

# Risk Perception, Communication, and Public Policy

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# Part 1

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

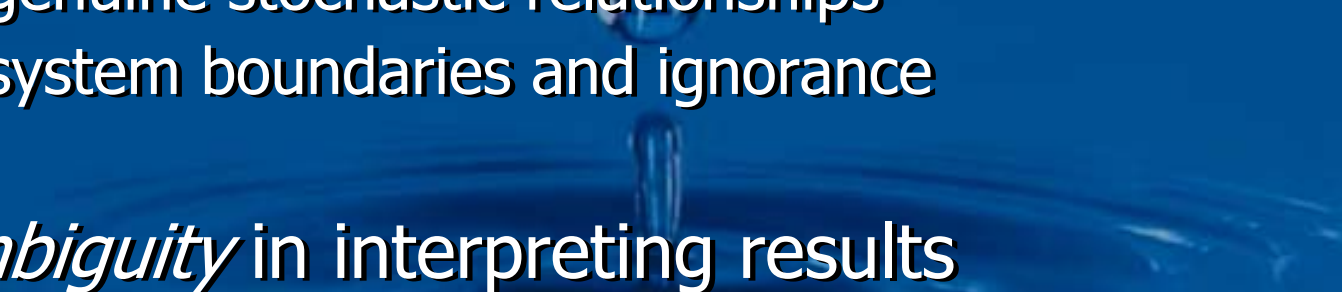
The challenges for public  
perception and communication

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, creating a bright highlight. Below it, the water surface is disturbed, showing concentric ripples that spread outwards. The background is a deep, uniform blue, matching the overall theme of the slide.

# Risk Characteristics

## Three challenges of risk management

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- *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
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# Modern Systemic Risks

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## ■ Characteristics

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

## ■ Problems

- uncertain probabilities and damage potential
  - ripple effect beyond risk source
  - high social mobilization
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# Novel Food Risks

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## ■ 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
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# Part 2

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## *Risk Perception*

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 rising from the point of contact, and several concentric ripples are spreading outwards across the surface of the water. The background is a solid, deep blue color.


# Principles of Risk Perception

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- 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

