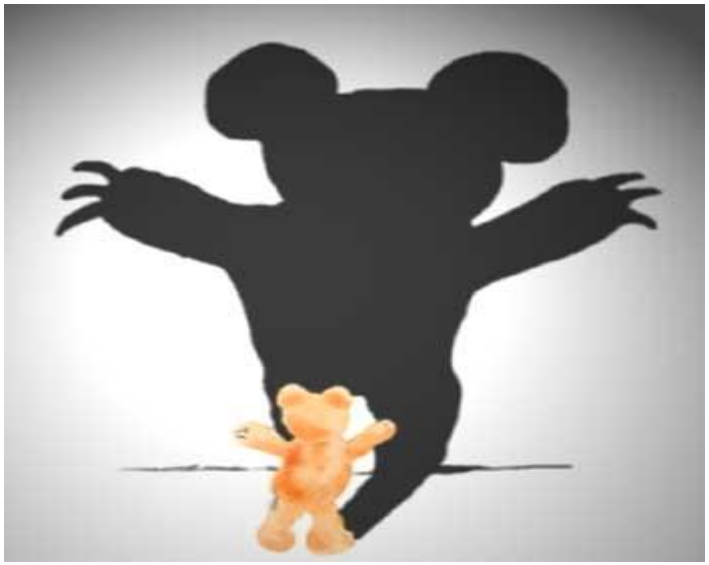
RISK PERCEPTION AND RISK CULTURE



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Risk Perception

What Do We Know?

Janus face –
roman god of ambivalence/ambiguity

Painting by Rene Magritte

Principles of Risk Perception

- Human behavior is guided by perceptions, not by scientific knowledge about “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, playing dead, experimentation

FIGHT

PLAYING DEAD

FLIGHT

Dominant Risk Perception Clusters

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

Application to Large-Scale Accidents

Public perception:
Representative of Cluster: “Pending Danger”

- Key characteristics
  - Low-probability, high-consequence risk
  - Sophisticated technology with little long-term familiarity
  - Little time for warning and emergency measures

- High sensibility for indicators of human failures or organizational problems (high reliability)
- Concern about randomness of catastrophic events
- Risk aversion most frequent response

