

The Risk Paradox:

How Effective Risk Management Processes
Encourage Poor Risk Management

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The Observed Problem

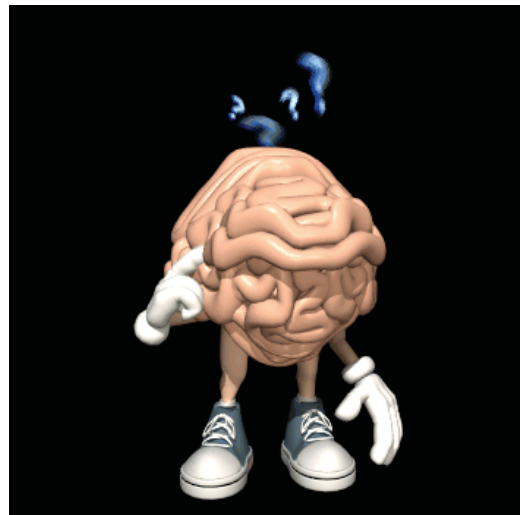


Puzzles

- Does risk management exceed human capacity?
- Why is risk management difficult?
- Which forces work against improving & stabilizing risk management practices?
- Can we improve & stabilize risk management processes?

Beyond Our Capacity?

- Statistics
- Availability Bias
- Framing Bias



Are People REALLY that Bad at Statistics?



Availability Bias

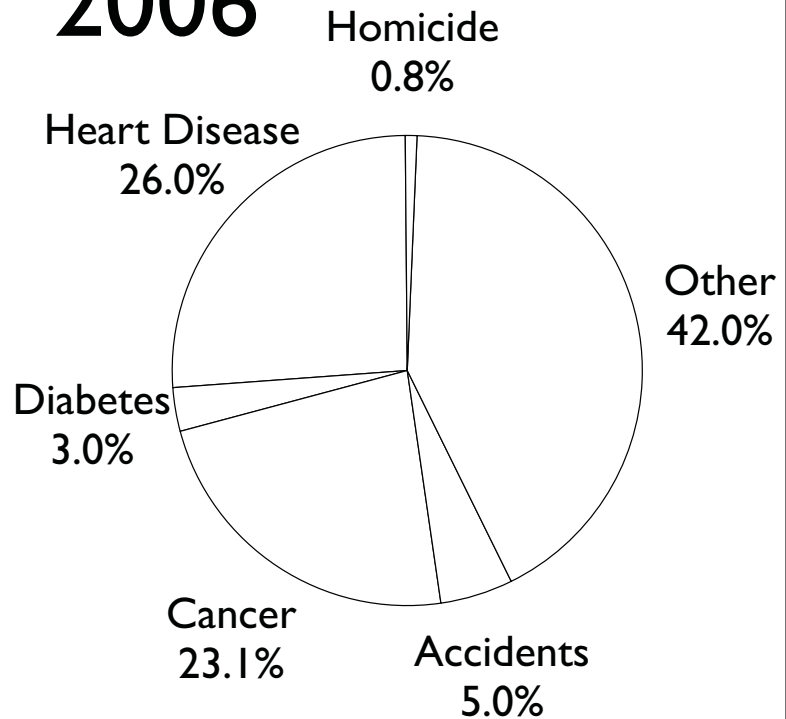


“With each successful landing, it appears that NASA engineers and managers increasingly regarded the foam shredding as inevitable, and as either unlikely to jeopardize safety or simply an acceptable risk”

- Columbia Accident Investigation Report

(U.S.) Causes of Death 2006

- Accidents
- Cancer
- Homicide
- Heart Disease
- Diabetes



Framing Bias I

Problem I - If forced to choose one option for yourself:

- A. 80% chance of winning \$4,000 & 20% chance of winning \$ 0
- B. 100% chance of winning \$3,000

Which would you select?

Framing Bias 2

Problem 2 - If forced to choose one option for yourself:

- A. 80% chance of losing \$4,000 &
20% chance of losing \$ 0
- B. 100% chance of losing \$3,000

Which would you select?

Framing Bias 3

Bottom line:

Humans aren't risk averse, but are "losing averse" & perceive possible losses as a greater threat than possible gains. We have a bias toward taking greater risks to avoid losing.

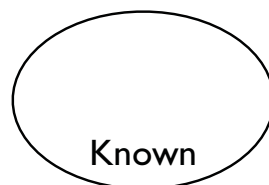
Classical decision theory assumes "rational actors" - This is a flawed assumption

Challenges?

