

MANAGING EXTREMES

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CAS
Emerging Uncertainty and Bias
Blindness

Pete Thomas

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A word from our lawyers

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Today's talk

- Emerging uncertainty
- The power of boring
- The evolution of modern tort law
- Emerging uncertainty and insolvency
- Emerging risks
- The problem of biases
- The problem of persuasion
- Commercial sustainability



“You cannot be certain about uncertainty”- Frank Knight

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- Uncertainty: The lack of certainty.
- A state of having limited knowledge where it is impossible to exactly describe existing state or future outcome, more than one possible outcome. – Doug Hubbard



Emerging uncertainty – the unseen catastrophe

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- Can develop over decades
- The growth of Big Law and Big Insurance mirror society's evolution from contract law as a vehicle for compensating injured parties and deterring wrong-doers to tort law (and strict liability)
- The bias of blindness



Emerging uncertainty and the really boring

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THE POWER OF THE REALLY BORING.

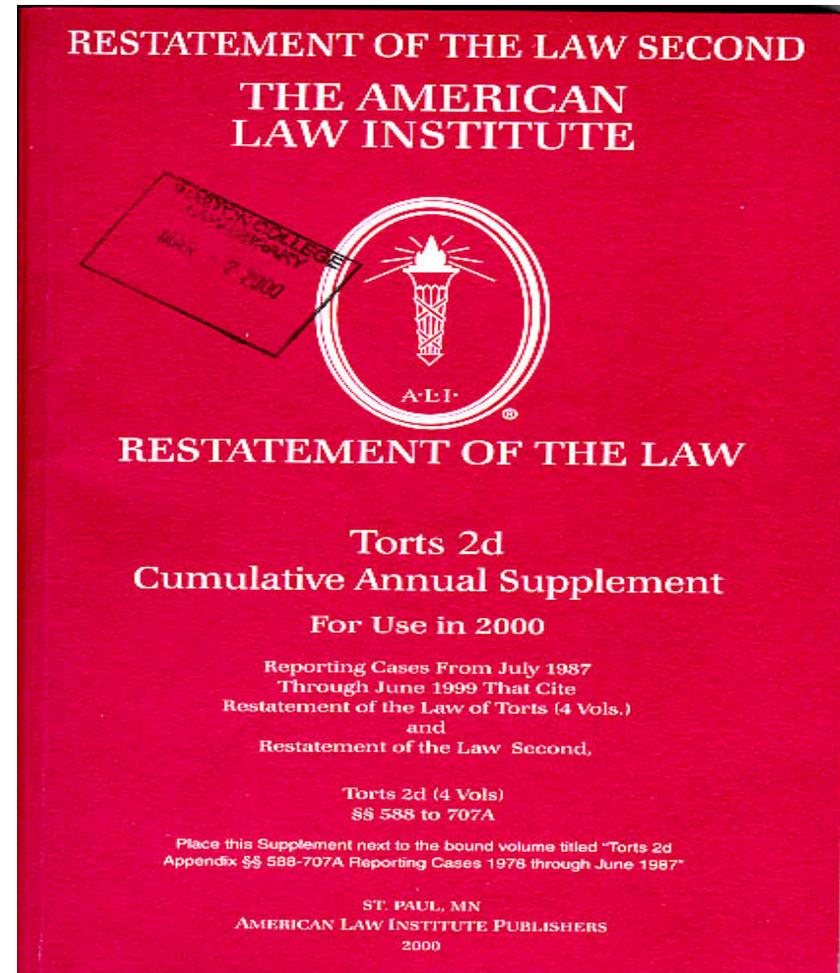


The “boring” turbo charger of the plaintiff’s bar business model

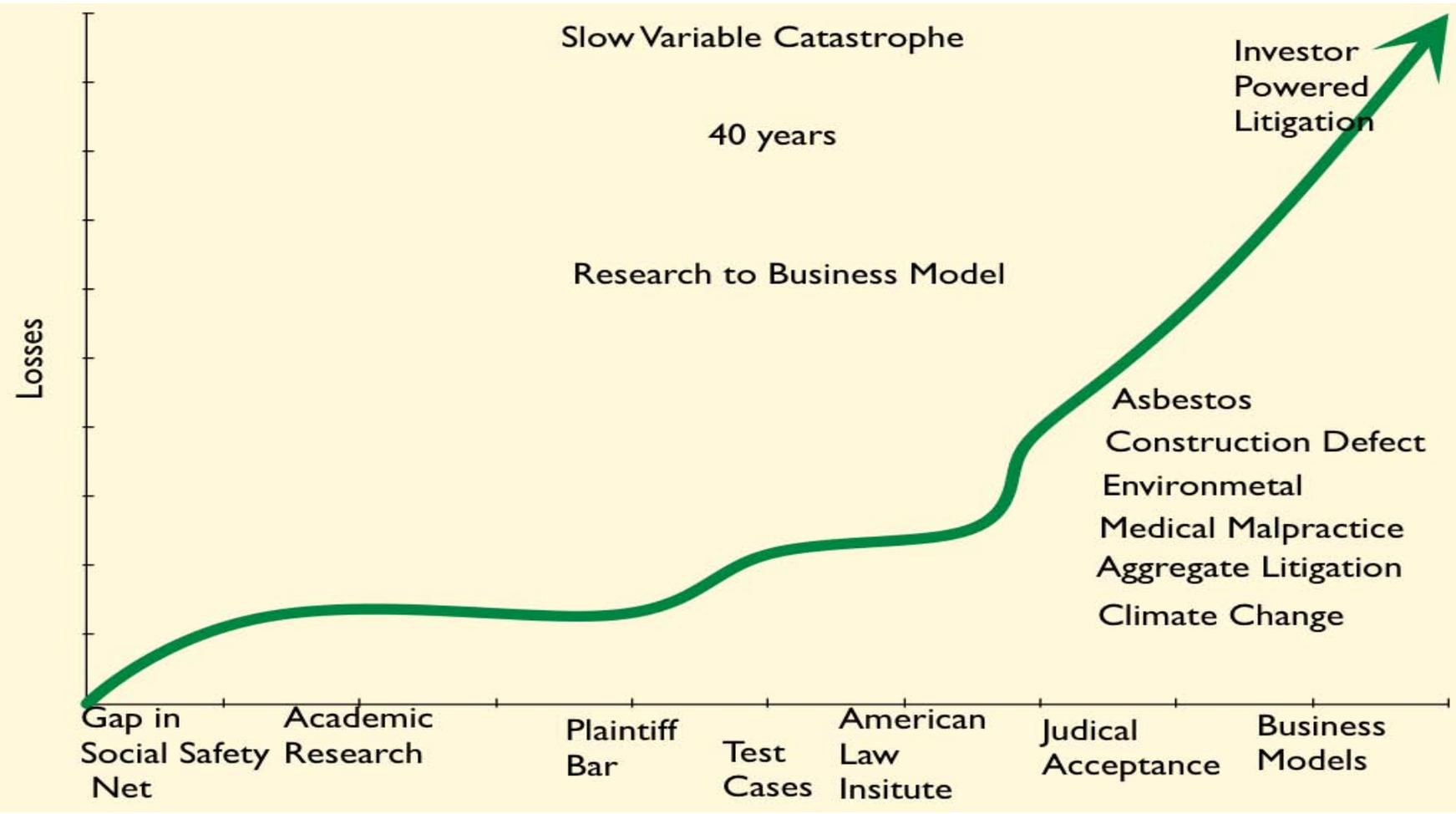
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- Restatement of Torts 2nd
- Strict liability
- Big Law and Big Insurance
 - Asbestos
 - Construction defect
 - Environmental
 - Aggregate liability
- Climate Change
- It is not just EQ, hurricanes or terrorism



