

Index

- Accidental events, 2-3
Accidental hazard-making, 55
Accidents, 40-42, 83
 in reactor operation, 88-92
Act of God, 2-3
Act of Man, 2-3
Actors in the Mercury Pollution
 Controversy in Sweden (case
 study), 57-62
Adams, 28, 30, 32
Adaptations, 7-11
Adjustments, 7-11
Administrative process, 74-75
Administrative theory
 bureaucratic, 48-49
 rational, 48
Adversary process, 74-75
Agricultural worker, 40
Airline pilot, 40
Altouney, 50
Asbestos, 76-78
Asbestos workers, 77
Assessment, environmental impact, 66
Assessment, technology, 66-67
Assessors, 55, 57
Aversive risk, 12, 35-40, 49, 50

Balanced risk, 12, 40, 49, 50
Bangladesh, 49
Battelle Environmental Evaluation
 System, 66
Benefit-cost, *see* Cost-benefit
Benefit-risk, 12, 50
Benefit-risk analysis, 43-48
Benefit-risk biases, 50
Bias
 in probability assessments, 32
 in risk assessments, 50, 86
Boffey, 74
Bradley (case study), 50-53
Brown, 18
Brubaker, 4-5, 6, 8-9, 11
Bulloch, 41
Burton, 32-35 (case study), 37

Carter (case study), 75-78
Case studies
 Actors in the Mercury Pollution
 Controversy in Sweden, 57-62
 Chemical Substances in the Work
 Environment: Some
 Comparative Aspects of U.S.S.R.
 and U.S. Hygienic Standards,
 68-73
 Choice of Water Source in East Africa,
 51-53
 Iron Ore, Asbestos and Drinking
 Water, 75-78
 Risk Assessment of Nuclear Reactors:
 Three Views of the Reactor
 Safety Study, 87-97
 Risk from Nature in London,
 Ontario, 32-35
 Stratospheric Pollution and the
 Earth's Ozone, 21-25
Chemical Substances in the Work
 Environment: Some Comparative
 Aspects of U.S.S.R. and U.S.
 Hygienic Standards (case study),
 68-73
Chemical worker, 41
Chemicals in work environment
 MPC-TLV values, 68-73
 national standards, 46, 47
 U.S.A.-U.S.S.R. comparison, 68-73
Choice, ordered, 50-53
Choice of Water Source in East Africa
 (case study), 51-53
Coal miner, 40
Coates, 67
Cognitive processes in risk estimation,
 32
Cohen, J. J., 43-44
Cohen, John, 63
Commission of inquiry, 74-75
Commodity market, 75
Common mode failure, 94
Commoner, 100
Communication, 100
Compound hazards, 3-4
Consequences of events, 1-2, 4-7, 98
Coping actions, 1, 7-11, 13, 14
Cost-benefit, 12, 50, *see also* Cost
 effectiveness studies
Cost effectiveness studies, 40-43
Critical science, 15
Crutzen, 21, 23, 24
Czechoslovakia, 46, 47

Damage, 4, 6, 40, 43, 88, 90

- Decision analysis, 64–65
- Decision tree, 3, 64
- Delphi technique, 64
- Developed countries, *see* Industrialized countries
- Developing nations, 6, 43, 68, 86, 99
- Diagnosis of hazards, 19, 20–21
- Disease, 37, 40, 43
- Disruption, 4, 6
- Divining, 63
- Douglas, 36
- Dworkin, 82, 83

- Ehrlich, 28–29
- Environment and society, 1–2
- Environmental hazard, 12, 79
- Environmental impact assessment, 66
- Environmental monitoring, 65–66
- Environmental Mutagen Society, 16, 17
- Events
 - accidental, 2–3
 - analysis of, 3
 - incidental, 2–3
 - natural hazard, 1–4
- Experience, in risk estimation, 31
- Extrapolation, in risk estimation, 27–28

- Fault tree, 3
- Fault tree methodology in Reactor Safety Study, 93–94
- Federal Republic of Germany, 46–47
- Ford, 83
- France, 100
- Fundamental research, 14–15, 20

