INSURANCE & BEHAVIORAL ECONOMICS

Improving Decisions in the Most Misunderstood Industry

Howard C. Kunreuther
Mark V. Pauly
Stacey McMorrow

CAMBRIDGE

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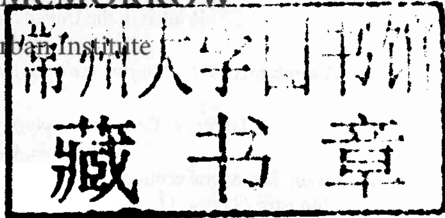
HOWARD C. KUNREUTHER
University of Pennsylvania

MARK V. PAULY
University of Pennsylvania

STACEY McMORROW
The Urban Institute



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INSURANCE AND BEHAVIORAL ECONOMICS

This book looks at the behavior of individuals at risk, insurance industry decision makers, and policy makers at the local, state, and federal levels involved in the selling, buying, and regulating of insurance. It compares their actions to those predicted by benchmark models of choice derived from classical economic theory. When actual choices stray from predictions, the behavior is considered anomalous. Howard C. Kunreuther, Mark V. Pauly, and Stacey McMorrow attempt to understand why these anomalies sometimes occur and sometimes do not, in many cases using insights from behavioral economics. The authors then consider if and how such behavioral anomalies could be modified.

This book is in no way a defense of the insurance industry nor an attack on it. Neither is it a consumer guide to purchasing insurance, although the authors believe that consumers will benefit from the insights it contains. Rather, this book describes situations in which both public policy and the insurance industry's collective posture need to change. This may require incentives, rules, and institutions to help reduce inefficient and anomalous behavior, thereby encouraging behavior that will improve individual and social welfare.

Howard C. Kunreuther is the James G. Dinan Professor of Decision Sciences and Business and Public Policy at the Wharton School, University of Pennsylvania, and co-director of the Wharton Risk Management and Decision Processes Center. Dr. Kunreuther is a member of the World Economic Forum's Global Agenda Council on Insurance and Asset Management for 2011–12, a Fellow of the American Association for the Advancement of Science, and a distinguished Fellow of the Society for Risk Analysis, which honored him with a Distinguished Achievement Award in 2001.

Mark V. Pauly is the Bendheim Professor in the Department of Health Care Management at the Wharton School of the University of Pennsylvania. One of the leading health economists in the United States, he is a former commissioner on the Physician Payment Review Commission and is a co–editor-in-chief of the *International Journal of Health Care Finance and Economics* and an associate editor of the *Journal of Risk and Uncertainty*. Professor Pauly has served on Institute of Medicine panels on public accountability for health insurers under Medicare.

Stacey McMorrow is a research associate in the Health Policy Center at the Urban Institute, Washington, DC. She has studied a variety of factors that affect health insurance coverage and access to care and has analyzed the potential impacts of national health reforms on employers and individuals.

Preface

This book looks at the behavior of individuals at risk, insurance industry decision makers, and policy makers at the local, state, and federal levels involved in the selling, buying, and regulating of insurance. It compares their actions to those predicted by benchmark models of choice derived from classical economic theory. Where actual choices stray from predictions, the behavior is considered to be *anomalous*. We attempt to understand why these anomalies sometimes occur and sometimes do not, in many cases using insights from behavioral economics. We then consider if and how such behavioral anomalies could be modified.

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A key element for achieving comfort is transparency, so that insurance plays its proper roles: providing a signal for safety; rewarding individuals for taking responsibility for their safety, financial well-being, and health; and providing proper compensation in a timely manner when misfortune strikes. While the principles and strategies we propose are sometimes intended to help decision makers conform more closely to the benchmark models of choice, we recognize that economic and political circumstances may make other choices preferable. We will be pleased

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if this book simply helps eliminate much of the confusion and mistrust that characterizes this most misunderstood industry.

A ROADMAP OF THE BOOK

Part I, *Contrasting Ideal and Real Worlds of Insurance*, provides a set of examples of insurance in practice. First, Chapter 1 discusses the purposes of the book and the roots of misunderstanding of insurance. Chapter 2 lays out the precepts of classical economics by formulating benchmark models of demand and supply of insurance. Using these models as reference points, Chapter 3 provides examples of insurance decision making in real-world settings and defines what we mean by "anomalous behavior." In Chapter 4, we identify situations in which the benchmark models work reasonably well on both the demand side (consumer behavior) and the supply side (firm and investor behavior).

Part II, *Understanding Consumer and Insurer Behavior*, focuses on the many real-world complications that conflict with some of the assumptions that guide the benchmark models of choice. These include imperfect information or misinformation on the risk, information asymmetry between buyers and sellers, and correlated losses. Chapter 5 characterizes what insurance markets should look like when these real-world conditions are present.

When the benchmark models fail to correctly predict consumer and industry responses, we develop alternative models using concepts from behavioral economics. In Chapter 6, we develop a model of choice that characterizes demand for insurance by focusing on the importance of goals and plans in making decisions under uncertainty. Chapter 7 then provides examples of demand-side anomalies indicating why they are likely to occur.

