

Dilemmas of Robustness, Opportuneness and Informativeness: Implications for Intelligence Analysis

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Abstract One responsibility of intelligence analysts is to use evidence to formulate assertions that are both informative and reliable. We identify generic conditions in which the informativeness of an assertion trades off against its reliability: Informativeness improves as reliability deteriorates. We assess the reliability of an assertion with the concept of robustness to uncertainty as developed in info-gap decision theory. The robustness is large if only very large changes or additions to the evidence cause the informativeness of the assertion to fall below a required level. Info-gap robustness provides the analyst with a methodology for identifying the most informative assertion that has acceptable reliability. Robustness responds to the pernicious side of uncertainty, but surprise can be favorable and uncertainty can be propitious. An assertion has great potentiality or prospect from uncertainty if a small increment of evidence can dramatically improve the informativeness of the assertion. We identify generic conditions in which informativeness of an assertion trades off against potentiality: The informativeness worsens as its potentiality from new evidence improves. The potentiality of an assertion is assessed with the concept of opportuneness from uncertainty as developed in info-gap decision theory. Finally, we claim that robustness and opportuneness are sympathetic: they both improve or both worsen as the informativeness of an assertion changes. We develop these ideas generically and illustrate them with an example, demonstrating their relevance to intelligence analysis. The example considers the question of whether, and when, China will invade Taiwan. The formulation is hypothetical and qualitative, and demonstrates the evaluation and interpretation of the robustness and opportuneness concepts, and their use in choosing reliable and promising intelligence assertions.

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