- Gains, 4, 6
- Gambling, in risk assessment, 75
- German Democratic Republic, 46–47
- Golant, 37
- Goodman, 15
- Group processes, 74–75
- Guardians, 55, 56–57

- Halverson, 79, 80
- Hammond (case study), 21–25
- Hazard
 - different from risk, 87, 95
 - greater than risk, 82–83, 93
 - less than risk, 83–87, 90
- Hazard awareness trends
 - media reports, 79–80
 - public opinion, 80–81
 - scientific research reports, 79–80
- Hazard consequences, 1–2, 4–7, 98
- Hazard events, 1–4, 98
- Hazard identification, 12–21, 98–99
- Hazard-makers, 55–56
- Hazards, catastrophic, 95–97
 - compound, 3–4
 - environmental, 12, 79
 - intensive, 3–4
 - natural, 1, 81, 82
 - occupational, 46
 - pervasive, 3–4
 - routine, 95
 - technological, 4
- Health effects, 88–89
- Health surveillance, 65–66
- Hierarchy of risk consequences, 6, 7 and measurement scale, 38–39, 40
- Hohenemser, 90, 95–97
- Holmes, 37
- Howard, 64–65
- Hungary, 100
- Hyman, 63

- Illness, 37
- Incidental adjustments, 11
- Incidental events, 2–3
- Incidental hazard-making, 55
- Industrialized countries, 4, 43, 49, 68, 81
- Inference (*see also* Extrapolation)
 - in hazard identification, 19
 - in risk estimation, 31–32
- Information management, 99
- Institute for International Social Research, 81
- Insurance, in risk assessment, 75
- Intensive hazards, 3–4
- Intuition, in risk estimation, 26, 30–31
- Involuntary exposure, risk, 43–45
- Iron Ore, Asbestos and Drinking Water (case study), 75–78

- Jahoda, 63
- Jensen, 18
- Johnston, 21, 24
- Judgement processes, 63–65
- Judicial review, 74

- Kates (case study), 32–35
- Kendall, 90, *see also* Sierra Club-Union of Concerned Scientists
- Kenya, ordered choice of water source, 50–53
- Kirkby, 55

- Lake Superior, taconite pollution, 75–78
- Lamb, 74
- Lave, 43
- Lawless, 80, 84–85, 86, 87
- Leopold Matrix, 66
- Levels of tolerance (Starr), 10