- Infinite Risks
- Correlated Risks
- Risk Management Isn't Sexy
- Subjective Probability of Future Events
- Cultural Norms & Individual Perception



Infinite Risks



Correlated Risks



Risk Management Isn't Sexy



Fireman



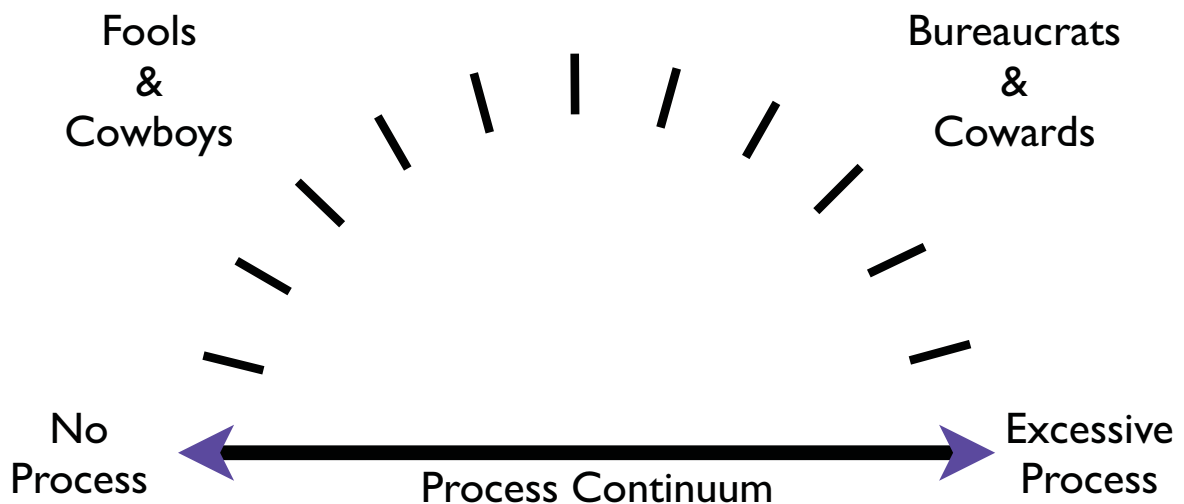
Fire Inspector

Subjective Probability

Mathematical models are VERY sensitive to probabilities assigned to future events. Our predictions are subject to bias & error.



Cultural Norms & Individual Perception



Opposing Forces

More Effective
Risk Management

Less Effective
Risk Management

- Real Cost vs. Possible Benefit
- Cultural Taboos
- Wolf Parables

Real Cost vs. Possible Benefit



Real Cost vs. Possible Benefit



Cultural Taboos



Wolf Parables



Wolf Lessons



Investing in Risk
Saves the Day

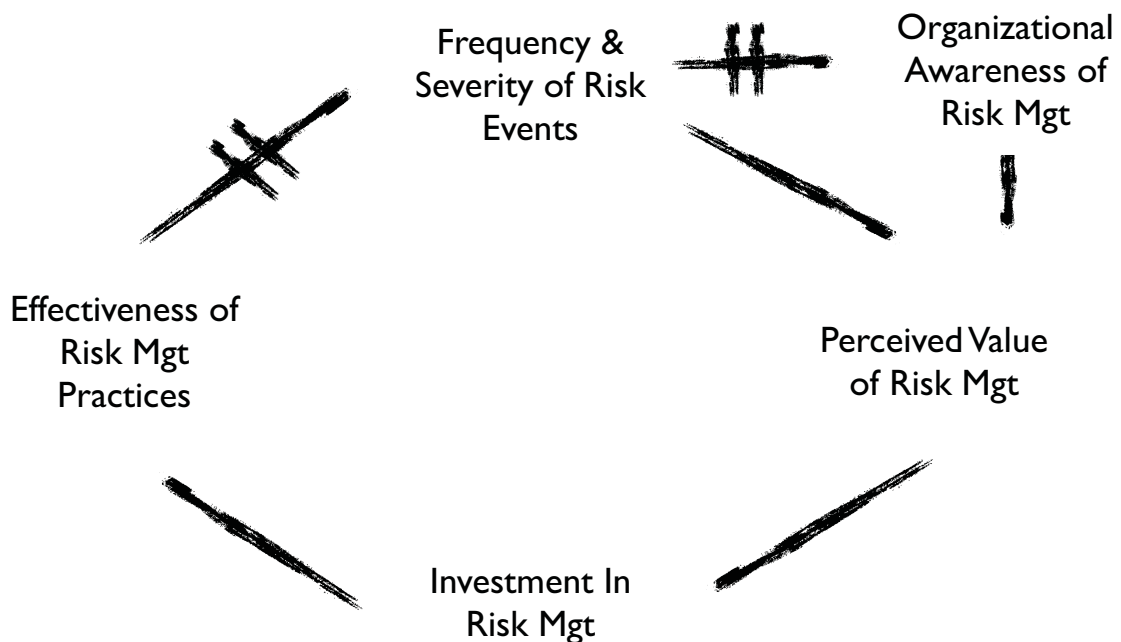


Don't Cry Wolf

Consequences

Risk Event	Happens	Doesn't Happen
ID'd & Managed	We are smart pigs (RM has Value)	We cried wolf (RM is a Waste)
ID'd & Not Managed	RM didn't help	RM didn't matter
Not ID'd	RM didn't help	X

System Effects



Stabilizing & Improving Risk Management

- Educate decision-makers about risk
- Implement in slow & deliberate steps
- Don't oversell risk management benefits
- Seek executive input about which risks to address
- Keep executives involved
- Take credit for wins AND losses



Thank You

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