Engineered catastrophes driven by legal business model

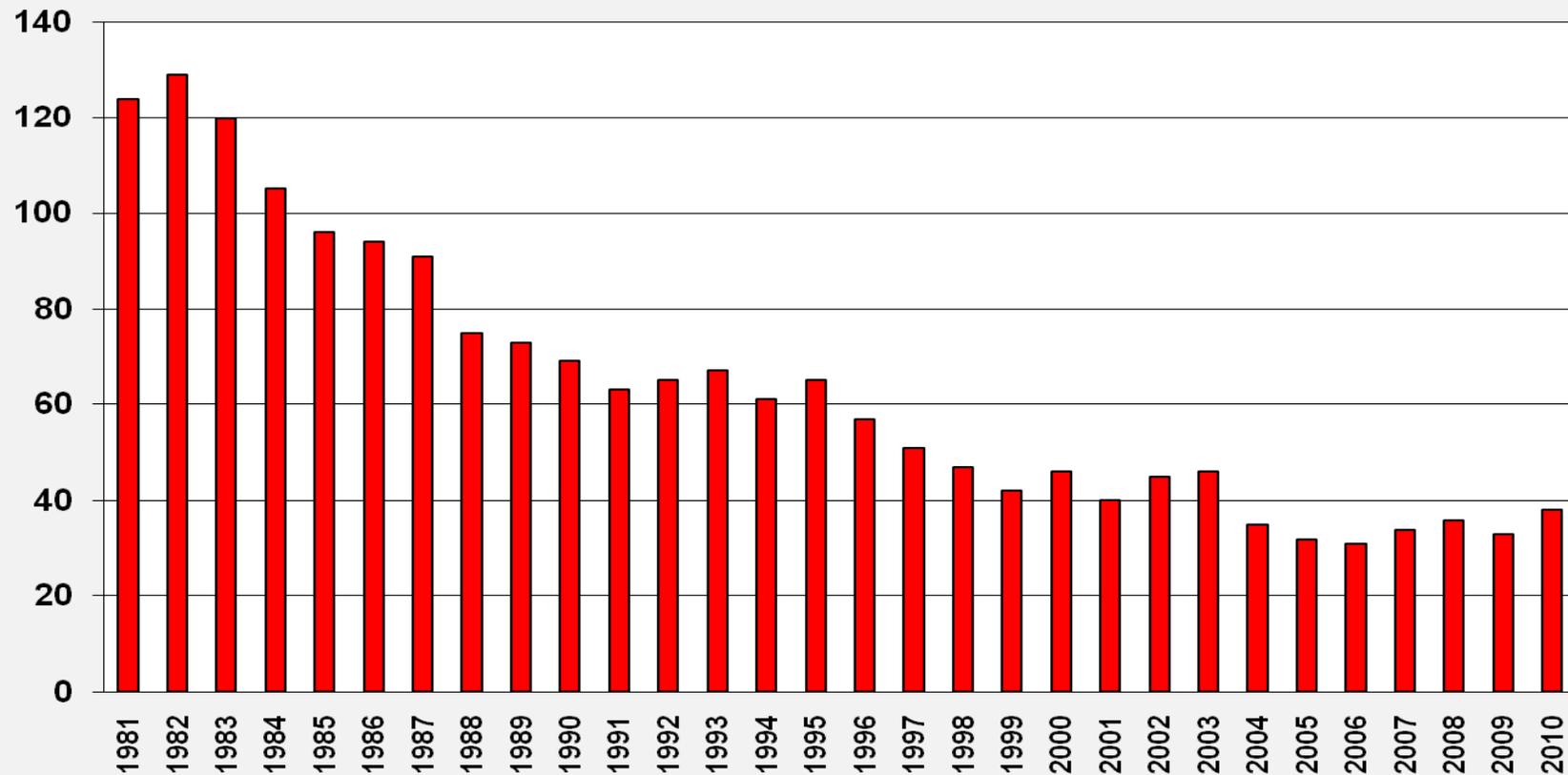


Surprised by emerging uncertainty

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Number of U.S. Reinsurers Reporting to the RAA



Reinsurers the apex of the risk assumption pyramid

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- Catastrophe reinsurance products are often designed to help insurers manage social risk associated with their assumed portfolios
- Social risks can take decades to mature into insured and reinsured losses
- In the case of the “emerging uncertainty” asbestos catastrophe losses reinsurance underwriting technology and assumptions of the 1950s and 1960s were hard pressed by late 1960s, 1970s and beyond legal theories
- A quick look at the history of the American reinsurance market shows the power of “emerging uncertainty” catastrophes

1980 reinsurers reporting to the RAA (119)

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Aetna Ins Co
American Agricultural Insurance. Co.
American Medical Assurance
American Mutual Liability
American Mutual Re
American Overseas Re
American Reinsurance Company
American Union
Bausch & Lomb Insurance Co.
Bellefonte Re Insurance
Buffalo Re
Christiania/Switzerland Group
Cincinnati Insurance Co
Cologne Re
Commercial Union Re
Constitution State Mgt.
Constellation Re
Constitution Re
Continental Cas Co
Continental Re Corp
Dominion Insurance of America
Dorinco Reinsurance Co.
Elkhorn Insurance Co
Employers Mutual Des Moines
Employers Re Corp
Ennia Re
Evanston Group
Excess & Treaty Re Corp
Excess Mutual Reinsurance Co
Farm Bureau Mutual of Idaho
Farmers Alliance Mutual
Farmers Home Mutual
Farmers Mutual Hail Insurance Co of IA
Federated Re Corp
Fireman's Fund
First Excess and Reins Corp
First Int'l Re
First Security Insurance Co
Fremont Indemnity Co
Gamma Reins Co

Geico Corp
General of Triste & Venice
General Re/North Star Re
Gerling Global
Great American Re Inc.
Guarantee Insurance Co
Guilderland Mutual Reins Co
Hamburg Int'l Re
Hansa Re
Hanseco Re
INA Re
Ins Corp of Hannover
Kemper Reinsurance Co
Liberty National
Lyndon Insurance Group
Mead Reins Corp
Mennonite Indemnity Inc.
Mercantile & Gen Reins Co of Am
Merchant & Bus Men's Mutual
