

Reliability of Expert Judgements: Overconfidence

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“What I lack in experience I make up for in wildly unrealistic self-confidence”

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Heuristics, Biases, Uncertainty & Decisions

- **Heuristics**
 - simple rules of thumb and mental shortcuts
- **Biases**
 - **systematic** errors that can result from the use of heuristics
- **With respect to uncertainty, the main enemy of good decision making is bias, not the uncertainty being too great**
 - bias in central value (mean): eg “rose tinted glasses”
 - bias in width of distribution: eg assessing the range of uncertainty to be much less than it really is with respect to your true state of knowledge
- **Our “mental wiring” is just not good when it comes to uncertainty**
 - Intuition and “gut feel” often significantly wrong

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Heuristics, Biases, Uncertainty & Decisions

- Heuristics

Human beings are not endowed with rational probabilistic thinking and optimal behaviour under uncertainty.

- With respect to uncertainty, the main enemy of good decision making is **bias**, not the uncertainty being too great
 - bias in central value (mean): "rose tinted glasses"
 - bias in width of distribution: e.g. assessing the range of uncertainty to

**Bias & error => poor decisions
=> undesirable outcomes**

- uncertainty

- Intuition and "gut feel" often significantly wrong

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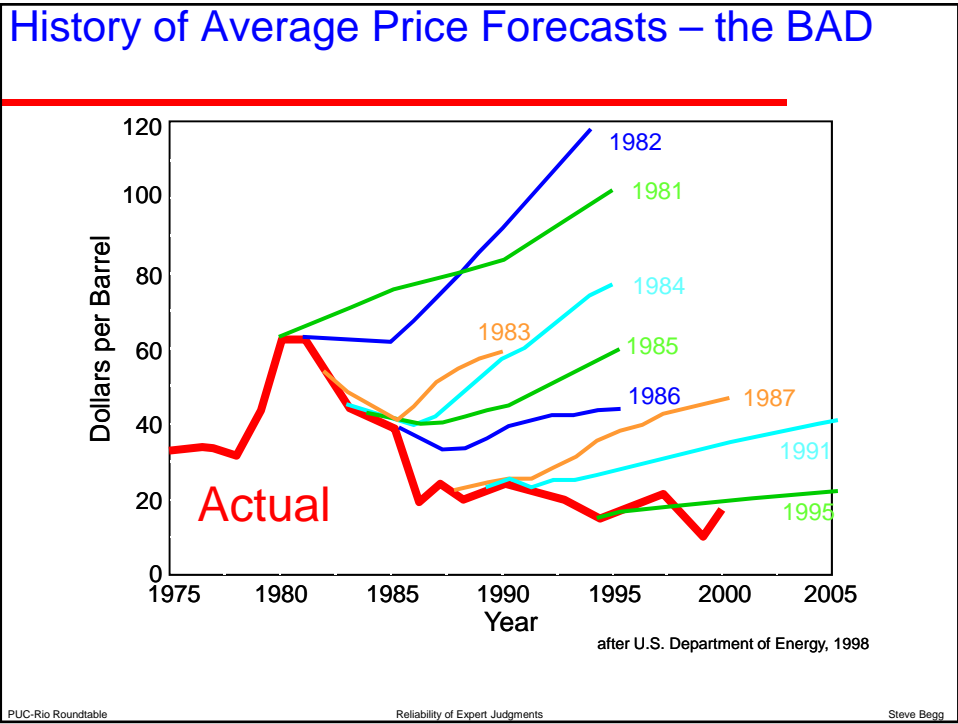
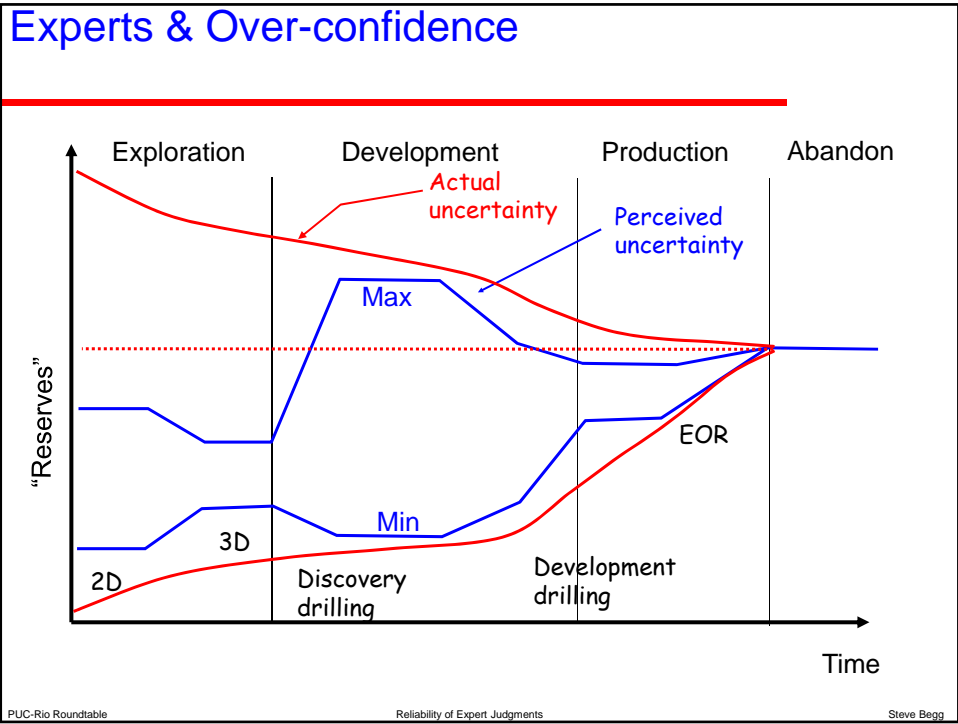
Major Psychological Behaviours Relevant to Oil & Gas Decisions

