Nuclear Risk, STS, and the Democratic Imagination

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- National Academies Societal Challenges Facing Nuclear Workshop
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Three themes

- STS and nuclear power have evolved together
- STS scholarship and nuclear policy|politics are intertwined
- Co-evolution is transnational

Nuclear Risk in Politics and Culture

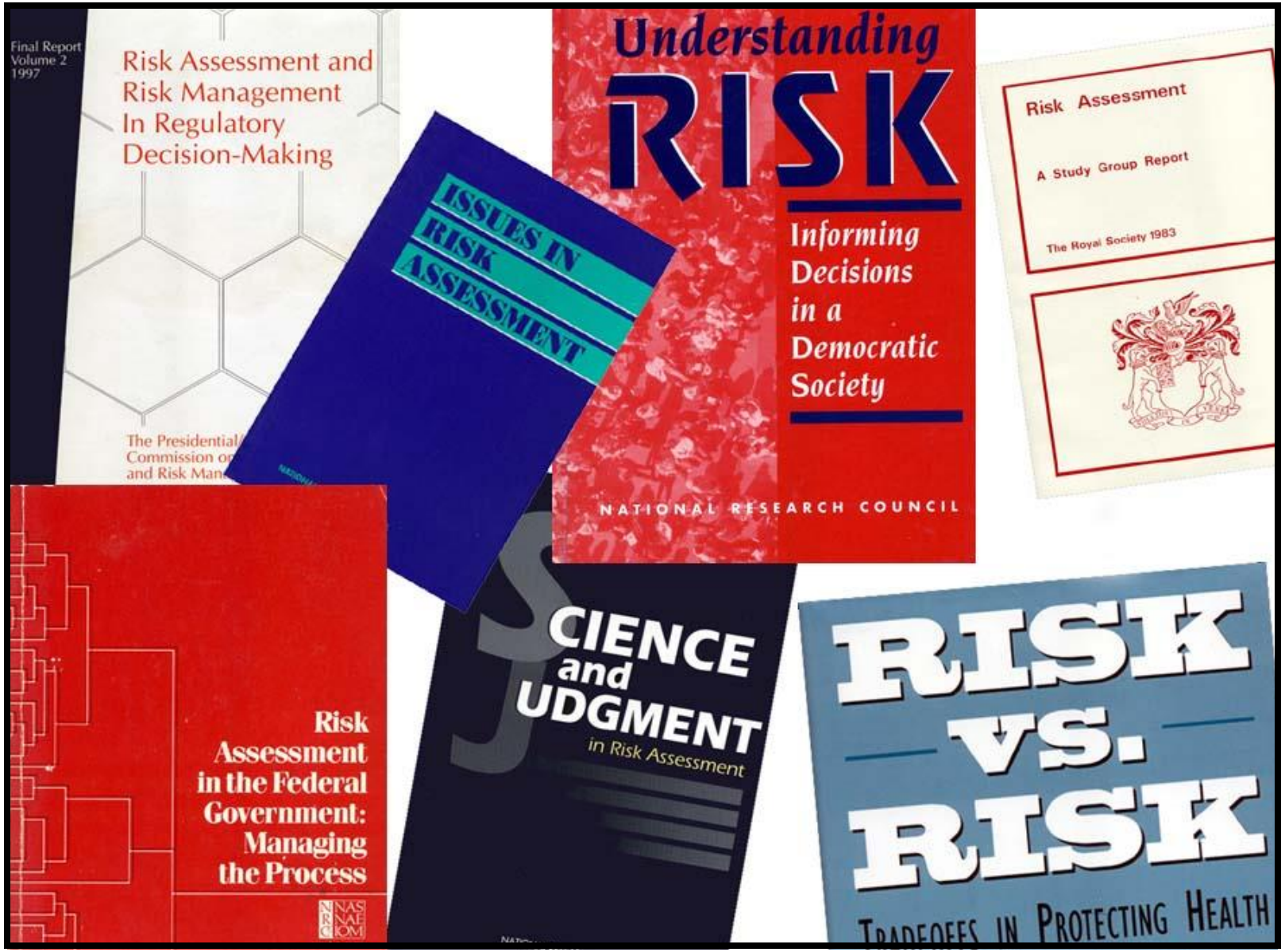
- 1945: Bombing of Hiroshima and Nagasaki
- 1946: John Hersey, *Hiroshima*
- 1957: Windscale fire in UK
- 1975: WASH-1400, 'The Reactor Safety Study
- 1975: Wyhl anti-nuclear protest in Germany
- 1978: Vote against Zwentendorf nuclear power plant in Austria
- 1979: Three Mile Island accident in USA
- 1979: The China Syndrome film
- 1986: Chernobyl in former USSR
- 1998: German “nuclear consensus”
- 2011: Fukushima in Japan
- 2011: German phaseout (by 2022) reinstated
- 2016: Hinkley Point approved in UK
- 2019: French public debate on 5th National Plan for the Management of Radioactive Materials and Waste
- 2019: Appropriations for Yucca Mountain nuclear waste repository killed in committee