Metropolitan Re
Millers National Insurance Co
Monarch Insurance Co
MONY Re
Motorist Mutual Insurance. Co
Munich Re Group
Mutual Fire, Marine & Inland
National Cas Co
National Re
Nationwide Mutual Insurance Co
New England Re
New York Insurance Exchange
Nordic Union Reinsurance
North American/Swiss Re
Northeastern Htfd/1st Re
NWNL Reins Co
Ohio Re Corp
Ormond Re Co
Pacific Re Corp
Philadelphia Manufacturers Mutual Insurance
Philadelphia Reins Corp

Pine Top Insurance
Presidio Insurance Co
Providence Wash Insurance
Provident General
Prudential Re Group
Public Service Mutual
Puritan Insurance Co
Ranger Insurance Co
Reins Co of America
Reins Corp of NY
Reliance Insurance Co
Republic Western Insurance Co
RLI Insurance Co
Rochdale Insurance Co
SCOR Re
Security Insurance Group
Sentry Insurance
Shelby Mutual Insurance Co
Signet Re
Simcoe & Erie General
Sirius Reinsurance Corp
Skandia America Group
Southwest Int'l Reins Co
St Paul Group
Summit Fidelity & Surety
Taisho Marine & Fire
Tokio Marine & Fire
Transatlantic Group
Unione Italiana Re
United Americas
United Fire and Casualty Co
United Re Corp of N.Y.
Unity Group
Universal Re Corp
USF&G Reins Group
Wausau Insurance Co
Winterthur Swiss Insurance Co
Zurich Insurance Co
Zurich Reins Co of NY

1980 reinsurers 10 years later: effects of emerging uncertainty

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Aetna Ins Co
American Agricultural Insurance. Co.
American Medical Assurance
American Mutual Liability
American Mutual Re
American Overseas Re
American Reinsurance Company
American Union
Bausch & Lomb Insurance Co.
Bellefonte Re Insurance
Buffalo Re
Christiania/Switzerland Group
Cincinnati Insurance Co
Cologne Re
Commercial Union Re
Constitution State Mgt.
Constellation Re
Constitution Re
Continental Cas Co
Continental Re Corp
Dominion Insurance of America
Dorinco Reinsurance Co.
Elkhorn Insurance Co
Employers Mutual Des Moines
Employers Re Corp
Ennia Re
Evanston Group
Excess & Treaty Re Corp
Excess Mutual Reinsurance Co
Farm Bureau Mutual of Idaho
Farmers Alliance Mutual
Farmers Home Mutual
Farmers Mutual Hail Insurance Co of IA
Federated Re Corp
Fireman's Fund
First Excess and Reins Corp
First Int'l Re
First Security Insurance Co
Fremont Indemnity Co
Gamma Reins Co