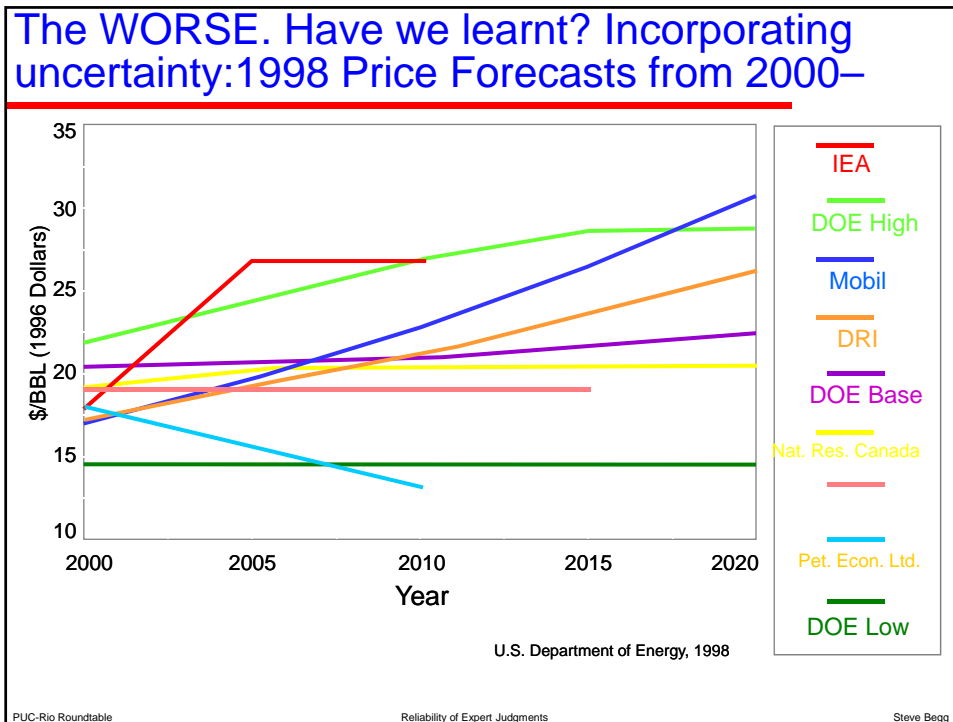
- **Overconfidence**, Optimism and Superiority Biases
- Anchoring
- Unpacking & the Planning Fallacy
- Availability, Recency and Vividness
- Hindsight Bias

