespread anxiety, even in people living miles away and not directly affected. For example, news that potassium iodide pills could help prevent radiation-induced thyroid cancer sparked a run on pharmacy supplies in the United States, thousands of miles away from the disaster, even when there was no evidence of increased radiation exposure.

Factors affecting perception

Risk perception is rarely entirely rational. Instead, people assess risks using a mixture of cognitive skills (weighing the evidence, using reasoning and logic to reach conclusions) and emotional appraisals (intuition or imagination). After reviewing the research, risk expert David Ropeik identified 14 specific factors that affect perception of danger:

Trust. When people trust the officials providing information about a particular risk — or the process used to assess risk — they tend to be less afraid than when they don't trust the officials or the process.

Origin. People are less concerned about risks they incur themselves than the ones that others impose on them. This helps explain why people often get angry when they see someone talking on the cell phone while driving — and yet think nothing of doing so themselves.

Control. Perceived control over outcomes also matters. This helps explain why someone is not afraid of driving a car — even though automobile crashes kill thousands of people each year — but may be afraid of flying in an airplane.

Nature. Dangers in nature — such as sun exposure — are perceived as relatively benign, whereas man-made harms — nuclear power accidents or terror attacks — are more menacing.

Scope. Cataclysmic events, capable of killing many people at the same time, are scarier than chronic conditions — which may kill just as many people but over a longer period. That helps explain why a tsunami or earthquake feels scarier than heart disease or diabetes.

Awareness. Saturation media coverage of high-profile disasters raises awareness of particular risks more than others. Likewise, an event that hits close to home, such as having a friend diagnosed with cancer, heightens risk perception.

Imagination. When threats are invisible or hard to understand, people become confused about the nature of the risk, and the event becomes scarier.

Dread. Events that invoke dread — such as drowning or being eaten alive — scare people more than those that do not.

Age affected. Risks are more frightening when they affect children. Asbestos in a school building, for example, may bother people more than asbestos in a factory.

Uncertainty. Events inspire more fear when officials don't communicate what is known — or when the risks are simply unknown. In the Deepwater Horizon spill, for example, officials could more easily estimate the amount of oil spewing into the ocean than they could predict what effect that would have on wildlife and fisheries.

Familiarity. Novel risks are perceived to be more dangerous than more familiar threats. That's why West Nile virus may be perceived as more of a risk to health than not testing a smoke detector regularly.

Specificity. Victims who are publicly identified evoke a greater emotional reaction than those who remain nameless and faceless.

Personal impact. Risks that affect people personally are more frightening than those that affect strangers.

Fun factor. Engaging in risky behavior may not seem that way if it involves pleasure. Some examples are drug taking, unsafe sex, and high-risk sports.

Risk in perspective

There is no question that people living in the direct vicinity of high-profile disasters suffer mentally as well as physically. Hurricane Katrina, for example, was followed by an increase in psychiatric disorders, substance abuse, and domestic violence among people living in the areas affected.

For people who are affected indirectly by reading media reports, however, the real danger is heightened or exaggerated *perception* of risk that may not have a solid basis in fact. Keeping the risk in perspective will help prevent needless anxiety or counterproductive coping strategies.

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