Geico Corp
General of Triste & Venice
General Re/North Star Re
Gerling Global
Great American Re Inc.
Guarantee Insurance Co
Guilderland Mutual Reins Co
Hamburg Int'l Re
Hansa Re
Hanseco Re
INA Re
Ins Corp of Hannover
Kemper Reinsurance Co
Liberty National
Lyndon Insurance Group
Mead Reins Corp
Mennonite Indemnity Inc.
Mercantile & Gen Reins Co of Am
Merchant & Bus Men's Mutual
Metropolitan Re
Millers National Insurance Co
Monarch Insurance Co
MONEY Re
Motorist Mutual Insurance. Co
Munich Re Group
Mutual Fire, Marine & Inland
National Cas Co
National Re
Nationwide Mutual Insurance Co
New England Re
New York Insurance Exchange
Nordic Union Reinsurance
North American **Swiss Re**
Northeastern Hffd/1st Re
NWNL Reins Co
Ohio Re Corp
Ormond Re Co
Pacific Re Corp
Philadelphia Manufacturers Mutual Insurance
Philadelphia Reins Corp

Pine Top Insurance
Presidio Insurance Co
Providence Wash Insurance
Provident General
Prudential Re Group
Public Service Mutual
Puritan Insurance Co
Ranger Insurance Co
Reins Co of America
Reins Corp of NY
Reliance Insurance Co
Republic Western Insurance Co
RLI Insurance Co
Rochdale Insurance Co
SCOR Re
Security Insurance Group
Sentry Insurance
Shelby Mutual Insurance Co
Signet Re
Simcoe & Erie General
Sirius Reinsurance Corp
Skandia America Group
Southwest Int'l Reins Co
St Paul Group
Summit Fidelity & Surety
Taisho Marine & Fire
Tokio Marine & Fire
Transatlantic Group
Unione Italiana Re
United Americas
United Fire and Casualty Co
United Re Corp of N.Y.
Unity Group
Universal Re Corp
USF&G Reins Group
Wausau Insurance Co
Winterthur Swiss Insurance Co
Zurich Insurance Co
Zurich Reins Co of NY

1990 reinsurers reporting to the RAA (71)

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Abeille General Ins Co US Br
AGF Re Corp of US (Partner Re US)
American Agricultural Ins. Co.
American Fuji Fire & Mar Ins Co
American Reinsurance Company
American Royal Reins Co
American Union Reins Co
Asset Guaranty Reins Co
AXA Reinsurance Co
Baltica-Skandia Rein
Belvedere America Reins Co
Chartwell Reinsurance Co
Christiania/Switzerland Group
CIGNA Reinsurance Co
Cologne Re
Constitution Re
Continental Re Corp (CNA Re)
Dorinco Reinsurance Co.
EMC Reinsurance
Employers Re Corp
Enhance Financial Services Grp
Executive Re (ERIC)
Finmar Reins Corp
First American Ins Co
Folksamerica Reinsurance Co
Frankona Reins Co

General Reins Group
Generali - US Branch
Gerling Global
Great Lakes Re
Hansa Reins Co of America
Ins Corp of Hannover
Int Credit of N. A. Reins Inc.
M&G Reins Co of America
Mennonite Indemnity Inc.
MONY Re
Munich Re Group
N Amer/Swiss/W Atlantic Re
NAC Re
National Re
New Zealand Reins Co
Nordic Union Reinsurance
Philadelphia Reins Corp
Phoenix Reinsurance Co
PMA Re Corp
Prudential Re Group (Everest)
Putnam Reins Co
Re Capital Reins Corp
Reins Corp of NY

Republic Western Ins Co
San Francisco Reinsurance Co
SCOR Re
Signet Re/Berkley
Sirius Reinsurance Corp
Skandia America Grp (Odyssey)
Sorema North American Group
St. Paul Group
Surety Co-Op Reins
Toa Reinsurance Co of America
Transamerica Reins
Transatlantic Group
Trenwick America Re
Underwriters Reinsurance Co
Unione Italiana Re
United Re Corp of N.Y.
United Republic Re
Unity Group
US International Reins Co
Vesta American Reins Corp
Winterthur Re Corp (Partner Re NY)
Zurich Reins Co of NY

1990 reinsurers 10 years later: effects of emerging uncertainties

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Abeille General Ins Co US Br
AGF Re Corp of US (Partner Re US)
American Agricultural Ins. Co.
American Fuji Fire & Mar Ins Co
American Reinsurance Company
American Royal Reins Co
American Union Reins Co
Asset Guaranty Reins Co
AXA Reinsurance Co
Baltica-Skandia Rein
Belvedere America Reins Co
Chartwell Reinsurance Co
Christiania/Switzerland Group
CIGNA Reinsurance Co
Cologne Re
Constitution Re
Continental Re Corp (CNA Re)
Dorinco Reinsurance Co.
EMC Reinsurance
Employers Re Corp
Enhance Financial Services Grp
Executive Re (ERIC)
Finmar Reins Corp
First American Ins Co
Folksamerica Reinsurance Co
Frankona Reins Co

