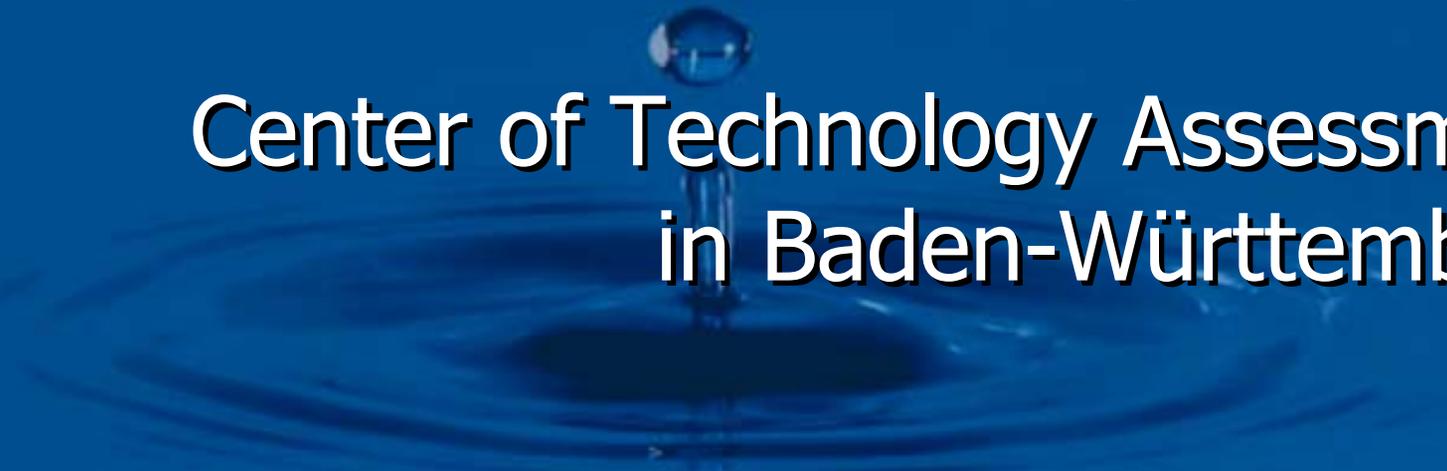


Risk Perception, Communication, and Public Policy

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Part 1

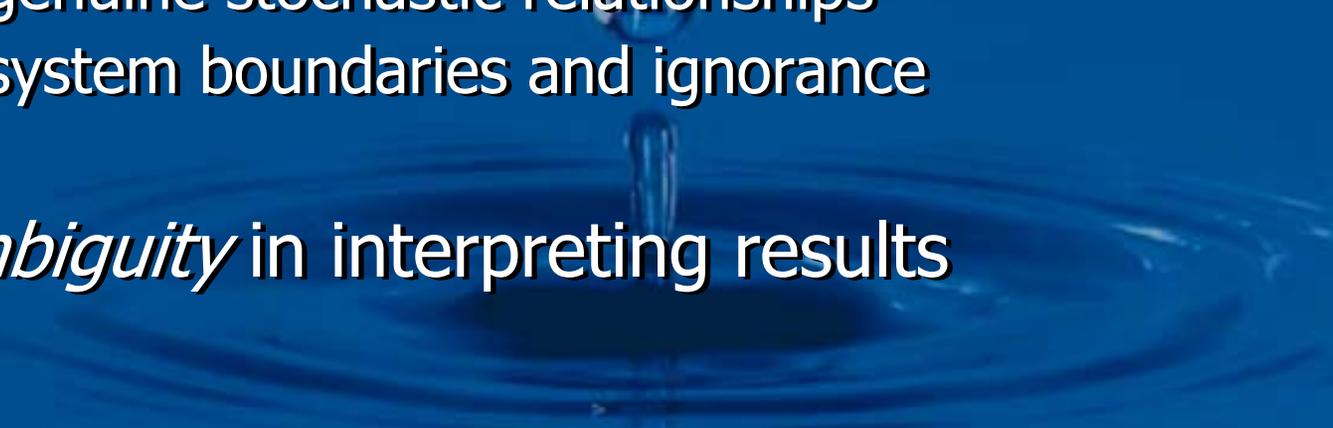
*What is special about **risk**?*

The challenges for public
perception and communication

A water droplet is captured in mid-fall, just above the surface of a pool of water. The droplet is perfectly spherical and reflects light. Below it, a small splash of water is visible, with several concentric ripples spreading outwards across the surface. The background is a solid, deep blue color.

