

SHELF and Elicitation for HTA

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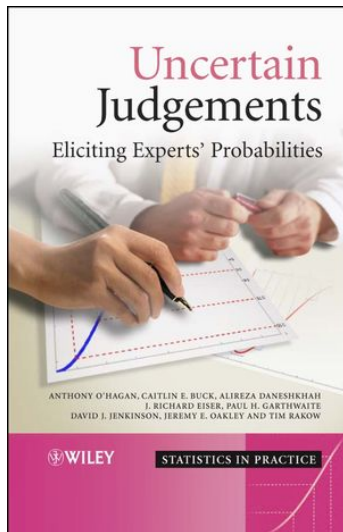
The
University
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Sheffield.

- 1 SHELF: protocols and software for doing elicitation
- 2 An experience of (SHELF) elicitation for HTA

SHELF: The SHEffield ELicitation Framework

Co-written with Tony O'Hagan

- A package of templates, software and guidance for conducting elicitation
- Based on findings in O'Hagan et al. (2006)
- Uses behavioural aggregation (much in common with other approaches)
- Templates aim to provide a transparent record of the elicitation
- Supporting R package: SHELF
- See also Guidance in EFSA Journal 2014, vol 12, no. 6.



Facilitated face-to-face (or online!) workshop

- 1 Preparation: structuring; evidence dossier
- 2 Training
- 3 Elicitation and recording of individual judgements (no discussion)
 - Can mitigate risk of overconfidence
- 4 Presentation of individual judgements; group discussion
 - Insight and understanding emerges at this stage!
- 5 Summary of discussion and elicitation of a group distribution: invoke notion of a “rational impartial observer”

<https://jeremy-oakley.staff.shef.ac.uk/shelf/>

Protocols and software available (online apps and R Package) for the following:

- Univariate elicitation
 - Three choices of elicitation method (probabilities, quantiles, roulette)
 - Ten choices of fitted distribution (normal, gamma, beta, etc.)
- Linear pooling
- Bivariate elicitation with copulas and “Extension method”
- Dirichlet elicitation for multinomial probabilities
- Mixture distributions
- Survival analysis
- Variance elicitation

Online training course (Leslie New and Tony O’Hagan)

Precise details are confidential!

- A company was preparing a submission for NICE
- NICE wanted long-term assessment of cost effectiveness; extrapolation required beyond the trial data
- Extrapolation only feasible using expert judgement; best guess unlikely to be acceptable, so expert elicitation was used to support a Probabilistic Sensitivity Analysis

The elicitation problem

- Economic model described transitions between states over time
- Potentially a large number of uncertain parameters (transition probabilities)

What the books don't tell you!

How to balance

- 1 the needs of the model/analysis
- 2 the way the experts think about the problem
- 3 the time available
- 4 feasibility of the elicitation approach

- 1 Discussion between facilitator, modellers, analysts: initial proposal (two quantitative assumptions; two parameters) (several one hour meetings)
- 2 Feasibility check with external expert (not part of the elicitation group) (1 hour)
- 3 Prior to first elicitation meeting: SHELF online training (2 hours)
- 4 Elicitation meeting 1: introduction; further training; agree structure, parameter definitions; some individual elicitation (3 hours)
 - One change: one parameter to be elicited separately for two subpopulations
- 5 One week between meetings; completed individual elicitations by email.
- 6 Elicitation meeting 2: group discussion, final choice of elicited distributions (3 hours)

Closing remarks (1)

- Elicitation is difficult. Takes time to plan and implement
 - Helpful to have expertise embedded in the project team.
- Agreeing the definitions can be hard!
 - Mismatch between model requirements and expert reasoning
- Misunderstandings can happen; some experts may change their initial judgements significantly.
 - I really would *not* recommend doing a whole elicitation by email with no feedback!

Closing remarks (2)

- Can report assumptions and general rationale, but difficult (impossible?) to justify the finer details of the distribution.
- Elicitation is not alchemy! Should expect quite a lot of uncertainty in the reported distribution.
- Elicitation protocols are generic; likely to be gaps regarding particular technical problems encountered in HTA modelling.
- SHELF under continual development; feedback and suggestions always welcome, including software requests. Technical support is available!