Reporting and Peer Review of Expert Judgement Studies

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Our COST Action …

… is about taking expert judgement to the next level of application

- in societal risk and decision analysis
- in business and industrial applications too.

- We claim to be at a 'tipping point'

- But that puts a huge responsibility on us!

- We must be ready to be professional, auditable, open to peer review

- and I claim we are *not*!!!

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WG5: ESR Training

- We want to train them to conduct expert judgement studies

- So what do we teach them?

- What is best practice?

Key Professional Issues

- Design
- Reporting
- Peer Review
- Learning and embedding knowledge
 - Meta-Analysis

Design Issues

- With some 30+ years of experience in applying expert judgement methods, we know about 'better practice …'
- But do we know about *BEST* practice?
  - US/USNRC project wrote guidelines
  - Other guidelines available, e.g. EFSA are just developing and publishing some.
  - We need to be aware of soft as well as technical issues
- How do we design studies?
  - Choice of experts
  - Choice of questions of interest
  - Choice of calibration questions
  - Elicitation protocol
  - Aggregation method(s)
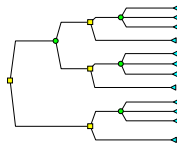 - ….

All expert judgement problems are the same…?
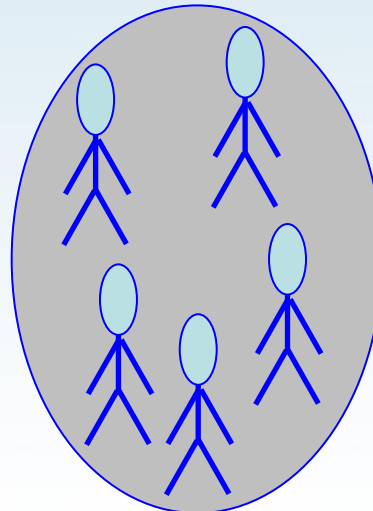
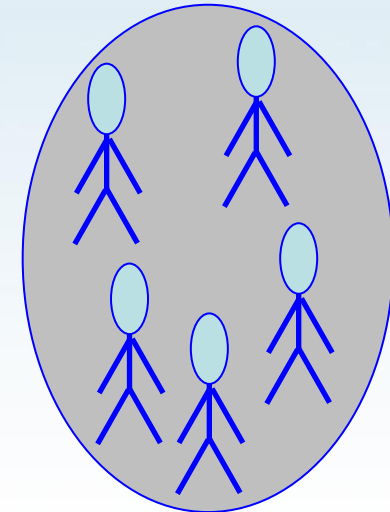| The Expert Problem	The Group Decision Problem	The Text-Book Problem
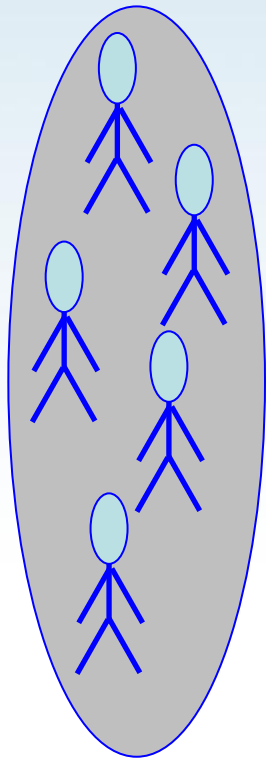
Experts

Decision Maker

Group of decision makers

Group of experts

Issues and undefined decisions

All expert judgement problems are the same…?

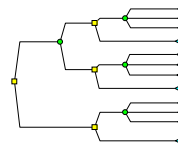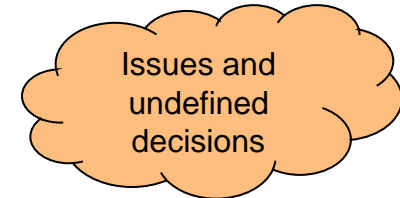| The Expert Problem	The Group Decision Problem	The Text-Book Problem

About learning rationally

About deciding democratically (and rationally?)

About evidence more than aggregating judgement?