General Reins Group
Generali - US Branch
Gerling Global
Great Lakes Re
Hansa Reins Co of America
Ins Corp of Hannover
Int Credit of N. A. Reins Inc.
M&G Reins Co of America
Mennonite Indemnity Inc.
MONY Re
Munich Re Group (Amer Re)
N Amer /Swiss/W Atlantic Re
NAC Re
National Re
New Zealand Reins Co
Nordic Union Reinsurance
Philadelphia Reins Corp
Phoenix Reinsurance Co
PMA Re Corp
Prudential Re Group (Everest)
Putnam Reins Co
Re Capital Reins Corp
Reins Corp of NY

Republic Western Ins Co
San Francisco Reinsurance Co
SCOR Re
Signet Re/Berkley
Sirius Reinsurance Corp
Skandia America Grp (Odyssey)
Sorema North American Group
St. Paul Group
Surety Co-Op Reins
Toa Reinsurance Co of America
Transamerica Reins
Transatlantic Group
Trenwick America Re
Underwriters Reinsurance Co
Unione Italiana Re
United Re Corp of N.Y.
United Republic Re
Unity Group
US International Reins Co
Vesta American Reins Corp
Winterthur Re Corp (Partner Re NY)
Zurich Reins Co of NY

2000 reinsurers reporting to RAA (46)

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Ace Guaranty Re Inc
Advanta Insurance Company
Agri General Insurance Co
American Agricultural Ins Co
AXA Corp Solutions Reins Co
Berkley Insurance Company
Berkshire Hathaway/Nat Indem
CNA Re
Commercial Risk Re-Ins Co
Dorinco Reinsurance Co
EMC Reinsuranc e Company
Employers Reinsurance Group
Enhance Fin Services Group
Everest Reinsurance Co
Excess Reinsurance Co
Farmers Mutual Hail Ins Co of IA

Folksamerica Reinsurance Co
General Reins Group
Gerling Global
Hartford Re Company
Houston Casualty Co
Ins Corp of Hannover
Mapfre Reinsurance Corp
Martingale National Ins Co
Mitsui Marine & Fire Ins Co
Munich Re Group/American Re
NAC Re (X L Re)
Nichido Fire&Marine Ins Co Ltd
Nippon Fire&Mar Ins Co Ltd Us
Odyssey American Re
Corp/Odyssey Re Corp
Old Lyme Ins Co of RI Inc

Overseas Partners US Re
Co
Partner Re. U.S. Group
PMA Capital Insurance Co
PXRE Reinsurance Co
QBE Reinsurance Corp
SCOR Re
Shelter Reinsurance Co
Sorema North American Grp
St Paul Group
Swiss Re America Group
Toa Reins Co of America
Transatlantic Group
Trenwick America Re
Wisconsin Reinsurance Corp
Zurich Reinsurance (N.A) Inc

2000 reinsurers 10 years later: effects of emerging uncertainties

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Ace Guaranty Re Inc

Advanta Insurance Company

Agri General Insurance Co

American Agricultural Ins. Co.

AXA Corp Solutions Reins Co

Berkley Insurance Company

Berkshire Hathaway/Nat Indem

CNA Re

Commercial Risk Re-Ins Co

Dorinco Reinsurance Co

EMC Reinsurance Company

Employers Reinsurance Group

Enhance Fin Services Group

Everest Reinsurance Co

Excess Reinsurance Co

Farmers Mutual Hail Ins Co of IA

Folksamerica Reinsurance Co

General Reins Group

Gerling Global

Hartford Re Company

Houston Casualty Co

Ins Corp of Hannover

Mapfre Reinsurance Corp

Martingale National Ins Co

Mitsui Marine & Fire Ins Co

Munich Re Group/American Re

NAC Re (XL Re)

Nichido Fire&Marine Ins Co Ltd

Nippon Fire&Mar Ins Co Ltd Us

Odyssey American Re

Corp/Odyssey Re Corp

Old Lyme Ins Co of RI Inc

Overseas Partners US Re Co

Partner Re. U.S. Group

PMA Capital Insurance Co

PXRE Reinsurance Co

QBE Reinsurance Corp

SCOR Re

Shelter Reinsurance Co

Sorema North American Grp

St Paul Group

Swiss Re America Group

Toa Reins Co of America

Transatlantic Group

Trenwick America Re

Wisconsin Reinsurance Corp

Zurich Reinsurance (N.A) Inc

2010 reinsurers reporting to the RAA (30)

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MANAGING EXTREMES

Agri General Insurance Co.
Allied World Reinsurance Co.
Alterra Reinsurance USA Inc.
American Agricultural Ins Co.
Arch Reinsurance Co.
AXIS Reinsurance Co.
Berkley Insurance Co.
Dorinco Reinsurance Co.
EMC Reinsurance Co.
Endurance Re Corp. of America
Everest Reinsurance Co.
General Reinsurance Corp.
Hartford Steam Boiler Inspection and Ins Co.
Maiden Reinsurance Co.
Munich Reinsurance America Corp.

National Indemnity Co.
Nipponkoa Ins Co Ltd U.S. Branch
NLC Mutual Insurance Co.
Odyssey America Re/Odyssey Re Corp.
Paris Re America Insurance Co.
Partner Re U.S.
Platinum Underwriters Re Inc.
QBE Reinsurance Group
SCOR Reinsurance
Shelter Reinsurance Co.
Swiss Reinsurance America Corp
Toa Reinsurance Co. of America
Transatlantic/Putnam Reinsurance Co.
White Mountains Re Co. of America
XL Reinsurance America Inc.

Why is it hard to identify emerging uncertainty or risk but even harder to get decision makers to act?



