

Contents

Acknowledgments	xi
Introduction: The Jogger's Dilemma <i>or</i> What Should We do When the Safe and the Dangerous are Inextricably Intertwined?	1
Objective Risk	2
The Principle of Uncertainty, the Axiom of Connectedness, and the Rule of Sacrifice	4
Rival Strategies for Securing Safety	6
Diverse Arenas for Studying Risk	10
General and Global Resources	13
SECTION I: STRATEGIES	
1. Trial and Error Versus Trial Without Error	17
No Trials Without Prior Guarantees Against Error	19
The No-Safe-Dose Argument	23
Incrementalism as Risk Aversion	25
Incrementalism as Trial With Small Errors	26
Playing It Safe	27
Safety Comes from Use	30
"Trial Without Error" as Public Policy	34
A Question of Proportion	36
2. Opportunity Benefits Versus Opportunity Risks	39
Why Aren't We All Dead? Incrementalism and the Importance of Connectedness	40
Opportunity Benefits and Natural Disaster	42
Safety Risks: Seeking Safety May Increase Danger	48
Risky Safety: Accepting Risks May Increase Safety	50
Net Benefit	54
Reprise	57
3. Richer is Sicker Versus Richer is Safer	59
Health and Wealth	61
Poorer is Unhealthier	65
Medical Care Versus Income	66
The "Hidden Hand" in Safety	69
Preventing Parts from Exploiting Wholes	72
Competition Increases Safety	74

4. Anticipation Versus Resilience	77
Resilience	78
Is Prevention Better than Alleviation?	85
The Reverse Cassandra Rule	91
Interrogating the Unknown	92
A Mental Experiment	95
Lovins Versus Lovins: Are Resilience and Efficiency Opposed?	97
The Distributional Question	102

SECTION II: CONDITIONS

5. Nonhuman Life Forms Cope with Danger	111
Principles of Stability	112
Anticipation Versus Resilience in Nonhuman Life Forms	118
Conditions of Applicability	121
6. Does Adding Safety Devices Increase Safety in Nuclear Power Plants? (with Elizabeth Nichols, and an appendix by Robert Budnitz)	125
Do More Safety Devices Add Up to More Safety?	126
The Parts Versus the Whole	131
The Nuclear Island	134
System Interaction	135
Toward Performance Standards (by Robert Budnitz)	141
Pressure to be Perfect	147
7. The Battle Within: How the Human Body Defends Itself (with Dennis Coyle)	149
The Risks	150
Goals and Strategies	153
Defense Mechanisms: Taking the Offensive	155
Pulling Up the Drawbridge	156
The Battle Within	157
Recovery Through Growth	160
Holes in the Armor	160
Diversity of Form and Redundancy of Function	162
Plasticity, Flux, and Feedback	164
Anticipation and Resilience in the Human Body	165
8. From Resilience to Anticipation: Why the Tort Law is Unsafe (with Daniel Polisar)	169
A Brief History of American Tort Law	171
From Negligence to Strict Liability	172
Planning to Fail: The Crashworthiness Doctrine	176
From Contributory Negligence to Deep Pockets	178

Insurance, Anticipation, and Safety	181
Regulation	182
Safety Consequences	183
SECTION III: PRINCIPLES	
9. Why Less is More: A Taxonomy of Error	
<i>(with William R. Havender)</i>	189
Ignoring Opportunity Benefits	191
Ignoring the Risks Associated With a Proposed Remedy	195
Ignoring Large Existing Benefits While Concentrating on Small Existing Risks	197
Ignoring the Effects of Economic Costs on Safety	198
Ignoring the Inevitable Tradeoff Between Type I (Errors of Commission) and Type II (Errors of Omission)	199
Ignoring Risk Displacement	201
10. The Secret of Safety Lies in Danger	205
Safety is a Balancing Act	207
Safety Degrades, <i>or</i> , The Godfather Knows Best	209
Health is Not the Only Kind of Safety	212
But What About the Future?	213
Rights or Special Interests	217
Anticipation Versus Resilience Redux	220
Discovering Safety	221
The Politics of Anticipation	223
The Fear of Regret	225
Searching Versus Scooping: Safety as a Process of Discovery	227
Notes	229