Risk Characteristics

Three challenges of risk management

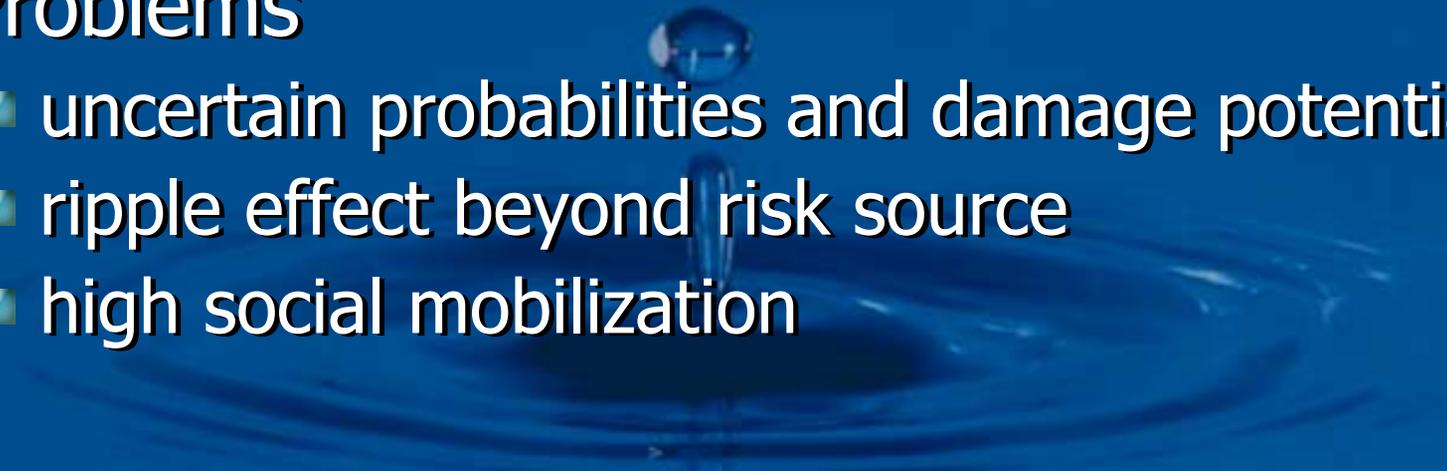
- *Complexity* in assessing causal and temporal relationships
 - *Uncertainty*
 - variation among individual targets
 - measurement and inferential errors
 - genuine stochastic relationships
 - system boundaries and ignorance
 - *Ambiguity* in interpreting results
- 

Modern Systemic Risks

■ Characteristics

- complex
- second order uncertainty
- ambiguous
- open system boundaries

■ Problems

- uncertain probabilities and damage potential
 - ripple effect beyond risk source
 - high social mobilization
- 

Novel Food Risks

■ Characteristics

- Health impacts complex
- Little knowledge about probabilities
- Benefits are contested
- Often non-risk ambiguities

■ Problems

- Often high exposure
 - Concern about lack of choice
 - high social mobilization
- 

Part 2

Risk Perception

What do we know?

A water droplet is captured in mid-air, just above the surface of a pool of water. The droplet is perfectly spherical and has a bright highlight on its upper left side. Below the droplet, a small column of water is visible, indicating the point of impact. The surface of the water is dark blue, and several concentric ripples are spreading outwards from the center, creating a sense of motion and depth. The background is a solid, slightly lighter blue, providing a clean and focused visual for the text.

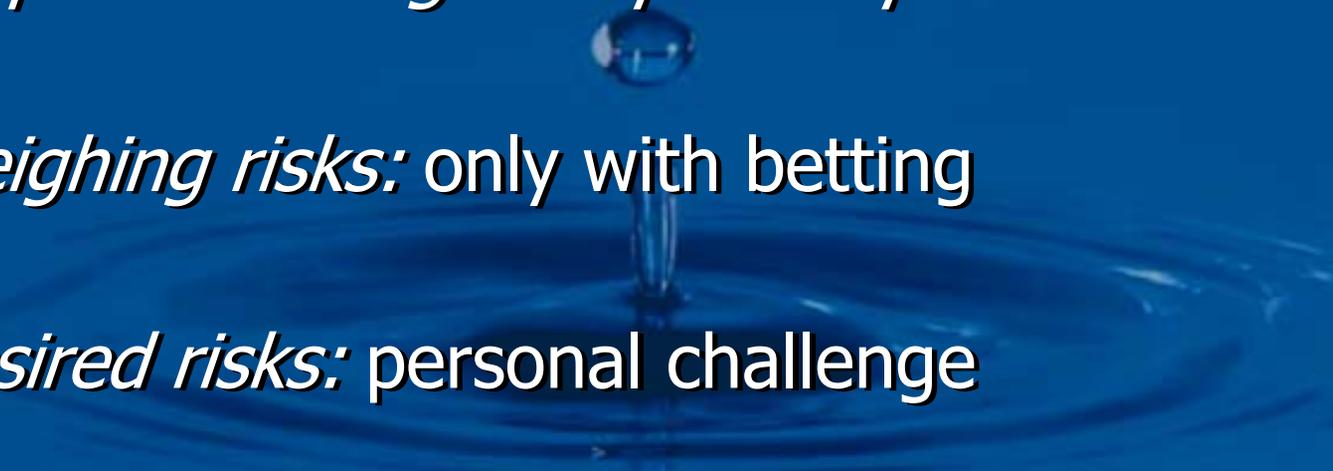
Principles of Risk Perception

- Human behavior depends on perceptions, not on facts
- Perceptions are a well-studied subject of social science research: they differ from expert assessments, but they follow consistent patterns and rationales
- There are four genuine strategies to cope with threats: fight, flight, plying dead, testing