The problem of bias

Cognitive biases of actuaries

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- The five initial cognitive biases that haunt risk managers:
 - Positive Illusions
 - Interpret events or make decisions in an ego-centric manner
 - Overly discount the future
 - A strong desire to maintain the status quo
 - Discount any problem (or unwelcome data) we have not personally experienced

(Predictable Surprises, The Disasters You Should Have Seen Coming And How to Prevent Them, Max H. Bazerman, Michael D. Watkins, Harvard Business School Press 2004, page 74 paraphrased)

Some effects of cognitive biases of organizations

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- Failure to devote necessary resources to collecting information about emerging threats
- Failure to disseminate information (“too sensitive”)
- Gaps in individual knowledge
- Failure to integrate knowledge that is available but dispersed

Cognitive biases organizations

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- Individual negligence and malfeasance
- Ill defined responsibility and no has incentive to act
- Lapses in capturing lessons learned
- Long-term erosion of institutional memory (personnel losses)
- (**Predictable Surprises**, *The Disasters You Should Have Seen Coming And How to Prevent Them*, Max H. Bazerman, Michael D. Watkins, Harvard Business School Press 2004, page 96 paraphrased)

Humanity

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“The real problem with humanity is the following:
We have Paleolithic emotions; medieval institutions; and god like technology.”

2009 Dr. E.O. Wilson,
Harvard University



Source: The Watchman's Rattle, Thinking Our Way Out of Extinction, Rebecca D. Costa, 2009 Vanguard Press, Kindle Edition

Complexity

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“...complexity is a greedy institution: The bigger and more intricate problems become, the more resources are needed to combat them. Eventually, a society can't amass enough resources to fend off the problems, which have gone unresolved for so long.”

Dr. Joseph Trainer

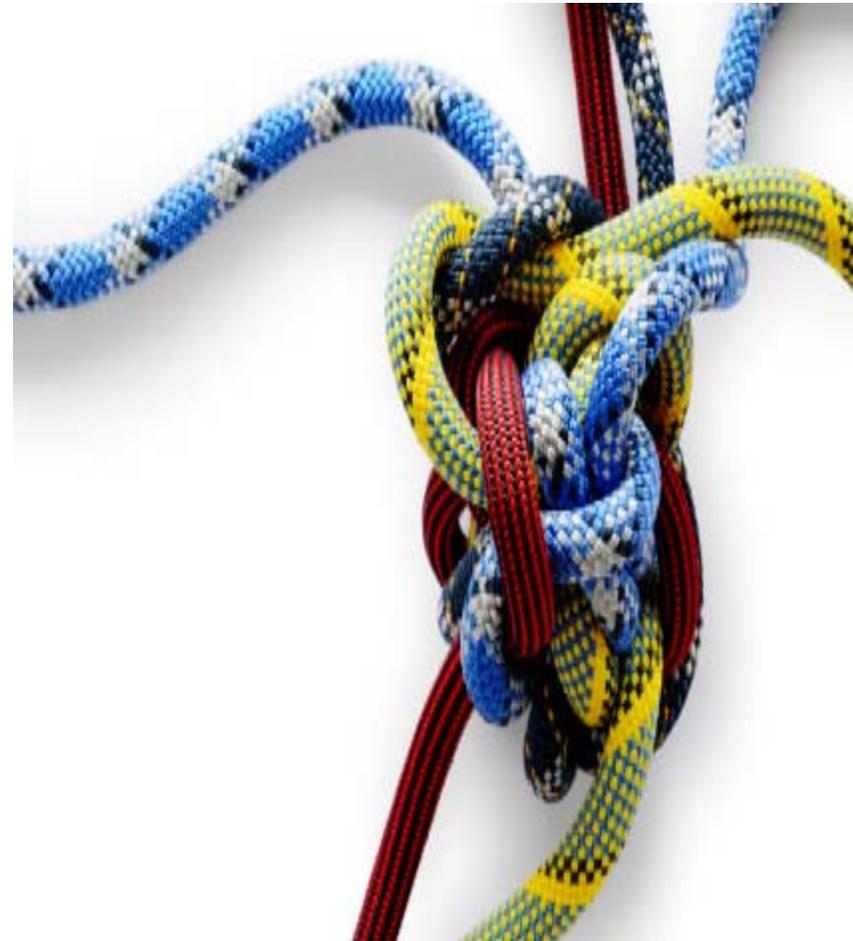
Source: The Watchman's Rattle, Thinking Our Way Out of Extinction,
Rebecca D. Costa, 2009 Vanguard Press, Kindle Edition

As problems become more complex

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- Organizations may reach a cognitive threshold where authority & company culture replace reason
- Managements blindly follow market “experts”
- Fail to recognize emerging legal, competitive, social and political trends that require new solutions, products and risk mitigation strategies



Mememes: units of cultural transmission or imitation

- Darwin's theory of natural selection applied to cultural ideas
 - Memes how "cultural" concepts are shared from generation to generation and person to person
 - With every passing generation some knowledge, behaviors, and beliefs
 - grow stronger
 - some grow weaker
 - some become extinct
- What happens when memes become too strong?

