

Risk Interpretation and Action

Research objectives - 2

- **Understanding decision-making in complex and changing risk contexts**
- This objective is focussed on understanding effective decision making in the context of risk management – what is it and how it can be improved. In linking with the other objectives, the emphasis is on how human decisions and the pragmatic factors that constrain or facilitate such decisions can contribute to hazards becoming disasters and/or may mitigate their effects. There are three sub-objectives:
 - 2.1 identifying relevant decision-making systems and their interactions
 - 2.2: understanding decision-making in the context of environmental hazards
 - 2.3: improving the quality of decision-making practice.

Shift of conceptual emphasis

- Emphasis in much natural science work is on (probabilistic) *assessment* of risk.
- In work on *interpretation* of risk, the focus shifts from
- “What’s likely to happen?” to
- “What do people (especially those at risk) *think* is likely to happen?”
- “And what will they do about it?”
- “And what do they expect will *then* happen as a consequence of their actions?”
- “How do people learn from experience?”
- Uncertainty at least as important as calculated probability.

“Rational choice”

- Rational choice models of decision making (e.g. classical economic theory) assume people prefer *and hence choose* options with highest expected utility (= estimated probability X evaluation of outcomes).
- Experimental research shows that people have difficulty processing probabilistic information and that...
- this assumption is often incorrect *even when people are told the probabilities* of different outcomes.
- In real life, people aren't always told probabilities in advance but have to infer these from own/others' experience (“Decisions from description” vs. “Decisions from experience”).

Risk communication

- Nonetheless, a common assumption is that, if only the public could be told “the facts”, they’d behave more “rationally”.
- Improved scientific forecasting isn’t the whole story.
- People interpret new (scientific) information in the light of prior beliefs and experience.
- Acceptance of new information depends on trust in (expertise *and* motives of) communicators.
- Even if information is accepted, different actors may take different sets of anticipated outcomes into account and evaluate them differently.

Interpretation-Action Gap

- Even if people interpret risks “correctly” (i.e. how communicators want them to) they may not base their behaviour solely on this interpretation.
- There may be many practical, physical and economic constraints that restrict the options available.
- They may persist with habits that they find difficult to change.
- They may imitate others and/or base their behaviour on cultural norms.

Issues for research (NOT exhaustive)

- How scientific information relates to prior beliefs and experience (both of community members and decision-makers).
- How well different information sources are trusted.
- How people evaluate and prioritize possible outcomes.
- How difficult/expensive/dangerous/counternormative different action options are considered to be.
- How much people (at any level) are prepared to even consider different risk scenarios and/or action options.

Methodology

- For primary research, multimethod approaches likely to be needed including both quantitative surveys (where practicable), interviews with stakeholders, decision-makers and observations.
- Could be integrated with Forensic Investigation studies to contrast cases where risk information is communicated and acted upon appropriately and when not.
- Examination of what information decision-makers and/or communities actually use could highlight areas of need for more focussed scientific data (Research Objective 1) and/or translational work to link available data to policy (Research Objective 2).

Short (ish)-term objectives

- To formulate a conceptual position paper in good time for October 2011 meeting.
- To identify a small core group of researchers ready to help with this.
- Following preliminary email communication, to have probably 2 meetings with overlapping but not necessarily identical attendance in the new year/Northern spring (maybe NZ in early March, Paris in late April).
- Use this core group to draw in other researchers, e.g. in risk analysis and judgement and decision-making, who have relevant interests and expertise but haven't necessarily yet applied them to natural hazards.
- To identify ongoing research programmes consistent with the general aims of RIA and try to draw these into the IRDR network.