

ASSUMPTIONS, TRUISMS & FALLACIES

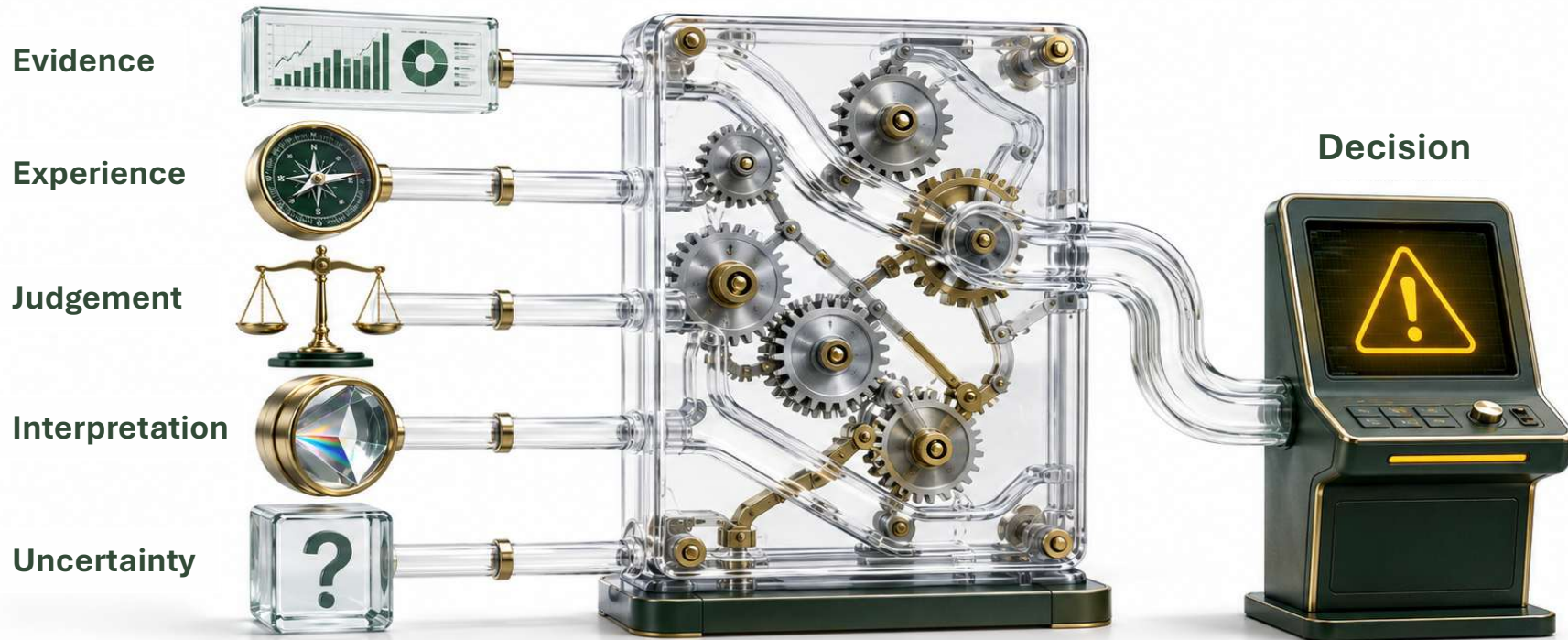
The three ways reasoning can mislead aviation security



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The data may be correct, but the reasoning may not be



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Three different problems



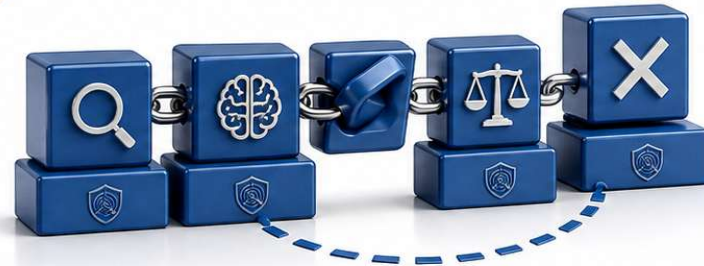
ASSUMPTION UNVERIFIED

Accepted without complete evidence



TRUISM UNHELPFUL

Broadly true but offers little insight



FALLACY ILLOGICAL

The conclusion does not follow

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What are we taking for granted?

Assumptions fill gaps when complete information is unavailable



-  **EXPLICIT**
-  **PLAUSIBLE**
-  **RELEVANT**
-  **TESTABLE**
-  **MONITORED**

Necessary does not mean proven

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No reporting, nothing has changed?



 **REPORTING
SYSTEMS ARE WORKING**

 **PEOPLE RECOGNISE
WHAT TO REPORT**

 **INFORMATION IS
BEING SHARED**

 **SOURCES HAVE
APPROPRIATE ACCESS**

 **THE THREAT
REMAINS STABLE**

Absence of reporting $\neq$ absence of threat

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If this is wrong, what changes?