Experts

Decision Maker

Group of decision makers

Group of experts

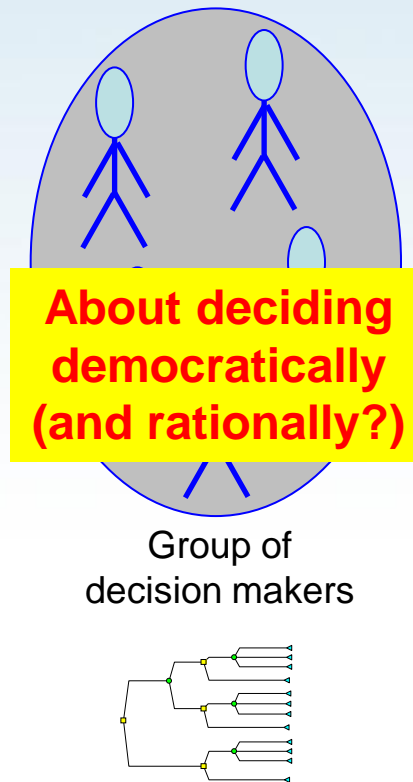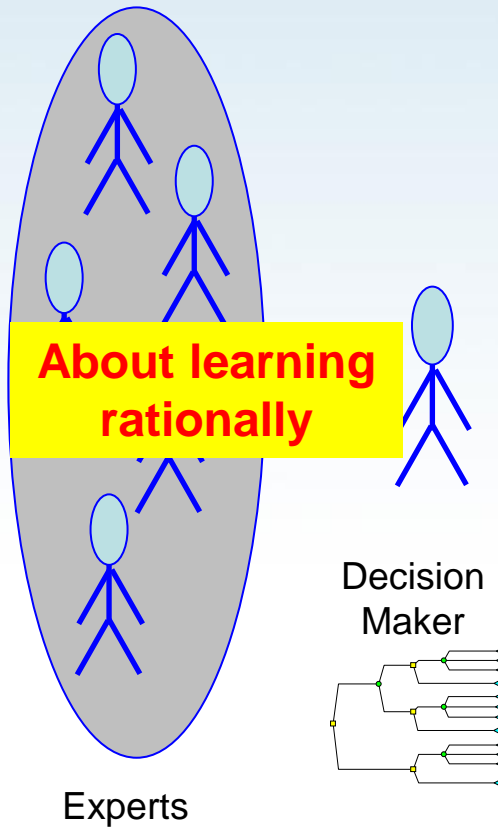Issues and undefined decisions

Different contexts $\Rightarrow$ different methods?

- Should we demand independence preservation?
- Calibrating expert judgements is fair in the expert problem
  - … but what if they are decision makers?
  - … or stakeholders?
- Generally we need to be sensitive to the political processes that surround the analysis

Reporting Expert Judgement Studies

- We know how to report empirical studies
  - Host of advice and requirements from journals and the scientific community
  - Cochrane Collaboration in clinical trials
- What have we got for expert judgement studies?

Cooke's Principles

- **Empirical control:** Quantitative expert assessments are subjected to empirical quality controls. ✓

- **Ne...** ...and evaluating exp... ...s to state their true opinions, and m... not bias results. ✓

  Experts are prejudged.
  They are accepted as expert.

- **Fairness:** Experts are not pre-judged, prior to processing the results of their assessments. **?**

- **Scrutability/accountability:** All data, including experts' names and a...essments, and all processing tools... ...must be repr... **✗**

  Few reports satisfy this.
  Chatham House reporting

Understanding

- We need to report not just the quantitative side of expert judgement studies, but also the reasoning and understanding that the experts articulated

Peer Review

- All is not well with peer review of empirical studies
  - Lots of current debate and discussion of (a relatively few) failings in scientific peer review.
- But because there is a well established ideal of what good peer review of empirical studies looks like, it is possible to have a constructive debate on these failings.
- What are the guidelines for peer review of expert judgement studies?
- If we don't have agreed practice for the process of eliciting and aggregating expert judgement, can we have effective peer review?

Learning and embedding knowledge

- How do we compare and draw together the conclusions of several studies?
- Meta-Analysis of empirical studies
  - Cochrane Collaboration and Evidence-Based Medicine
  - Focused on systematic review of empirical studies
  - Regression/linear model based
- But methods do not transfer to EJ studies

So where does this leave us?

We need to consider:

- best practice in EJ studies;

- reporting standards for expert judgement studies that allows them to be audited and evaluated;

- meta-analytic methodologies for expert judgement data.

References

Simon French (2011)

AGGREGATING EXPERT JUDGEMENT

Revista de la Real Academia de Ciencias Exactas, Fisicas y Naturales. Serie A. Matematicas **105**(1),181–206

Simon French (2012)

EXPERT JUDGEMENT, META-ANALYSIS AND PARTICIPATORY RISK ANALYSIS

Decison Analysis. **9**(2), 119-127

Thank you