

Analytical Rigor

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A Conventional Perspective

"the scrupulous adherence to established standards for the conduct of work" –Crippen, et al., 2005¹

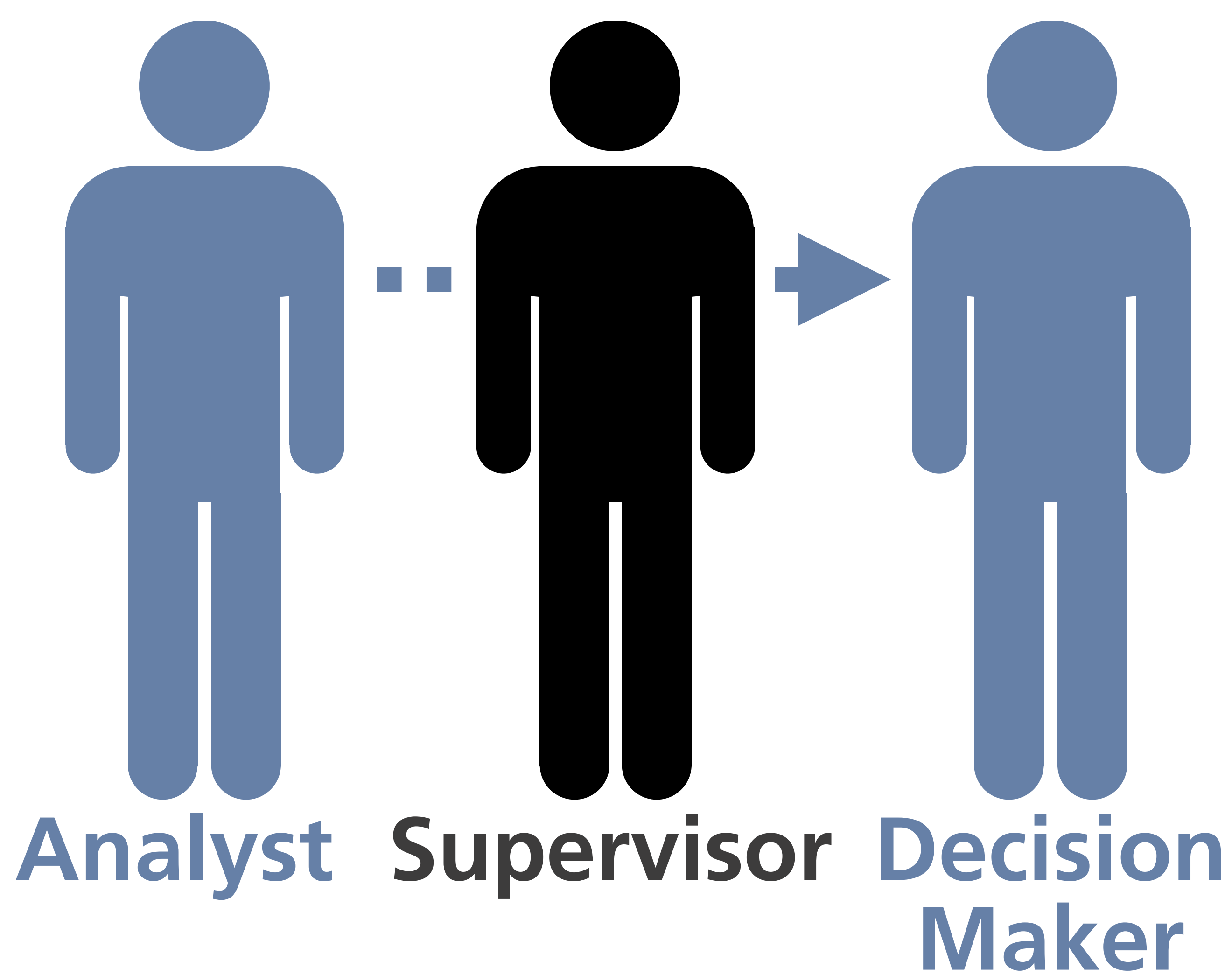
"application of precise and exacting standards... to better understand and draw conclusions... based on careful consideration or investigation" –Military Operations Research Society, 2006²

the quality of being strict and inflexible –McKean, 2005³

A Practice-Driven Perspective

for the professional information analyst, rigor is not understood by assessing deviations of process, but rather, by assessing the contextual sufficiency of many different aspects of analytic process

1 Crippen, D. L., Daniel, C. C., Donahue, A. K., Helms, S. J., Livingstone, S. M., O'Leary, R., & Wegner, W. (2005). Annex A.2: Observations by Dr. Dan L. Crippen, Dr. Charles C. Daniel, Dr. Amy K. Donahue, Col. Susan J. Helms, Ms. Susan Morrissey Livingstone, Dr. Rosemary O'Leary, and Mr. William Wegner. In Return to Flight Task Group (Eds.), *Return to Flight Task Group final report* (pp. 188-207). Washington, DC: U.S. Government Printing Office.
2 Military Operations Research Society (2006, July 19). Terms of reference. In *Bringing Analytical Rigor to Joint Warfighting Experimentation*. Retrieved February 27, 2006, from <http://www.mors.org/meetings/bar/for.htm>
3 McKean, Erin (Ed.). (2005). *The new Oxford American dictionary* (2nd ed.). Oxford: Oxford University Press.

