



Radiation Safety Counseling News

How We are Prone to Errors in Decisions for Radiation Safety - Part IX

Dear Reader,

Illusions of knowing and of hindsight affect our decisions for radiation safety. In this series of articles we are looking at how quick decisions for radiation safety are prone to intuitive errors. Making quick decisions for safety is an important function of the subconscious mind for our survival. Such quick decisions, however, are typically based on stored impressions and images which may have little relevance to the real world of radiation. This article will continue to review how biases occur in safety decisions as described in Daniel Kahneman's book.



Ray Johnson

As always, your questions or feedback are welcomed. Feel free to contact us through email, our blog, or our Facebook page.

Regards,
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Radiation Safety Counseling Services

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The Illusion of Knowing

For our everyday comfort we create coherent stories of the world based on the information available to us. If we can create a good story, we believe it. Kahneman[1] notes, however, that it is paradoxically easier to construct a coherent story when we know little and have fewer pieces to fit into the puzzle. This might help explain why some people are so convinced of the hazards of radiation. For example, a person came to me stating, "We have not been telling people the truth about radiation effects." He had recently heard about radiation-induced bystander effects and this led him to create a story in which radiation was much more dangerous than previously thought. This story confirmed what he had always believed about the dangers of radiation, as if he had always known this to be true. Expressed confidence by people who claim to "know" perpetuates the illusion that the world is more knowable than it really is. The core to this illusion is the belief that the story we create is the real world.

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While we learn from surprises and may adjust our coherent story accordingly, we also lose our recall of what our former beliefs may have been. Studies show that when people are asked to recall their former beliefs, they retrieve the current ones instead, and cannot believe they ever felt differently. Can any of you recall what you believed about radiation 20, 30, or more, years ago that may be different than what you believe today? We are all prone to hindsight bias to the extent that we underestimate surprise from past events and believe that "we knew it all along." Our tendency to revise the history of our beliefs is an example of the cognitive illusion of "knowing."

The Illusions of Hindsight

Hindsight can be very unkind to those who make decisions on behalf of others. We tend to blame others for decisions that worked out badly and give little credit for successes that appear obvious only after the fact. This is called outcome bias. We judge the quality of a decision not on the basis of whether the process was sound but whether its outcome was good or bad. The worse the consequence, the greater the hindsight bias. For example, a fire department responding to an alarm in a downtown office building, noticed that a GM meter on the truck was showing readings of twice background as they approached. Based on this observation they set up barricades and evacuated several city blocks in the middle of a business day. While that decision may have seemed prudent by the precautionary principle, most HPs would likely conclude by hindsight that this very expensive decision was overly conservative.

A Comforting Process

As our subconscious mind continuously attempts to make sense of the world, we tend to see things as more coherent than they really are. Our illusions are comforting because they reduce the anxiety we would experience if we allowed ourselves the knowledge of uncertainties for the future. While HPs are familiar with uncertainties, most of the world wants to know what is safe or unsafe.

[1] Kahneman, D., "Thinking, Fast and Slow." Farrar, Straus, and Giroux, New York, 2011

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