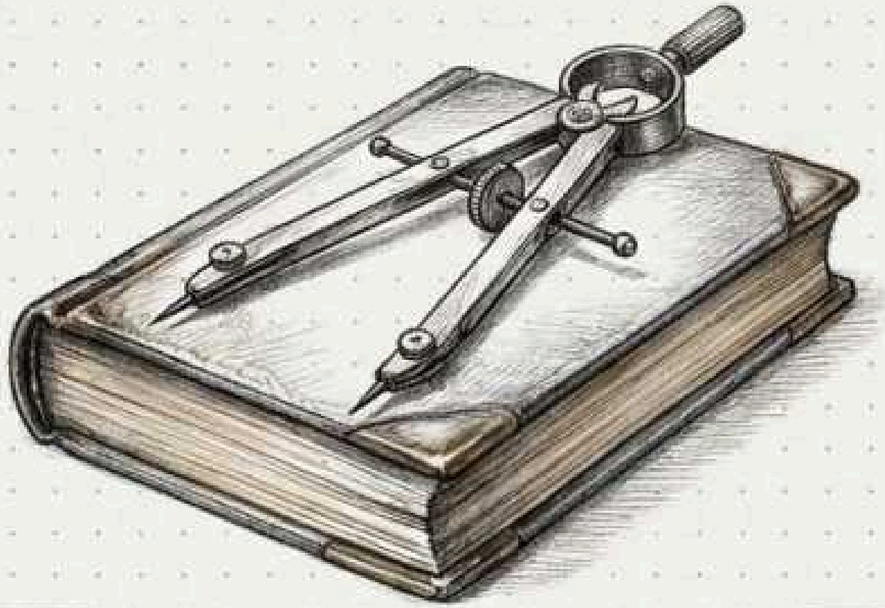
¶ 1.1

Lecture 1: What Is an Argument?

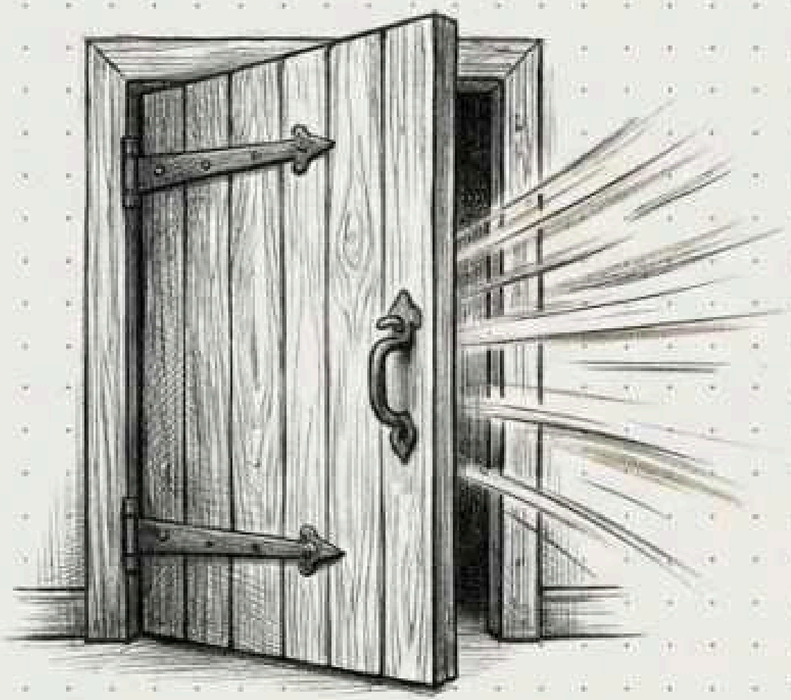


At a glance:

- Defining an argument
- Understanding how premises support conclusions
- Discovering how to find them in ordinary prose