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Overconfidence Assessment

← 10% Lower Limit (P10) ← 80% Chance → Upper Limit (P90) → 10%

Question 1 _____

Question 2 _____

Question 3 _____

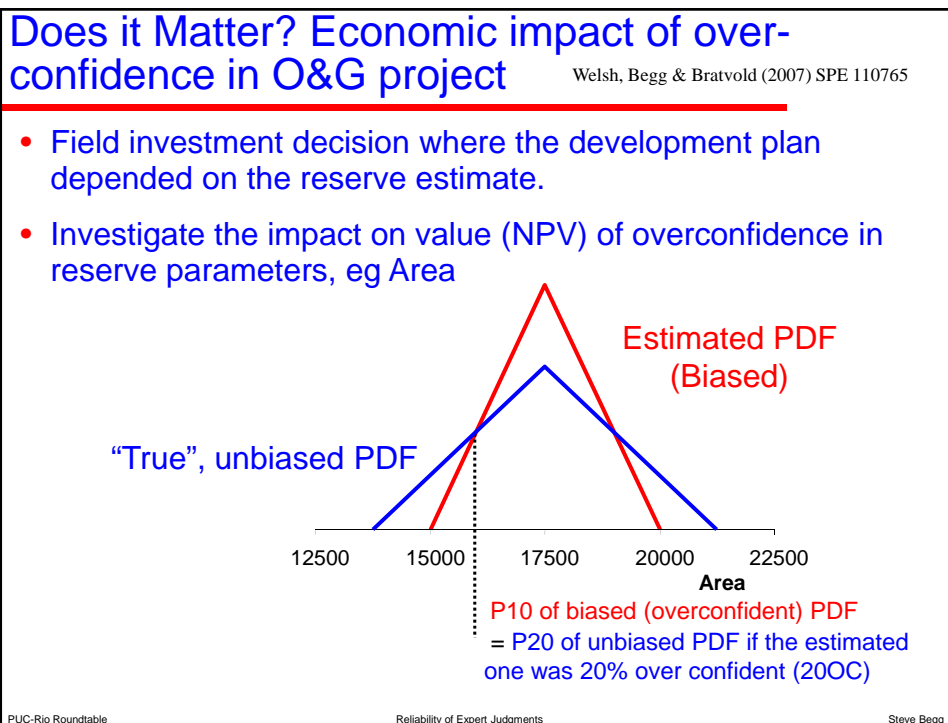