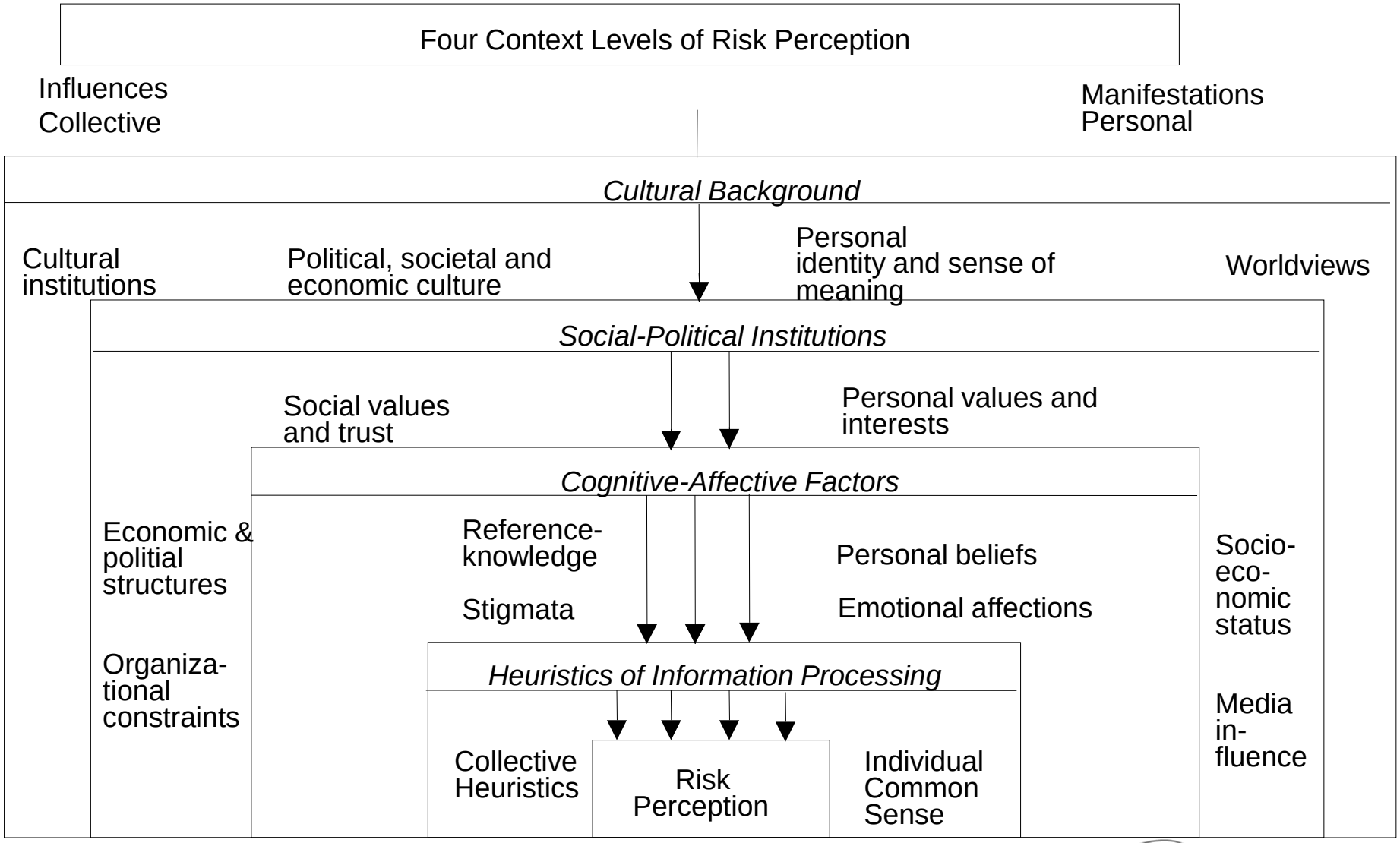
Application to Pollutants and Chemicals

Public perception:
Representative of Cluster: “creeping danger”

- Key characteristics
  - Long delay between exposure and effect
  - No possibility to detect the danger by human senses
  - Reliability on information from third parties

- Key variable trust:
  - If yes: risk-benefit balancing accepted
  - If no: request for zero risk (no benefits
  - considered)
  - If maybe: orientation on external criteria
-

Integrative Approach(Rohrmann/Renn)



Risk Perception

Empirical Results

Empirical Results I

- with respect to causal factors
  - Psychometric factors such as personal control, dread or familiarity (highly influential)
  - Personal value orientation (selectively important)
    - Materialistic
    - Hedonistic
    - Work Ethics
    - Post-materialistic
  - Trust in institutions (creeping danger: high)
  - Stigma Effects (selected risks but then very powerful)
  - Socio-demographic variables (minor effect)

Empirical Results II

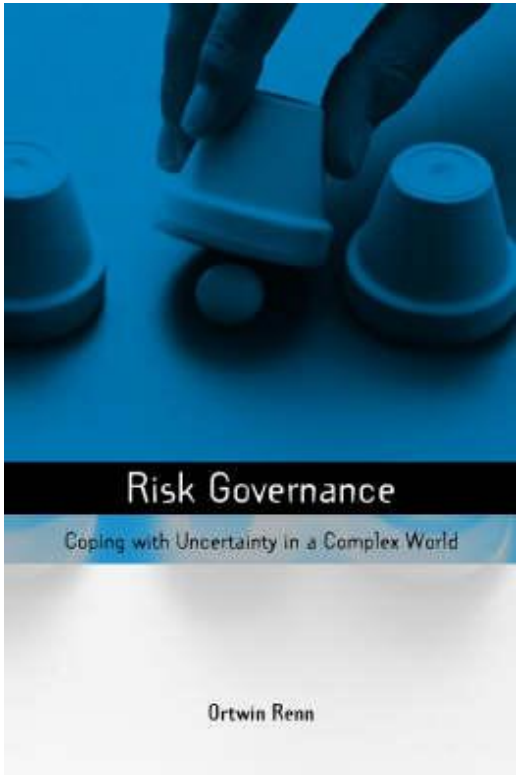
- with respect to countries
  - Trust:
    - Europe: low in regulation, high in science, high in NGOs; sensitive to long-tern, unknown impacts
    - US: medium in regulation, split on science, polarized regarding NGOs; sensitive to equity and environmental justice
    - Japan: normally high in regulation, high in science, medium to low in NGOs; sensitive to food risks
    - China: ???