- 1** What evidence supports it?
- 2** What evidence contradicts it?
- 3** Why must we rely on it?
- 4** What would show it is no longer valid?
- 5** What happens if it is wrong?

Test the assumption before the decision test you

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True but does it help?

A truism is broadly true but may provide little decision value



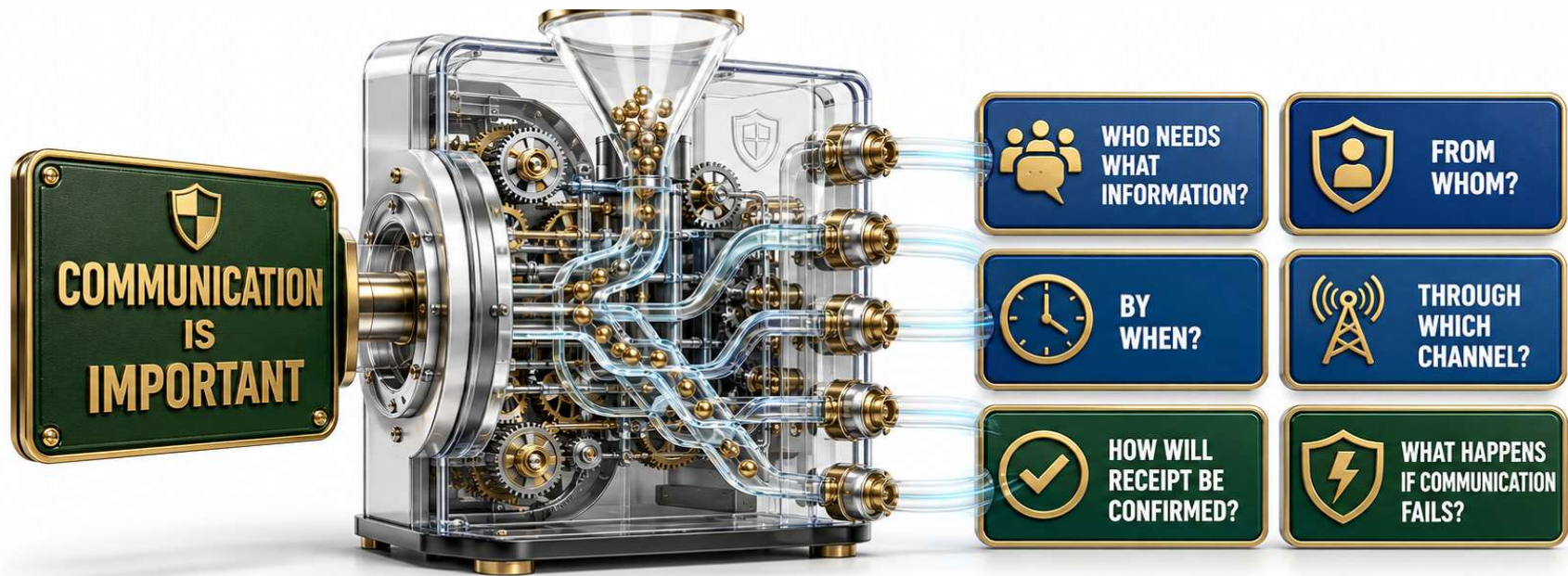
A true statement is not yet an action

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Move the slogan to specific action



Useful analysis converts general truth into decision requirements

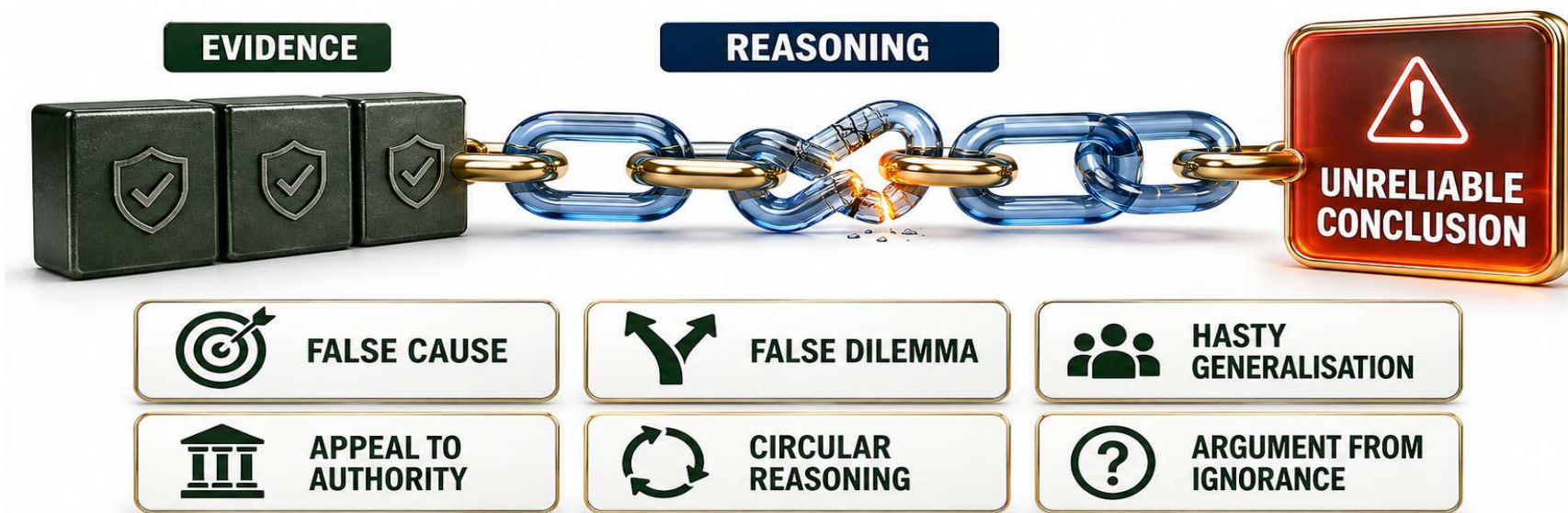
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When the logic does not hold