Politics, Policy, and STS Scholarship

39 years since Mary Douglas and Aaron Wildavsky, *Risk and Culture* (1982)
39 years since Nelkin and Pollak, *The Atom Besieged* (1982)
39 years since Brian Wynne, *Rationality and Ritual*
38 years since US National Research Council's *Red Book* on risk assessment (1983)
37 years since Charles Perrow, *Normal Accidents* (1984)
35 years since Ulrich Beck, *Risk Society* (1986)
35 years since Langdon Winner, *The Whale and the Reactor* (1986)
33 years since Spencer Weart, *Nuclear Fear* (1988)
30 years since Brian Balogh, *Chain Reaction* (1991)
23 years since Gabrielle Hecht, *The Radiance of France* (1998)
6 years since Sheila Jasanoff and Sang-Hyun Kim, eds., *Dreamscapes of Modernity* (2015)

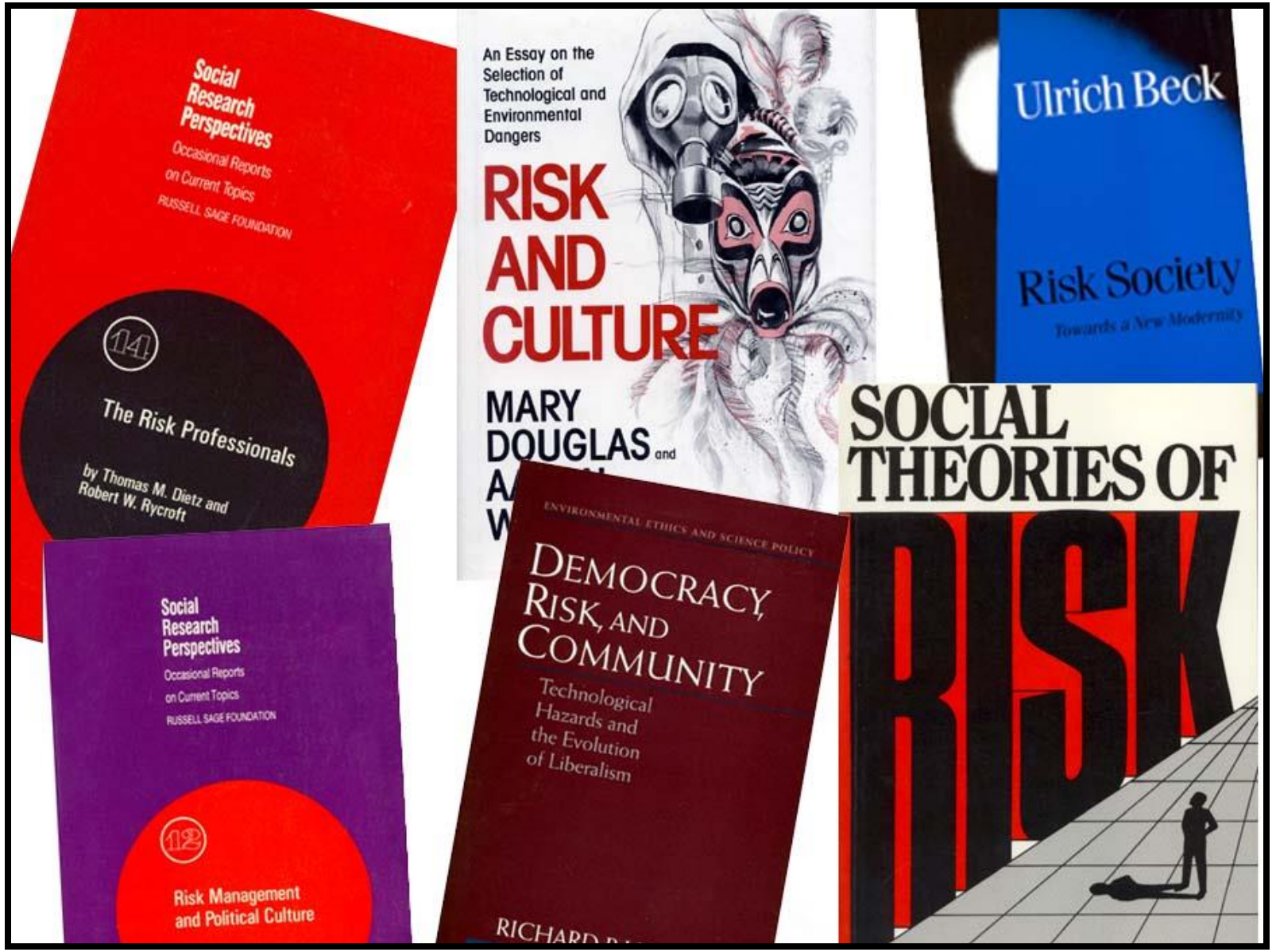
Two cultures of analysis…

- ***The technocratic approach***
- ***The social-cultural approach***


Final Report
Volume 2
1997
Risk Assessment and
Risk Management
In Regulatory
Decision-Making
ISSUES IN
RISK
ASSESSMENT
Understanding
RISK
Informing
Decisions
in a
Democratic
Society
NATIONAL RESEARCH COUNCIL
Risk Assessment
A Study Group Report
The Royal Society 1983
Risk
Assessment
in the Federal
Government:
Managing
the Process
CIENCE
and
UDGMENT
in Risk Assessment
RISK
vs.
RISK
TRADEOFFS IN PROTECTING HEALTH

Characteristics of the technocratic approach

- **Quantification:** Defining risk in terms of probability of harm and magnitude of harm
- **Boundary work:** Laying out sequence of assessment, management, and communication
- **Rationalization:** Developing new methodologies of risk assessment
- **Framing:** Assessing economic trade-offs
- **Deficit model:** Evaluating public perceptions of risk
- **Depoliticization:** Creating new management institutions (e.g., Nuclear regulatory Commission)