Empirical Results III

- with respect to countries
  - Psychometric attributes
    - Europe: -- artificiality –no personal control -dread,
    - USA:: --imposed, --dread, --unfair
    - Japan: --artificiality – no institutional control, -foreign
    - China: ?? (blame, lack of effective management)

Integration of Perception

1. Both “real” and perceived dimensions of risk are important.
2. All stakeholders should be meaningfully involved as equals.
3. Be process-focused and principled
   – transparent, equitable, effective, efficient and accountable
4. It is based on an inclusive model of integrating governments, private sector, civil society and experts
5. It should be based on best available science and reliable and fair judgment procedures



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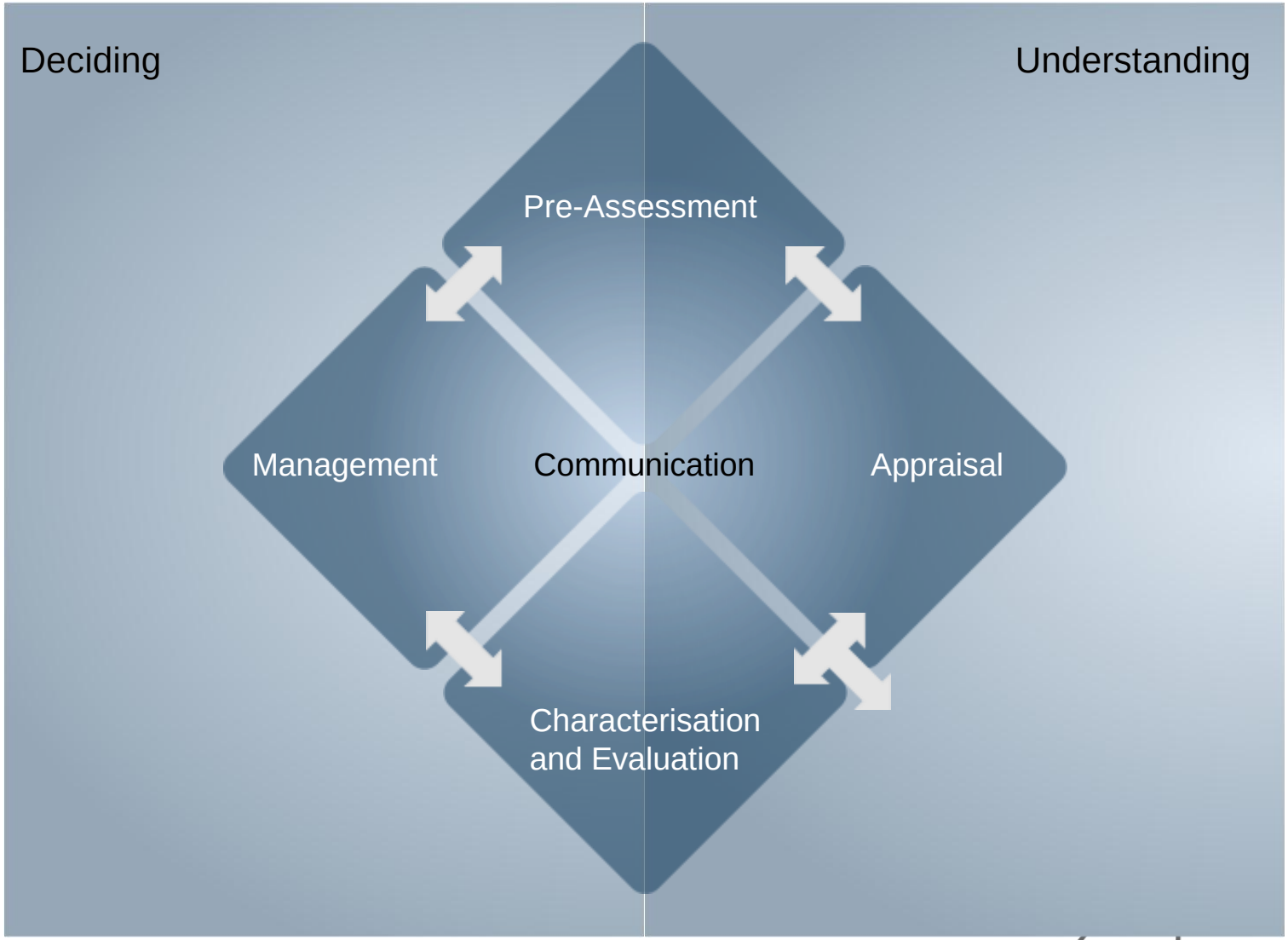
Risk Governance Process