- London, Ontario, risk estimation of natural hazards, 32-35
- Lowrance, 31, 50
- Lundqvist, 57-62 (case study), 79, 86
- McDonald, James, 21
- McHarg Overlays, 66
- Mack, 63
- Magnuson, 68, 73
- Manufacturing worker, 40
- Masuda, 37
- Maugh (case study), 21-25
- Mazur, 32
- Media distortion, 86
- Mercury pollution in Sweden, 57-62, 79, 86
- Mesabi range, 76
- Mirabito, 18
- Moglewer, 90, *see also* Sierra Club-Union of Concerned Scientists
- Monitoring
 - environmental, 65-66
 - of hazards, 18, 20-21
- Morbidity, 4, 40
 - data base, 49
- Mortality, 4, 40, 42
 - data base, 49
- Multiple attribute utility methods, 48
- Munn, 18, 66
- 'Natural base' (Starr), 49
- Natural disasters, 43, 82, 83
- Natural events, 1-4
- Natural hazards, 1, 81, 82
- Nature* (journal), 79
- Nuclear fuel cycle, 95-97
- Organized modes of assessment
 - group processes, 74-75
 - methods, 62-74
 - roles, 55-57
- Otway, 12, 37, 41-42, 43-44, 55
- Ozone layer, 21-25
 - researchers, 22-25
- Panel on Assessing Potential Ocean Pollutants, 16, 18, 19, 20
- Pathway analysis, 3
- Pervasive hazards, 3-4
- Pijawka, 79, 80
- Practical science, 15
- Processes of assessment
 - administrative, 74-75
 - adversary, 74-75
 - commission of inquiry, 74-75
 - judicial review, 74
- Public alarm over technology, 80, 84-85, 87
- Public interest science, 15
- Pure science, 14-15
- Qualified probability, *see* Subjective probability
- Quantification, in risk estimation, 28-30
- Rapoport, 83
- Rasmussen, Norman C., 88, 91
- Rasmussen Report, *see* Reactor Safety Study
- Ravetz, 15
- Reactor Safety Study
 - critique of, 93-95
 - excerpt, 90-92
 - summary, 87-90
- Reduction
 - of damages, 7
 - of risks, 40-43
- Regulation, 48, 74
- Research
 - critical (public interest) science, 15
 - practical science, 15
 - pure (fundamental) science, 14-15, 20
- Reserve Mining Company, 75-78
- Revelation, in risk estimation, 26
- Risk acceptability
 - in drugs, 46
 - individual preferences in, 46, 49
 - national differences in, 45-47
 - societal preferences in, 43-45
- Risk assessment attitudes, 81-87
 - media distortion, 86
 - of public, 86-87
 - worry bead hypothesis, 87
- Risk assessment methodology, 12-14, 98-100
- Risk Assessment of Nuclear Reactors: Three Views of the Reactor Safety Study (case study), 87-97
- Risk assessment sequences, 54
- Risk aversion, 35-40, 48-49
- Risk balancing, 40, 41, 49, 99
- Risk-benefit, *see* Benefit-risk
- Risk estimation, 12-14, 26-35, 98
- Risk evaluation, *see* Social evaluation
- Risk from Nature in London, Ontario (case study), 32-35
- Risk-takers, 55, 56
- Risky shift, 50
- Roschin (case study), 68-73
- Rowe, 6, 7, 38-39, 40, 43
- Safety judgements, 50
- Scenarios, 28-29
- Science
 - critical, 15

- fundamental, 14–15
- practical, 15
- public interest, 15
- pure, 14–15
- Science* (journal), 79
- Screening of hazards, 15–18, 20–21
- Sierra Club-Union of Concerned Scientists, 93–95
- Sinclair, 42, 49
- Slovic, 3
- Social evaluation, 12–14, 35–54, 99–100
- Society and environment, 1–2
- Standard-setting
 - as form of risk assessment, 67–68
 - in chemicals, 46
 - in drugs, 46
 - in U.S.S.R. and U.S.A., 68–73
 - in workplace, 46–47
 - international differences, 46, 47, 67–68
- Standards and regulations, 48
- Starr, 10, 40, 43–45, 49, 56
- Statistical indicators of hazards, 81
- Steel worker, 40
- Stratospheric Pollution and the Earth's Ozone (case study), 21–25
- Subjective judgement, in risk estimation 28–30
- Subjective probability, in risk estimation, 28–30
- Sweden, 46–47, 100
 - administrative officials in mercury debate, 57–62
 - environmental institutions, 57–62
 - scientists in mercury debate, 57–62
- Surveillance, health, 65–66
- Taboo, 35–36, 48
- Taconite pollution, 75–78
- Tanzania, ordered choice of water source, 50–53
- Taxonomies, 98
- Technological hazards, 4
- Technology assessment, 66–67
- Timofeevskaya (case study), 68–73
- U.S.S.R., 46
 - comparative chemical standards, 68–73
- Uganda, ordered choice of water source, 50–53
- Uncertainty, 50
- United Kingdom, 46
- United States, 11, 20, 36, 40, 46, 66, 100
 - comparative chemical standards, 68–73
- Utility
 - scale of, 46
 - theory, 49
- Vogt, 63
- Voluntary exposure, risk, 43–45
- Voluntary–involuntary risk theory (Starr), 43–45, 56
- WASH-1400, *see* Reactor Safety Study
- Weinberg, Alvin, 87
- Westcott, 26
- White, A. U. (case study), 50–53
- White, G. F. (case studies), 32–35, 50–53
- Whyte, *see* Kirkby
- Wiggins, 36–37, 40
- Worry bead hypothesis, 87
- Wraith, 74
- Wyler, 37