Social Research Perspectives
Occasional Reports on Current Topics
RUSSELL SAGE FOUNDATION
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The Risk Professionals
by Thomas M. Dietz and Robert W. Rycroft
An Essay on the Selection of Technological and Environmental Dangers
RISK AND CULTURE
MARY DOUGLAS and
Ulrich Beck
Risk Society
Towards a New Modernity
SOCIAL THEORIES OF
RISK
Social Research Perspectives
Occasional Reports on Current Topics
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Risk Management and Political Culture
ENVIRONMENTAL ETHICS AND SCIENCE POLICY
DEMOCRACY, RISK, AND COMMUNITY
Technological Hazards and the Evolution of Liberalism

Characteristics of the social-cultural approach…

- Society: analyzing the social construction of risk
  - How do risks come to be recognized?
  - Why are there differences across nations?
  - Why are some risks not acknowledged?
- Culture: probing the cultural foundations of risk
  - How does history matter?
  - What is the role of discourse?
  - How does political culture affect the recognition, assessment, and management of risk?

- **Risk assessment (RA) should be separate from risk management (RM).**
- **RA should not include economic, social, and political concerns.**
- **RA can be and should be science-based.**
- **There is a clear boundary between science and politics; there exist pre-established criteria by which we can decide whether an analysis is science-based.**

- **Judgment enters into both RA and RM; there can be no clear separation.**
- **RA occurs within particular frames which reflect social and political values and differ across cultures.**
- **RA is limited by uncertainty and ignorance.**
- **The boundary between science and policy is not given in advance; criteria are established by negotiation and convention.**