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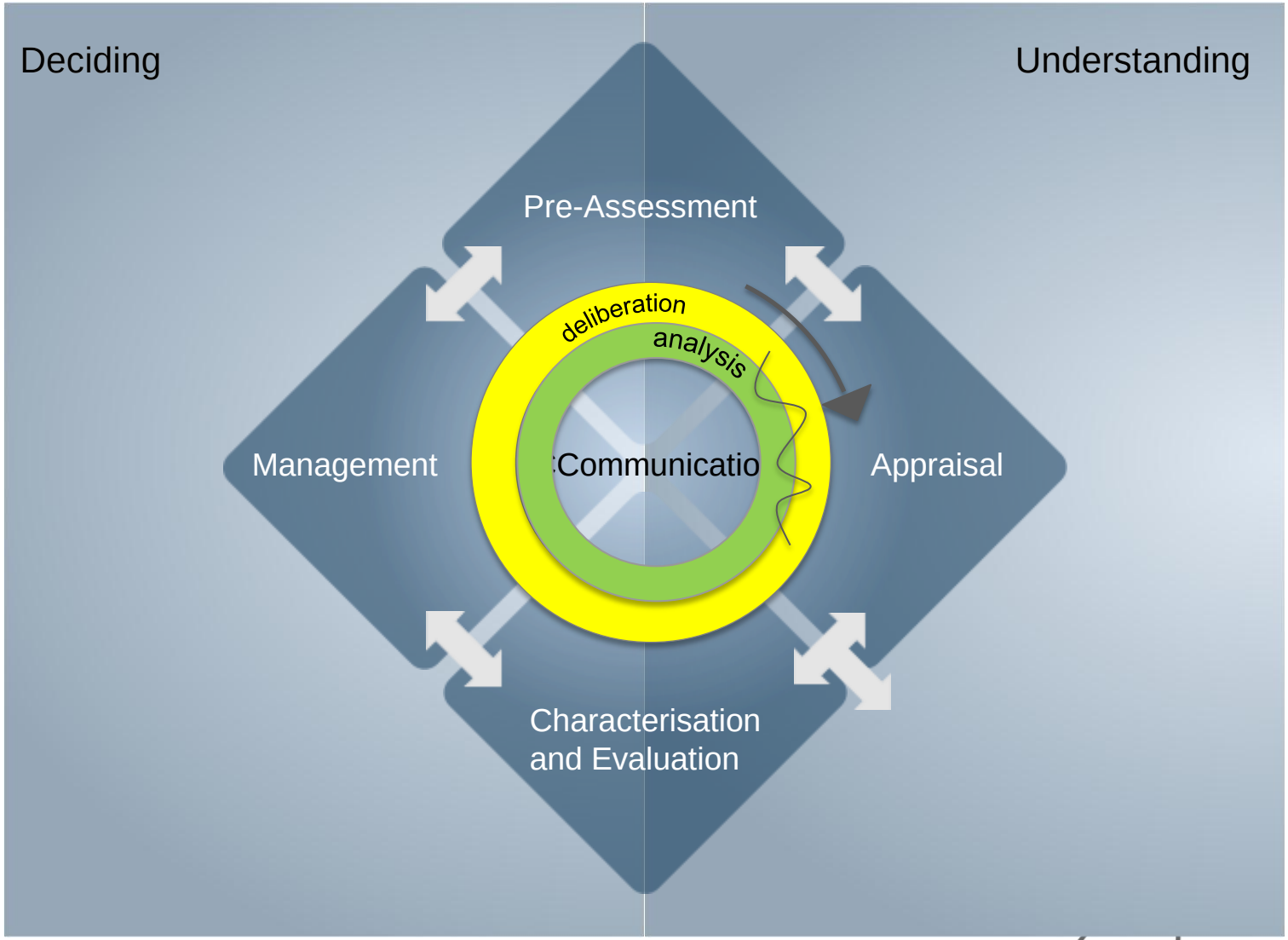
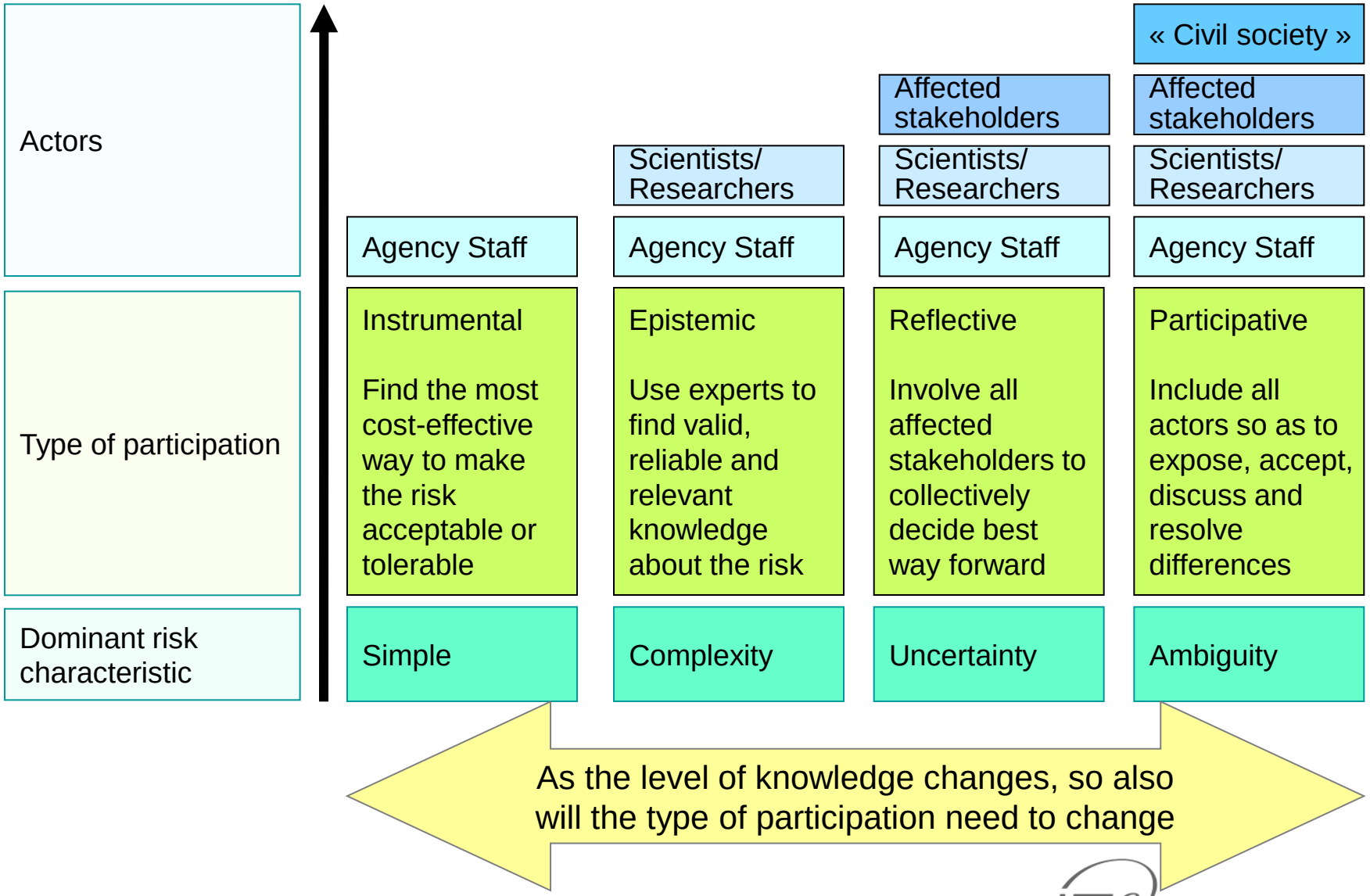
INNOVATIONS IN THE IRGC'S FRAMEWORK