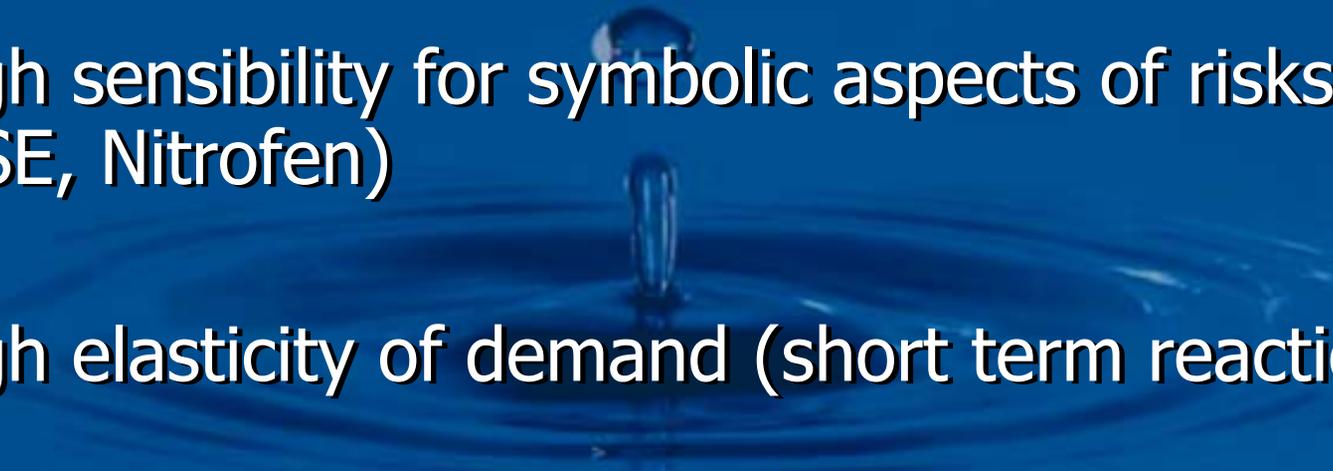
Qualitative Risk Characteristics

- with respect to the nature of risk:
 - dread
 - familiarity
 - personal experience (perceptible by human senses)
 - natural versus artificial risk source
 - with respect to the risk situation:
 - voluntariness
 - controllability
 - fair distribution of risks and benefits
 - confidence in risk management
- 

Five dominant risk perception clusters

- *Emerging danger:* randomness as threat
 - *Creeping danger:* confidence or zero-risk
 - *Surpressed danger:* myth of cycles
 - *Weighing risks:* only with betting
 - *Desired risks:* personal challenge
- 

Example: „Novel Food“

- Perspective. creeping danger
 - concern about long-term impacts
 - desire for zero-risk
 - perception as artificial and unnatural
 - key variable. confidence in risk management
 - High sensibility for symbolic aspects of risks (BSE, Nitrofen)
 - High elasticity of demand (short term reactions)
- 

Part 3

Risk Communication

What do we know?

A high-speed photograph of a single water droplet falling into a pool of water. The droplet is captured mid-fall, just above the point of impact. Below it, a small column of water is visible, and several concentric ripples are spreading outwards from the center of impact. The background is a solid, deep blue color.

Objectives of Risk Communication

- ***Enlightenment:*** Making people able to understand risks and become “risk-literate”
- ***Behavioral changes:*** Making people aware of potential risks and help them to take protective actions
- ***Trust building:*** Assisting risk management agencies to generate and sustain trust
- ***Conflict resolution:*** Assisting risk managers to involve major stakeholders and affected parties to take part in the risk management process

Relevance of Risk Communication

- Health and Safety are top concerns of people in industrial countries
 - People demand more information and transparency on decisions that affect their welfare
 - Trust in traditional decision makers is low and replaced by demand of participation
 - Risk communication is legally demanded in many countries
- 

Some Major Insights from Research

- Risk communication starts with an excellent record of risk management
- Risk communicators need to specify in advance:
 - Purpose of risk communication (orientation, behavioral advise, involvement)
 - Level of risk debate (routine, uncertain but uncontested, highly contested)
 - Types of audiences to be approached
 - Available risk communication resources and channels
 - Follow-up after the risk communication program is completed
 - Design for evaluation