In Chapter 8, we turn to the supply side by developing descriptive models of insurers' behavior with respect to pricing their product and determining what coverage to offer, and the role that capital markets and rating agencies play in the process, indicating anomalies we observe along the way. By understanding why insurers deviate from benchmark models of choice, it is easier to understand the types of supply-side anomalies that currently exist. In Chapter 9, terrorism and natural hazards are

used to illustrate why insurers have behaved in ways that appear to be anomalous.

Part III, *The Future of Insurance*, relies on our understanding of consumer and firm behavior to provide answers to questions both narrow and broad. What information could be provided to help consumers decide what types of coverage they should consider buying? What steps can insurance firms take to continue to offer coverage at reasonable premiums even after large losses occur? How should capital markets be structured so that insurance firms can offer coverage for the widest range of situations at premiums that both investors and consumers find attractive? What role should the public sector play in encouraging or possibly requiring consumers and/or firms to undertake steps so their behavior conforms more closely to the relevant benchmark model?

In Chapter 10, we address the question as to who should bear the losses from untoward events and then look at ways to reduce the likelihood and costs of these risks. This can be accomplished by allocating resources efficiently and distributing them equitably and fairly. We then develop a set of information and design principles for evaluating the role that insurance can play with other policy tools for reducing risks and providing funds should a loss occur. Chapter 11 proposes a set of policies for correcting anomalies on the demand and supply sides by focusing on why consumers and insurers behave as they do and then suggesting ways in which they can be persuaded to improve their own welfare as well as that of society.

The next three chapters focus on insurance strategies for reducing risk. Chapter 12 proposes multiyear homeowners' insurance policies tied to property as a way of encouraging adoption of cost-effective, risk-reducing measures. Chapter 13 examines possible anomalous behavior in health insurance markets and how such behavior might be modified to keep medical costs and premiums at appropriate levels. Finally, Chapter 14 suggests how political and market frameworks might be structured so that insurance markets can improve individual and social welfare.

Acknowledgments

During the five years that we have formulated concepts and ideas for this book, we have learned a great deal from interactions with our colleagues and friends at the University of Pennsylvania and researchers interested in the role that insurance can play as part of the policy process. At the same time, we gained considerable insight from discussions with those who deal with insurance issues on a daily basis in real-world settings. They provided us with the nature of the institutional arrangements and decision-making processes that inform actual choices.

Special thanks go to Tom Baker, Debra Ballen, Jeffrey R. Brown, Cary Coglianese, Keith Crocker, Neil Doherty, Ken Froot, Jim Gallagher, Victor Goldberg, Gary Grant, Scott Harrington, Robert Hartwig, Eric Johnson, Robert W. Klein, Paul Kleindorfer, David Krantz, Michael Liersch, Jim MacDonald, Robert Meyer, Erwann Michel-Kerjan, Olivia Mitchell, Eric Nelson, Ed Pasterick, Jim Poterba, Richard Roth, Jr., Joshua Teitelbaum, Richard Thomas, and Joel Wooten for their insights and critical comments. Many of the concepts and ideas discussed in this book were critically evaluated by members of the Extreme Events project of the Wharton Risk Center, who helped us craft guiding principles and their implications. Many other concepts originated from discussions with colleagues at conferences and meetings, notably the National Bureau of Economic Research (NBER) Insurance Workshop. We are also grateful for financial support from the Wharton Risk Management and Decision Processes Center that enabled us to write this book.

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Howard C. Kunreuther
Mark V. Pauly
Stacey McMorrow
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PART I

CONTRASTING IDEAL AND REAL WORLDS OF INSURANCE

1

Purposes of This Book

Our goal in this book is to identify and analyze examples of behavior on the parts of consumers, insurance companies, investors, and regulators that could be characterized as "anomalous" if judged by standards of *rational behavior*. In this book, the term *rationality* is defined as economists have traditionally used it when analyzing decisions that involve risk and uncertainty. We characterize behavior as anomalous when it violates these standards.

Even though the economist's notion of rationality is well established, it is not the only or even the best way to portray what people may mean by appropriate behavior. In fact, we ourselves often behave in ways that do not conform to these formal principles of rationality and can provide good reasons or excuses for these deviations. We and others (Cutler and Zeckhauser 2004; Kunreuther and Pauly 2006; Liebman and Zeckhauser 2008) have noted examples of behavior by consumers and suppliers of insurance that violate the economic models of rational choice.

The main message from the behavioral economics revolution is that real-world agents often do not make choices in the way that economic models of rationality suggest they should. In evaluating the results of such behavior and suggesting what strategies one should pursue, researchers still normally turn to the conventional economic models as normative benchmarks. For this reason, formal economic models of demand and supply developed over decades are often used as benchmarks for evaluating the behavior of those who are considering purchasing insurance and those who decide whether or not to offer coverage for specific risks.