1. The **pre-assessment** phase
   - extending problem definition
2. Including **concern assessment** as part of risk appraisal
3. **Categorising the knowledge** about the risk as:
   - linear
   - complex
   - uncertain
   - ambiguous
4. The **characterisation and evaluation** phase
   - is the risk acceptable, tolerable or unacceptable?
5. The **distinction in 4 management regimes (except crisis)**
   - Standard based management (linear)
   - Risk-based management (complex)
   - Resilience-oriented management (uncertain)
   - Discourse-driven management (ambiguous)

Risk Governance: Analysis and Deliberation



STAKEHOLDER INVOLVEMENT



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Conclusions I

- People behave according to perceptions not facts
- Perceptions follow consistent patterns, but their expression may vary from culture to culture
- Perceptions are governed by qualitative characteristics, semantic patterns, trust, and value orientations
- Of special importance are the clusters of pending risks and emerging risks
- Risk perception needs to be integrated in a comprehensive framework of risk culture

CONCLUSIONS II

- Good risk governance **integrates traditional risk analysis with the thorough understanding of how the affected population perceives and handles the risk** (“framing” and “concern assessment”)

- **Categorising the knowledge about the risk** as simple, complex, uncertain or ambiguous can help:
  - Select the appropriate risk management strategy
  - design risk communication and stakeholder involvement

- Using the results of both risk assessment and concern assessment can support a **tolerability/acceptability judgement that accounts for both scientific facts and consumers’ perceptions**

Not to forget:

Risk managers 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