The evidence may be real, but the conclusion may still be unreliable



Check the connection, not just the information

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It happened after, so did it happen because of it?

Example: “ Incidents fell after new technology was introduced, did the technology cause the reduction?”



Sequence does not prove causation

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We must either continue or close?



Do not let a binary question hide proportionate options

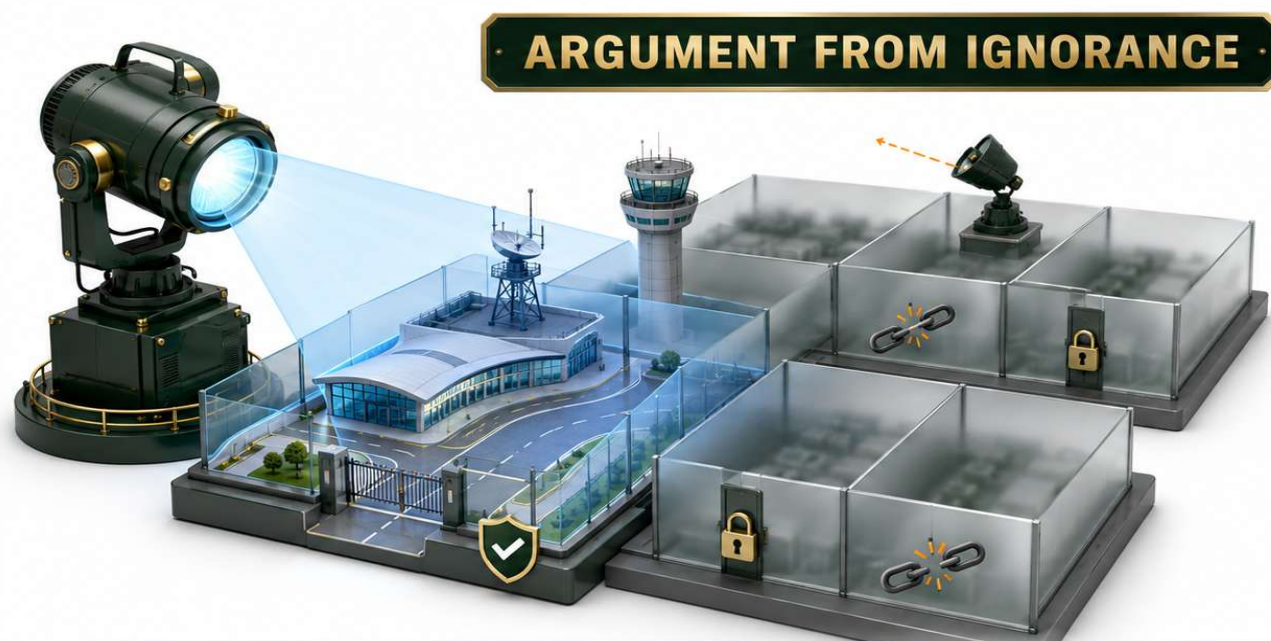
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No evidence, therefore, it is not happening?



? UNKNOWN DOES NOT MEAN SAFE.

? UNKNOWN DOES NOT AUTOMATICALLY MEAN DANGEROUS.

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Apply the challenge

Review the reasoning, not just the data



	What is accepted without verification?		Which statements offer no insight?
	Does the evidence support the conclusion?		What alternative explanations exist?
	What information would change the decision?		How confident are we and why?

Challenge makes the decision more defeasible

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Challenge the reasoning, not just the data

Assumptions:
Make them visible and test them



Truisms:
Convert them into requirements



Fallacies:
Identify and correct them



Good information does not guarantee a good decision

Structured challenge, supports professional judgement; it does not eliminate uncertainty

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