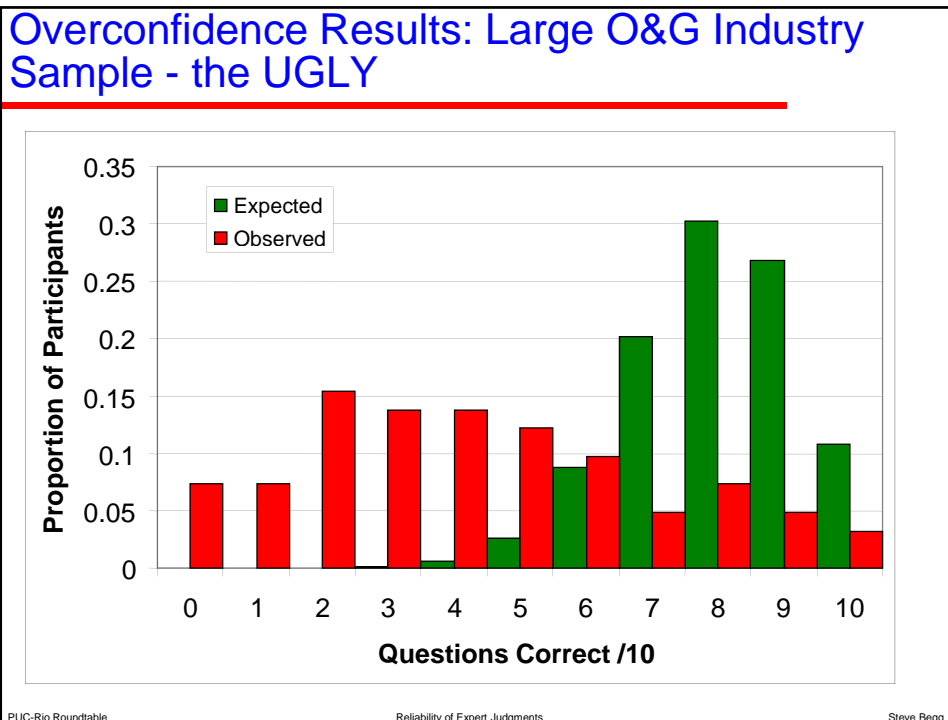
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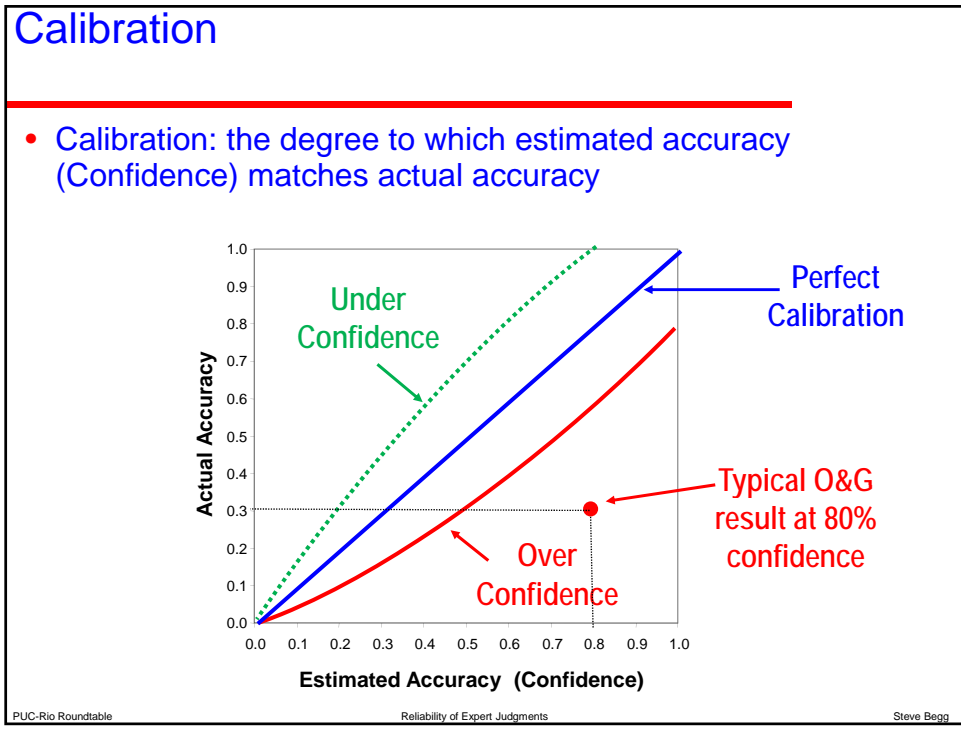
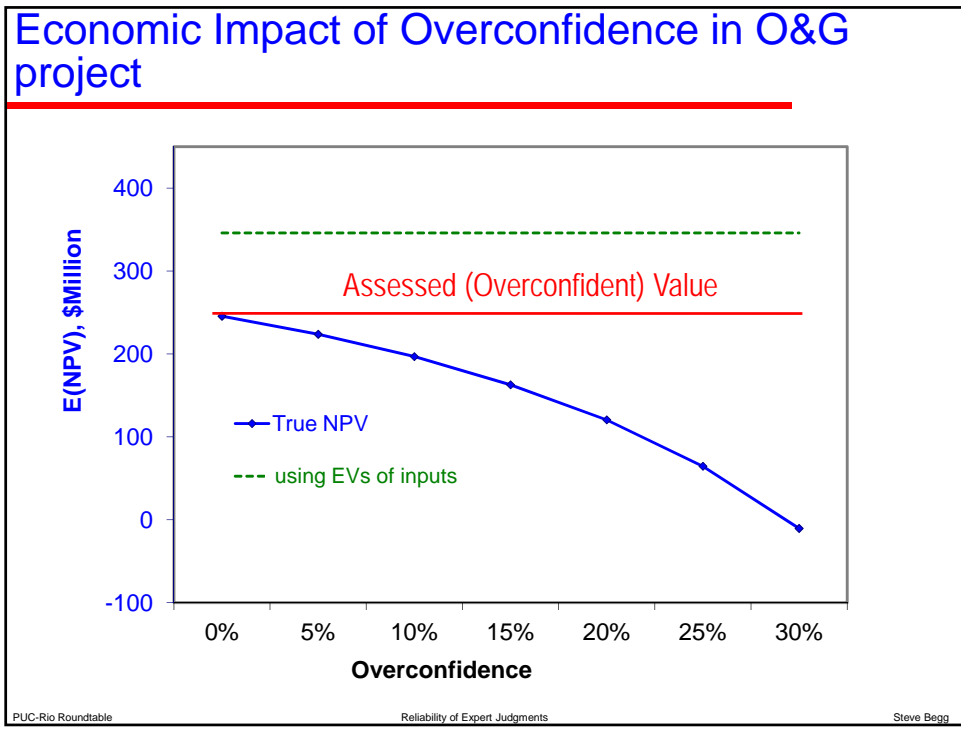
E.g. What is my height in cm? _____