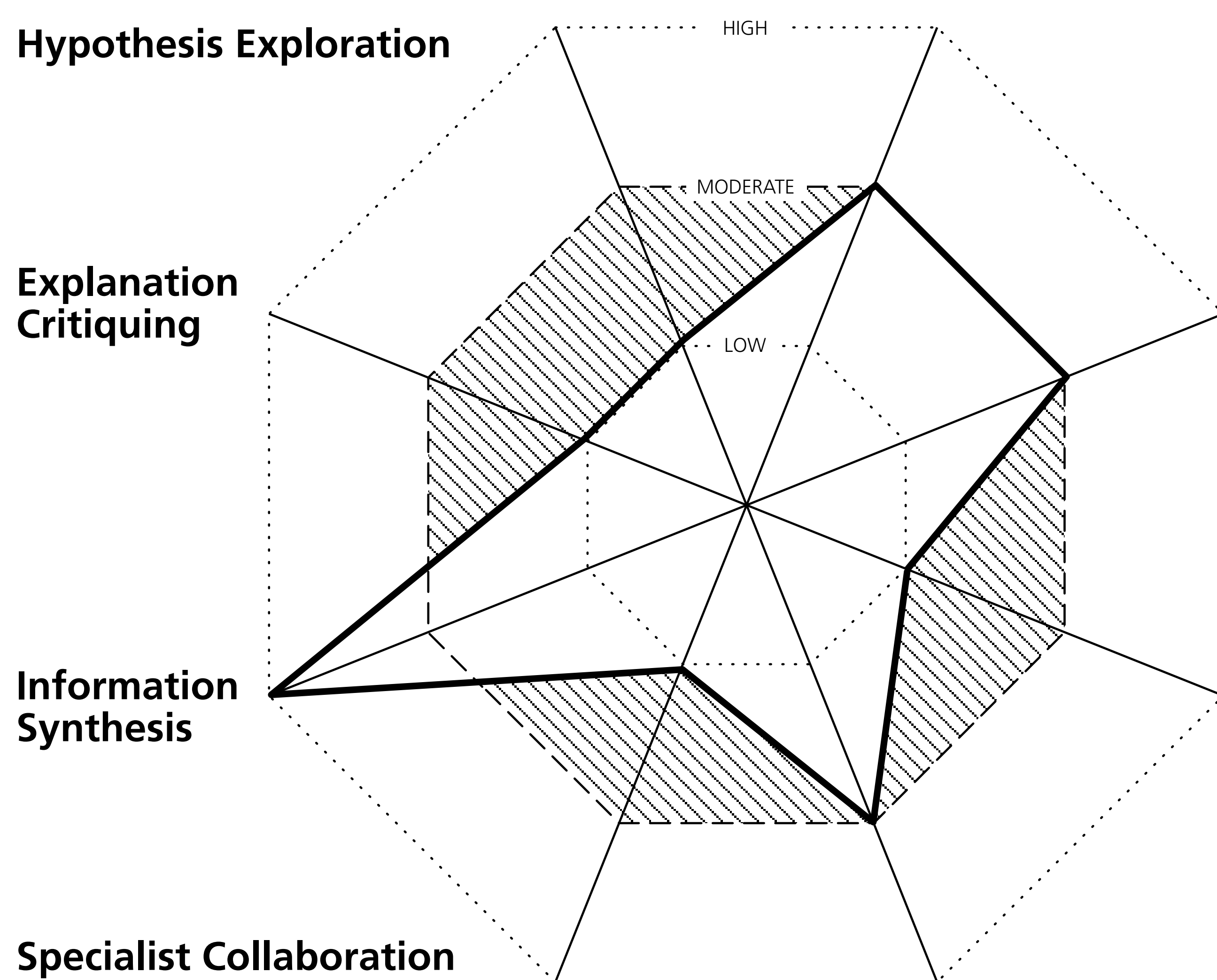


Supervisor's Dilemma

a generic judgment task wherein a supervisor must decide if the output product of an analyst is sufficiently rigorous or if more resources must be invested in the analytic process before sending the analysis forward to a decision maker

