

Insurance and Behavioral Economics: Improving Decisions in the Most Misunderstood Industry

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What is Great and Not-so-Great about Insurance

- An insurance market can be a highly efficient and effective device for cushioning the consequences of large losses with a small premium.
- It can also encourage risk mitigation through premium reductions.
- Traditional economic theory focuses on its strengths and weaknesses in a rational choice model:
 - Strengths: risk pooling and risk transfer
 - Weaknesses: adverse selection and moral hazard
- Behavioral economics raises some additional problems and challenges for buyers, sellers, and policymakers particularly for low probability-high consequence (LP-HC) events.

Benchmark Models of Rational Choice

- Consumers choose insurance coverage that maximizes their expected utility.
- Firms determine price and availability of coverage that maximizes their expected profits.
- Governments regulate and subsidize insurance to maximize efficiency and equity.

Curbing our Enthusiasm and Channeling our Anxiety

Some insurance markets work well.

- Term life insurance
- Auto collision insurance
- Homeowners insurance

LP-HC events puzzle consumers, insurers and politicians/regulators.

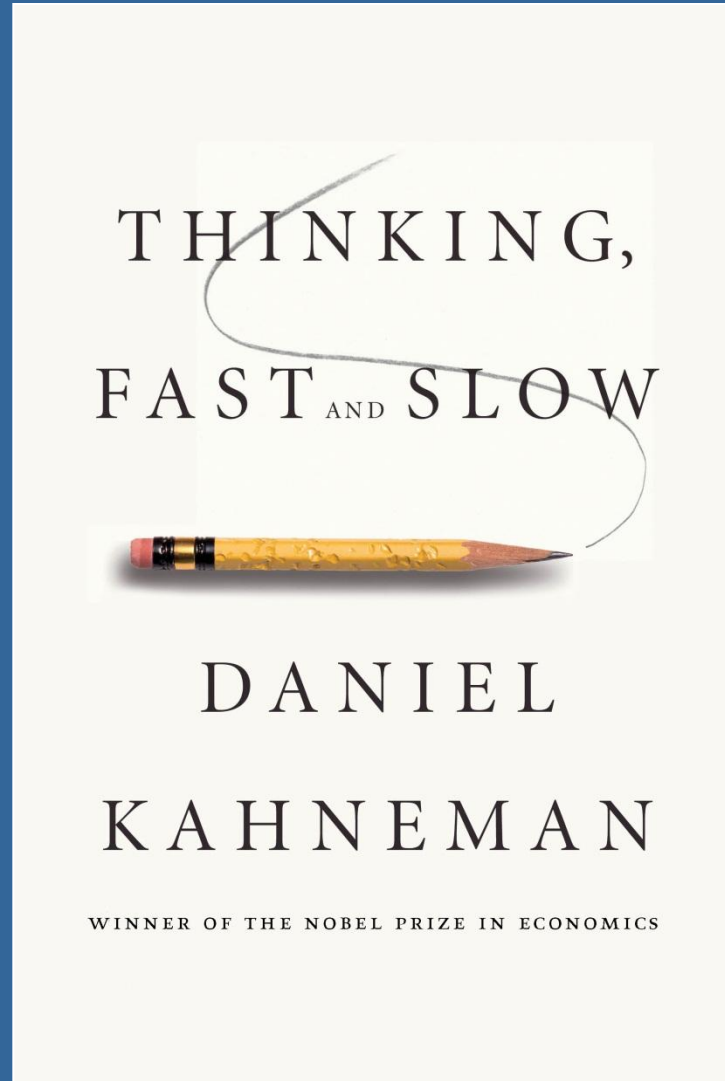
- Consumers: very limited personal experience with events
- Insurers: Correlated losses pose challenges
- Politicians/Regulators: Concerned with re-election, as well as fairness and equity

Insurance Challenges for LP-HC Events

- Insurance markets provide maximum benefits for LP-HC events.
- Both consumers' and insurers' actual behaviors do not fit the benchmark normative model.
- Consumers
 - Often underestimate risk in advance of the event
 - Use simplified choice rules (e.g. it will or will not happen to me)
- Insurers
 - Do not concern themselves with event prior to a disaster if it is below their threshold level of concern
 - Focus on large losses after the disaster and may claim that the risk is uninsurable

Framework for Analysis for Dealing with Extreme Events

Based on Daniel Kahneman, *Thinking, Fast and Slow*



Framework for Analysis for Dealing with Extreme Events (Converting System 1 to System 2 Behavior)

System 1 operates automatically and quickly with little or no effort

- Individuals use simple associations including emotional reactions
- Highlight importance of recent past experience
- Basis for systematic judgmental biases and simplified decision rules



System 2 allocates attention to effortful and intentional mental activities

- Individuals undertake trade-offs implicit in benefit-cost analysis
- Recognizes relevant interconnectedness and need for coordination
- Focuses on long-term strategies for coping with extreme events



Consumers' Behavior: Flood Insurance

The Lowland family has had a flood insurance policy for 3 years but hasn't suffered a loss. They decide insurance is a poor investment and cancel their policy even though it was subsidized and required as a condition for a federally insured mortgage.

System 1 responses by the Lowland family

- ***Myopic behavior:*** Views insurance as a poor investment given no losses for 3 years.
- ***Imperfect information:*** Lowland family is not aware of flood insurance requirement.