172 cm

- The goal is to set ranges such that they are
 - Narrow enough not to contain the actual value more than 8 out of 10 times (80%) on average, or
 - Wide enough to contain the actual value 8 out of 10 times

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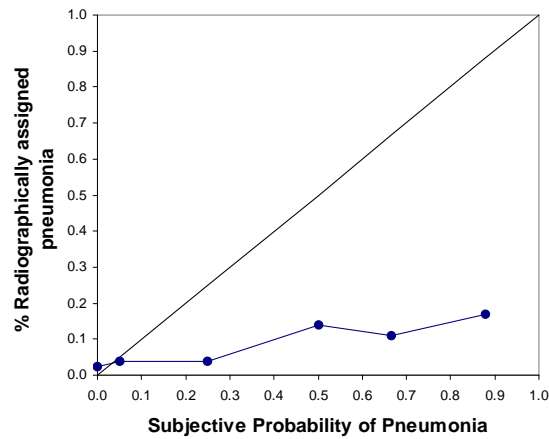




Expert Calibration: Physicians

Data: Physicians, after completing history and physical examination, estimated the probability that patients had pneumonia

(Source: Christensen-Szalanski & Bushyhead, 1981)

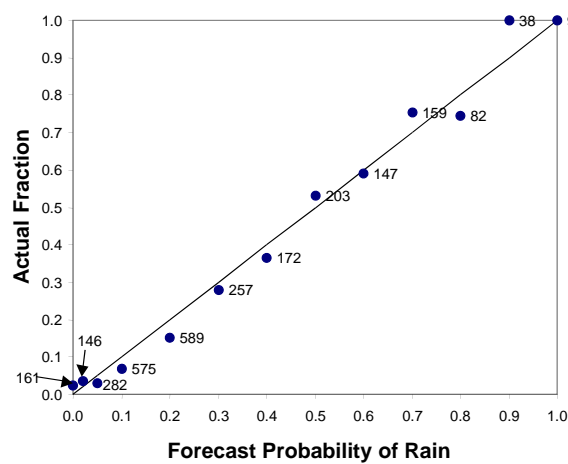


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Expert Calibration: US Weather Forecasters



- Why are physicians lousy and weather forecasters great?
 - A significant reason is because they get frequent, immediate, and accurate feedback

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- SPE 96423
 - *“Cognitive Biases in the Petroleum Industry: Impact and Remediation”*