Rigor Attribute Model

the practice-driven perspective that emerged from the study frames rigor as the composite of multiple process attributes... a representation aggregating these critical indicators, shown below, supports the assessment of analytical rigor

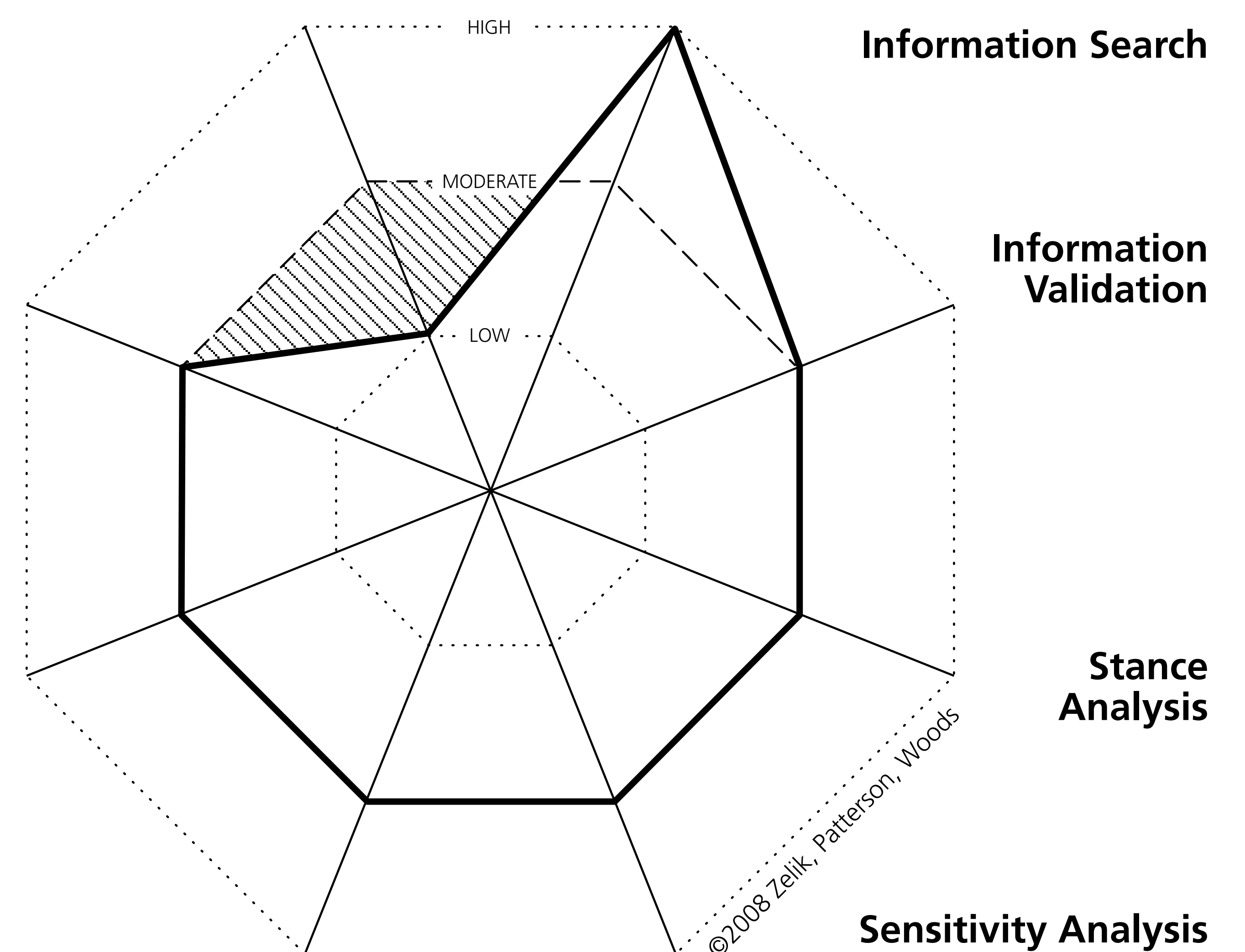


Hypothesis Exploration extent to which multiple, alternative explanations were considered in interpreting available data

Explanation Critiquing collaboration that supports a diversity of perspectives involved in evaluating primary hypotheses

Information Synthesis beyond basic collection and listing of data toward extraction and integration of information

Specialist Collaboration degree to which perspectives of domain experts are incorporated into the overall assessment



Information Search depth and breadth of the search processes and methods used in collecting supporting data

Explanation Critiquing level at which information sources are corroborated and cross-validated

Stance Analysis evaluation of data with goal of identifying relative perspectives of sources and placing them into a broader context

Sensitivity Analysis scale at which the assumptions and limitations of an analysis are understood and conveyed