Source: The Watchman's Rattle

Über beliefs - trump knowledge, foster conformity

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- Supermeme
 - Any belief, thought or behavior that becomes so pervasive, so stubbornly embedded, that it is contaminates or suppresses all other beliefs and behaviors in a society
 - Supermemes are a response to complexity
 - The world is flat, GMOs are bad, treasuries are safe, FEMA will be there, derivatives are evil, free trade is good,
- Reason takes a back seat to dogma

Source: The Watchman's Rattle

False correlation

- The lazy person's research tool
 - Excessive reliance on authority
 - Excessive reliance on group think
 - Manipulate evidence to “prove” a point
 - Accepting correlation in lieu of proof of causality
- A by product of information overload
- The philosopher's problem: how do you separate fact from myth, speculation and dogma
- Lower standards of proof

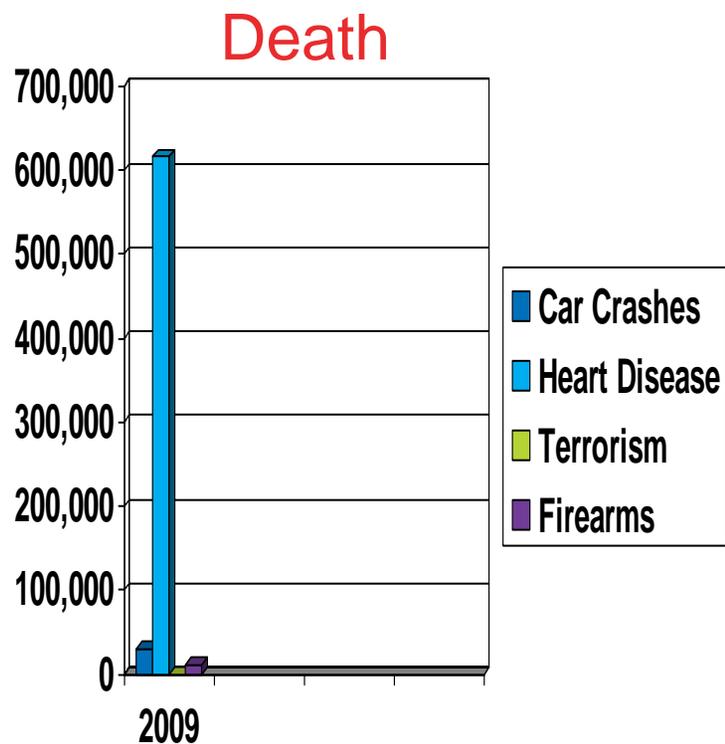
Low frequency / High Severity Earthquake + Tsunami + Nuclear

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False probabilities & squandered resources



Source: CDC 2007 Heart Disease & Firearms, FBI terrorism 2009, NHTSA 2009 Car crashes

The problem of rules of thumb: availability heuristic

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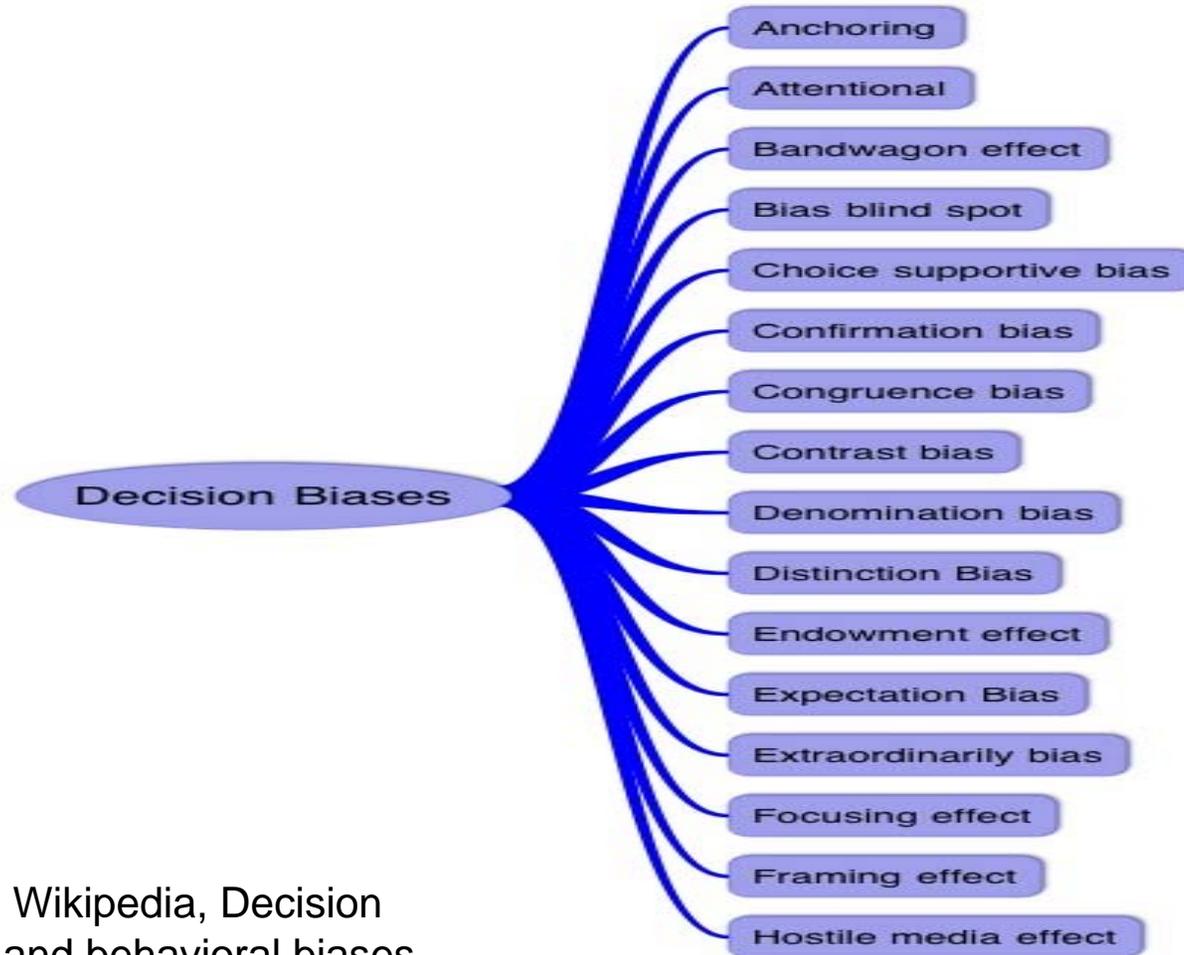
The Sandpile

