

# Intuition and Bias in Risk Assessment: Impact and Remediation

Welsh, Matthew Brian<sup>1</sup>, Steve H. Begg<sup>1</sup>, Reidar Brumer Bratvold<sup>2</sup> (1) University of Adelaide, Adelaide, Australia (2) University of Stavanger, Stavanger, Norway

Psychological research has demonstrated that people are prone to cognitive biases – discrepancies between calculated, optimal decisions and those made using intuition – and that these are particularly prevalent when decisions are made under risk and uncertainty. We present analyses of responses to a questionnaire designed to highlight well-known cognitive biases and other flaws in intuition. The biases are discussed and their potential impact on risk assessment within the industry is discussed with a focus on remediation.

To avoid criticisms of domain specificity sometimes levelled against biases research, all questions used were specifically related to the petroleum industry. Questions designed to show anchoring, overconfidence and availability biases and logical and probability-based problems were included and administered to 187 petroleum industry personnel.

Despite domain familiarity, industry personnel exhibited strong biases in their intuitive judgements, indicating that familiarity/expertise does not eliminate bias. We conclude that such biases are likely to already be impacting on industry assessments of probabilistic outcomes. The effect of previous risk training is also discussed, with the conclusion that, if risk training does provide benefits, these are eroded over time and more regular training is needed to maintain the skills taught in such courses.

We conclude that a better understanding of biases that can affect industry decisions, not just in terms of their existence but also their mechanism of action, will allow more meaningful attempts at remediation. Current techniques designed to reduce bias need to be examined critically and the strengths and weaknesses exposed.