System 2 desirable behavior by the Lowland family

- ***Assessing the risk:*** Estimate likelihood of flood damage and potential consequences.
- ***Making tradeoffs:*** Determine whether it is financially worthwhile to continue to purchase insurance or cancel the policy if family mistakenly feel they have this choice.
- ***Accurate information:*** Knowledge that bank requires flood insurance as a condition for a mortgage.

Insurers' Behavior: Terrorism Insurance

Prior to 9/11 insurers did not charge anything for terrorism coverage despite the attempted bombing of the World Trade Center in 1993 and the Oklahoma City bombing and terrorist attacks throughout the world. After 9/11 most insurers refused to offer terrorism insurance or if they did provide coverage they charged extremely high premiums.

System 1 responses by insurers

- ***Misperception of risk:*** Prior to 9/11 insurers treated likelihood of a terrorist attack in the U.S. as below their threshold level of concern so ignored potential consequences.
- ***Ignoring Likelihood:*** After 9/11 insurers focused on enormous potential claim payments from another terrorist attack. As a result they felt terrorism was an uninsurable risk.

System 2 desirable behavior by insurers

- ***Risk assessments:*** Estimate chances of future terrorist attacks in different parts of the country and their potential consequences.
- ***Setting premiums and coverage:*** Determine whether to limit coverage in specific parts of the country and premiums to charge to maximize expected future profits.

Politicians' Behavior: Health Insurance

In the 2000 Presidential campaign for the Democratic nomination, Bill Bradley and Al Gore noticed that Medicare plan failed to provide coverage for prescription drugs. Bill proposed catastrophic coverage, with a deductible. Al, in contrast, argued for a lower deductible and less catastrophic coverage by claiming that under Bill's proposed plan "everyone will pay some premiums for this insurance, but most people will not collect anything." Experts agreed that Al won the debate.

System 1 responses by voters

- ***Insurance as an investment:*** Want to make a claim to justify premium expenditure.
- ***It will not happen to me:*** Most people do not want catastrophic coverage because they perceive the likelihood of their needing it as below their threshold level of concern.

System 2 desirable behavior by voters

- ***Celebrate no claims:*** Recognize that the best return on an insurance policy is *no return*.
- ***Make tradeoffs:*** Determine costs and benefits of policy with higher deductible and more catastrophic coverage than lower deductible and less catastrophic coverage.

Solution Strategies: Ad hoc versus Principles-based

- Judge some choices to be flawed and correct them.
 - Don't buy flight insurance, rental car insurance, product warranties.
 - Do buy flood insurance and annuities.
- Government corrective action may not be politically feasible when voters favor candidates who share their mistaken preferences.
- So we also propose “constitutional” principles that can guide and illuminate policy.

Principles for Insurance

- *Information Principle 1:* Make accurate risk assessments available to everyone.
- *Information Principle 2:* Identify and address interdependencies.
- *Information Principle 3:* Detect and adjust strategies for behavioral biases and heuristics due to System 1 behavior.
- *Contract Design Principle 1:* Premiums should reflect risk.
- *Contract Design Principle 2:* Define equity across buyers and sellers and apply it consistently.

Applying Principles: Flood Insurance

- *Information Principle 1:* Construct accurate flood maps and provide residents in flood-prone areas with likelihood and consequences of flood risk.
- *Information Principle 2:* Supplement insurance with well-enforced building codes and land-use regulations to deal with interdependencies.
- *Information Principle 3:* Offer multi-year insurance tied to the property not the individual and multi-year loans for mitigation.
- *Contract Design Principle 1:* Set premiums so they reflect risk.
- *Contract Design Principle 2:* Provide insurance vouchers for those *currently* in flood-prone areas who need special treatment (e.g., low income residents).

Applying Principles: Terrorism Insurance

- *Information Principle 1:* Create scenarios of different terrorist attacks and their resulting consequences and estimate relative likelihood of their occurrence.
- *Information Principle 2:* Determine nature of interdependencies from terrorist attacks (e.g., business interruption) and suggest strategies for dealing with them.
- *Information Principle 3:* Consider requiring terrorism insurance given tendency to perceive risk as below threshold level of concern.
- *Contract Design Principle 1:* Re-examine role of public and private sector in providing terrorism coverage and pricing of insurance and reinsurance.
- *Contract Design Principle 2:* Determine whether there is a need for insurance vouchers for those who deserve special treatment.

Applying Principles: Annuities as a Default

- *Information principle 1:* Convince people that there is a risk of “living too long.”
- *Information principle 2:* Convince consumers that annuities provide higher expected benefits and more security than do-it-yourself investment.
- *Contract design principle 1:* Encourage employers to offer efficient annuities as the default option for employees’ retirement assets.

Conclusions

- Insurance markets can do a lot in the face of serious risks.
 - They can help to spread risk of unavoidable disasters and offer incentives to mitigate risk.
 - But they cannot work miracles, especially in LP-HC settings.
- The challenge is to design strategies that can encourage System 2 rather than System 1 thinking.
 - Applying *Information* and *Design Principles* is an important first step.
 - Government can also help if it is wise, far-sighted and/or incentivized to play a constructive role.