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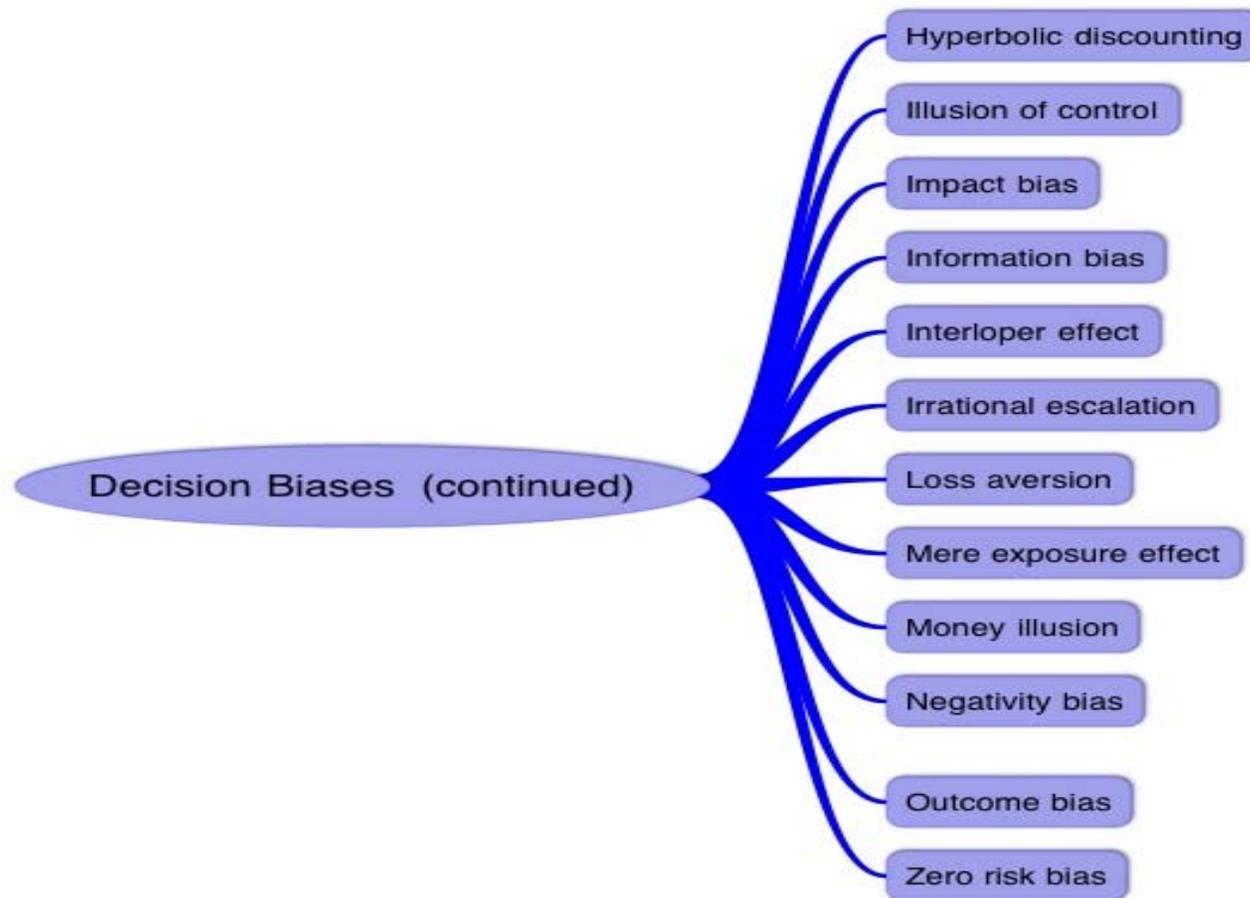


Decision Biases



Source: Wikipedia, Decision Making and behavioral biases

Additional types of decision biases



The problem of persuasion and long term commercial sustainability

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It is so darn frustrating

- You note trends that reveal an emerging uncertainty or you spot an emerging risk
- You can't persuade anyone
 - Competitive market will not let you condition the risk
 - The BOD is indifferent
 - The CFO's vision is limited by the needs of the quarter



Identification and persuasion

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- Two sides of same coin
 - Cognitive biases
 - Complexity
 - Memes and Supermemes
 - False correlations
 - The problem of fear
 - The sand pile



Commercial Sustainability starts with how we think



Commercial Sustainability

- Emerging uncertainty catastrophes
- The need to be proactive
- The mis-match between the accounting model and the reinsurance model as opposed to the legal model
- The challenge of retrospective solutions



Commercial Sustainability

The A³ approach

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- Awareness – global
 - Academic, economic, political, social, environmental, demographic, competitive
- Alignment
 - Embracing business strategies and risk mitigation strategies that are aware of past and sensitive to future
- Adaptability