Some Major Insights II

- Risk communication needs to address:
 - Difference between risk and hazard
 - Difference between random event and faulty behavior
 - The process of risk management decision making
 - The trade-offs and value conflicts when making risk management or regulatory decisions (incl. benefits)
 - The meaning of standards and the respective protective goal behind them
- Trust and credibility cannot be “produced” or “manufactured” but only earned in terms of performance and effective communication

Part 4

Policy Implications

Different types of discourses

A high-speed photograph of a single water droplet falling into a pool of water. The droplet is captured mid-fall, just above the surface, creating a small splash and a series of concentric ripples that spread outwards. The background is a solid, deep blue color, matching the overall theme of the slide.

Risk Characteristics

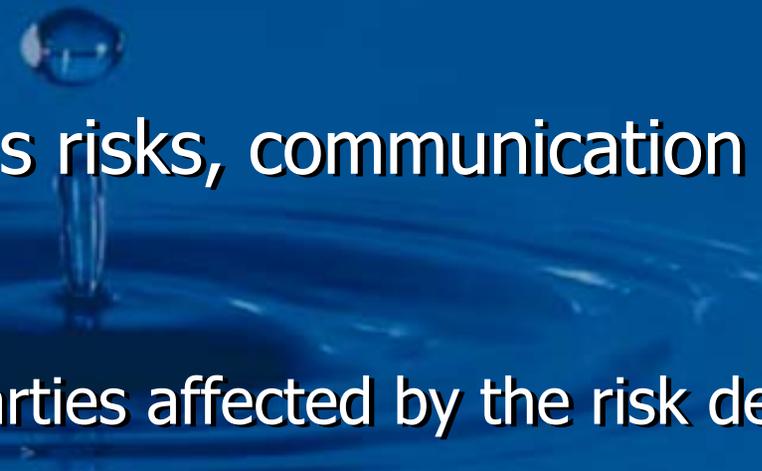
Three challenges of risk management

- *Complexity* in assessing causal and temporal relationships
 - *Uncertainty*
 - variation among individual targets
 - measurement and inferential errors
 - genuine stochastic relationships
 - system boundaries and ignorance
 - *Ambiguity* in interpreting results
- 

Application to Policy Making I

- For routine risk management, communication should include:
 - Information on the process of risk management
 - Information on potential protective behavior
 - Information on routine risk management actions
 - If necessary, a hot-line for questions and observations
 - For highly complex risks, communication should include:
 - All of the above
 - Discourse among experts on range of risk
 - Additional effort for collecting feedback
- 

Application to Policy Making II

- For highly uncertain risks, communication should include
 - All of the above
 - Involvement of major stakeholders
 - Possibly, public hearings
 - Complete documentation and publication of all steps of decision making
 - For highly ambiguous risks, communication should include:
 - All of the above
 - Involvement of all parties affected by the risk decision
- 

The Risk Management Escalator

(from simple via complex and uncertain to ambiguous phenomena)

			<i>Risk Tradeoff Analysis and Deliberation Necessary</i> Risk Balancing Necessary Risk Assessment Necessary
		<i>Risk Balancing Necessary</i> Risk Assessment Necessary	Types of Conflict: cognitive evaluative normative
	<i>Scientific Risk Assessment Necessary</i> Types of Conflict: cognitive	Actors: Risk Managers External Experts Stakeholders such as Industry, Directly Affected Groups	
<i>Routine operation</i> Actors: Risk managers	Actors: Risk Managers External Experts	Actors: Risk Managers External Experts Stakeholders such as Industry, Directly Affected Groups	Actors: Risk Managers External Experts Stakeholders such as Industry, Directly Affected Groups Representatives of the Public(s)
Discourse: internal	Discourse: cognitive	Discourse: reflective	Discourse: participatory
Simple	Complex	Uncertain	Ambiguous

Summary I

- People behave according to perceptions not facts
- Perceptions follow consistent patterns, but their expression may vary from culture to culture
- There are dominant perception clusters that govern the intuitive evaluation of risks
- Within the cluster of 'creeping dangers, trust and confidence in risk management are key to risk acceptance
- Policy making needs to address perceptions

Summary II

- Risk communication serves the needs of enlightenment, behavioral advise; trust building and conflict resolution
- Risk communication needs to address: complexity, uncertainty and ambiguity
- There are different discourse requirements for dealing with
 - complexity: epistemological discourse
 - uncertainty: reflective discourse
 - ambiguity: discourse on values and trade-offs
- Risk communication is a necessary complement to both risk assessment and management

Quote:

- What man desires is not knowledge but certainty
Bertrand Russel
 - Policy makers cannot produce certainty but can help people to develop coping mechanisms to deal prudently with the necessary uncertainty that is required for societies to progress
- 