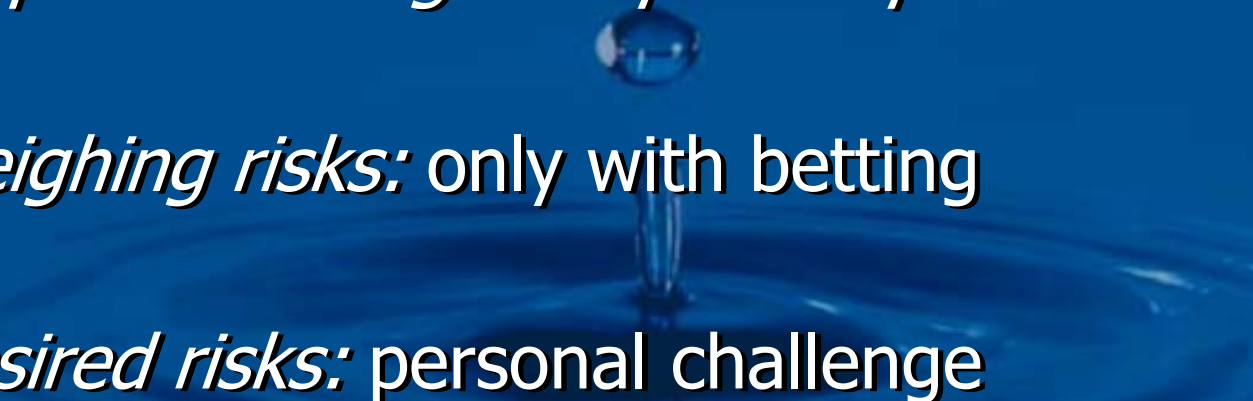
# Qualitative Risk Characteristics

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- 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
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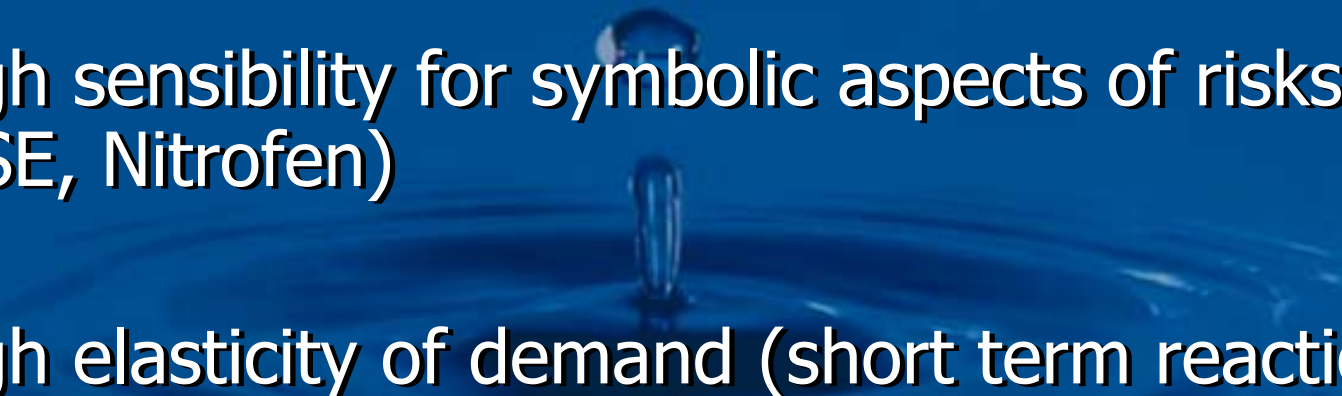
# Five dominant risk perception clusters

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- *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
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# Example: „Novel Food“

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- 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)
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# Part 3

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## *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 rising from the point of contact, and several concentric ripples are spreading outwards across the surface of the water. The background is a solid, deep blue color.


# Objectives of Risk Communication

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- ***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

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- 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
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# Some Major Insights from Research

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- 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

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- 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

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## *Policy Implications*

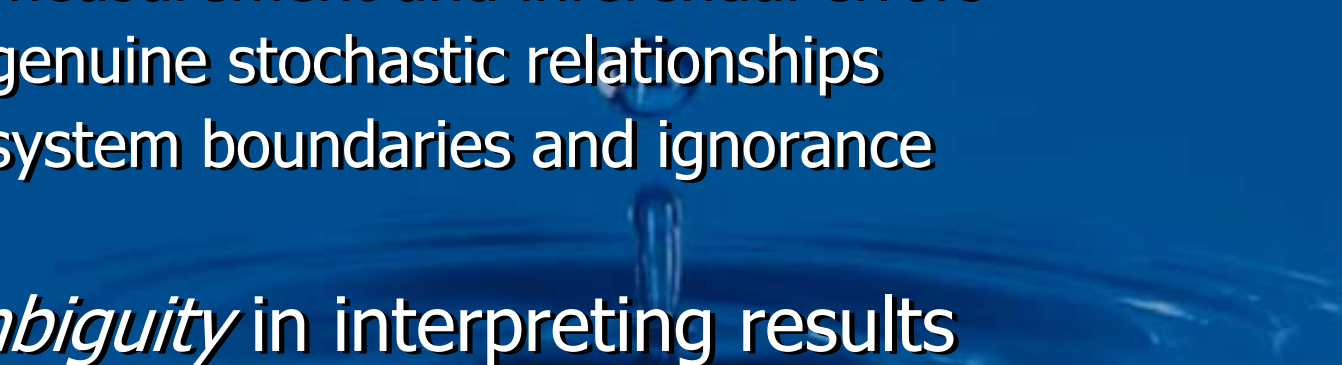
Different types of discourses

A high-speed photograph of a single water droplet falling into a pool of water. The droplet is captured mid-fall, just above the point of impact, 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

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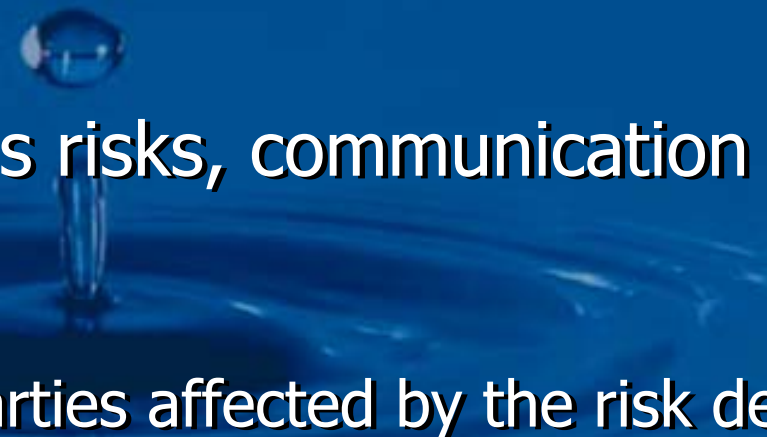
# Application to Policy Making I

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- 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
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# Application to Policy Making II

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

# Summary I

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- 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

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- 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:

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- 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
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