Given the intellectual history, logical consistency, and strategic implications of these rational economic models, we use them as a standard in this book. However, there may be times when it is appropriate to deviate from these *benchmark models*. In fact we sometimes argue that, even as normative standards, the benchmark models may not be logically or politically appropriate. We will therefore examine the nature of consumer and insurer behavior, explain their actions or inaction to the extent we can, and offer prescriptions for improving choices.

We have three broad goals for this book. We want buyers of insurance to have a firmer grasp as to how they can improve their decisions on whether to purchase specific types of insurance and if so, how much coverage to buy. We want insurance companies to understand more about their customers' motivations and biases and thus how to better construct and market their products. We also want legislators and regulators to make better decisions about how and when to intervene in private insurance markets.

THE ROOTS OF MISUNDERSTANDING OF INSURANCE

The fact that insurance expenditures in the United States are in the trillions of dollars does not imply that consumers obtaining coverage and companies selling policies are making the voluntary decisions implied by classical economics textbooks. The most obvious reason, already noted, is that decision makers may not use these models in determining how much coverage (if any) to demand or what price to charge when supplying insurance. A less obvious reason is that many insurance purchases are not made voluntarily by the individuals at risk, but are often required by institutional arrangements or made financially attractive by firms to their employees, sometimes in response to tax incentives. For example, banks and financial institutions normally require insurance against property damage as a condition for a mortgage. Almost every state mandates proof of third-party automobile insurance when registering a car and requires firms to purchase workers' compensation insurance to cover their employees against the costs of on-the-job accidents. Many employers offer their workers some tax-free life insurance and subsidize the cost of employees' health insurance, so that there is no reason for any person

to calculate the resulting costs and expected benefits of this coverage. In these cases, individuals are merely responding to legal requirements or financial incentives.

For those insurance policies purchased by individuals voluntarily, decisions as to whether to buy coverage still might not fit the standard economic models. Some types of individually chosen insurance are said to be *overpurchased*, such as warranty protection and low-deductible coverage on one's home, health, and automobile. On the other hand, many consumers and firms *underpurchase* protection against catastrophic losses to property or against very expensive medical procedures. And while mortgage lenders require standard homeowners' coverage, they do not require earthquake protection; few residents in seismic areas of California purchase this coverage today. Many financial institutions also do not enforce the requirement that residents in flood-prone areas with federally insured mortgages purchase flood insurance.

The supply side of the market is also subject to behavior that diverges from what one would expect based on economic models. Insurers are often reluctant to continue offering coverage against risks from which they have recently suffered severe losses, as illustrated by the refusal of many insurers to continue to offer terrorism coverage following the attacks of 9/11 or the reluctance of insurers to continue to offer coverage in Florida against wind damage from hurricanes after Hurricane Andrew in 1992. There are a number of possible explanations for such behaviors, which we will examine in later chapters of this book.

One major cause of misunderstanding about insurance among consumers is an unrealistic expectation about how they will feel about losses they may (or may not) experience. People often choose coverage that does not fully protect them in order to keep their premiums low, but when they suffer a loss they are unhappy that not all the damage is covered. However, they are also unhappy when they have paid a premium and a loss does *not* occur because they perceive that the insurance was an unwise investment.

It is inevitable that most buyers of insurance will not get anything back on their policies in any given year or nearly as much as they paid in premiums over time. That is the nature of the insurance business. When purchasing insurance, a person's mantra should be *the best return*

is no return at all, knowing that one is protected financially against a potential loss.

But consumers often lose sight of the fundamental goal of buying coverage. It is the separation in time between paying for insurance and getting back benefits that confuses and frustrates consumers. When they have voluntarily purchased policies for several years without experiencing any losses, they often do not renew their policies. In the case of flood insurance, homeowners at risk are likely to cancel this coverage after several no-loss years, even doing so illegally when required by lenders to purchase and maintain a policy.

When insured individuals do suffer a loss, they are naturally inclined to seek the most generous benefits they can, even when their policy explicitly limits the type of losses for which they are allowed to file claims. Consider homeowners inundated by the Florida storms in 2004 and Hurricanes Katrina, Rita, and Wilma in 2005 who did not have flood insurance. Many of these victims tried to collect on water damage caused by the storms' surges even though their policies specifically restricted coverage to wind damage, not water damage. These homeowners had insurance, but not the right coverage.

Of course, if people had known in advance that a hurricane would hit, they might have paid attention to the fine print and bought flood insurance to cover storm surge and other water damage from the storm. If they knew they would never have a fire in their home during their lifetime, they would not voluntarily buy fire insurance. The realization that you cannot know the future with certainty spills over as irritation with insurance. People fail to recognize that this product is designed to help them cope with this uncertainty by giving up a modest amount of money in most circumstances in order to be able to return many multiples of the premium in the event of rare bad luck. It is thus not surprising that consumers are much less likely to report being satisfied with insurance than with products that give them tangible benefits they enjoy immediately after purchase.

Another source of confusion and misunderstanding that leads to disappointment is the often complex and ambiguous language in insurance contracts. Much of the billions of dollars of damage wrought by Hurricane Katrina on the Gulf Coast of Mississippi occurred when

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