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The Quarrel



- raised voices
- slammed doors
- emotional conflict

The Quiet Equation

$$P_{remises} \rightarrow C_{onclusion}$$

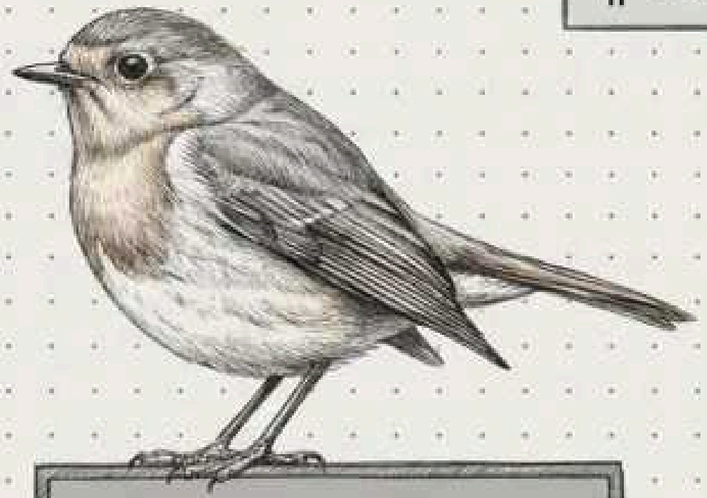
Premises: Statements offered as reasons.

Conclusion: The statement being accepted.

Note: No shouting required.

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The Logical Input/Output System



Reasons Go In

Statement 1:
All birds have feathers.

Statement 2:
A robin is a bird.

Therefore

∴

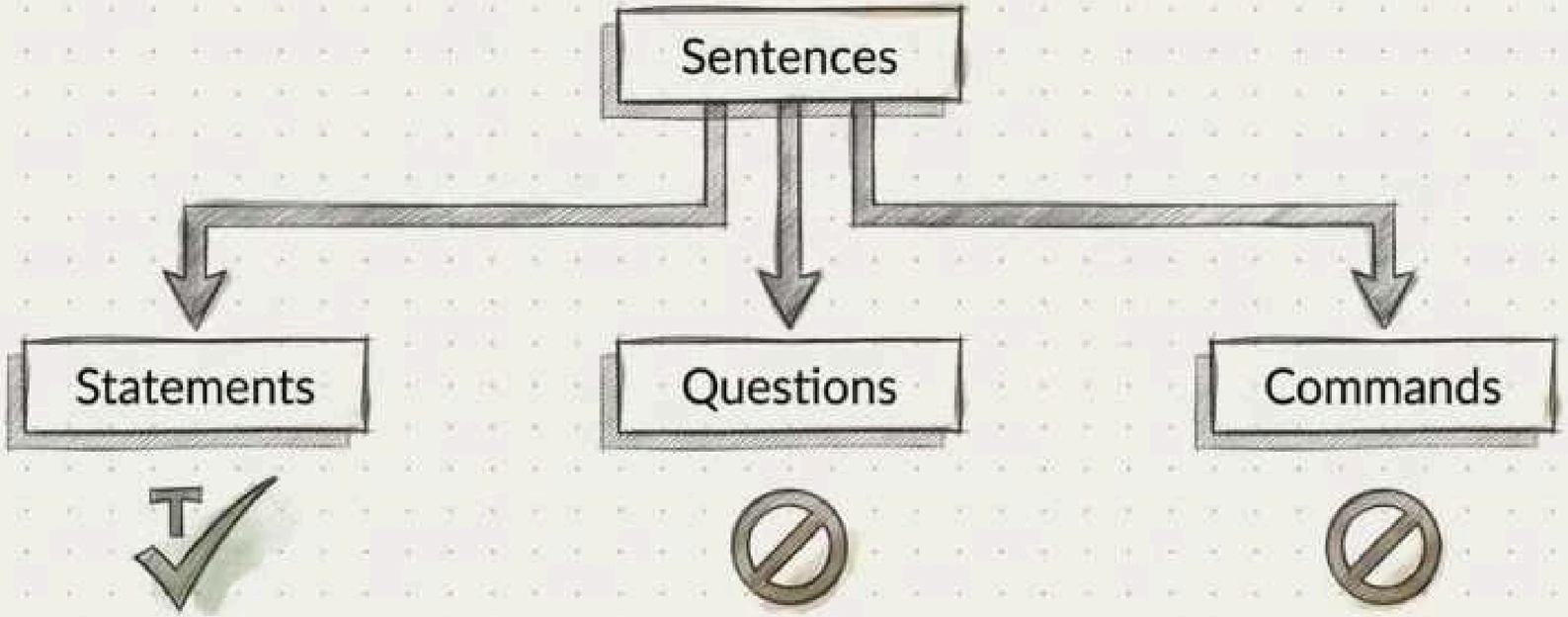
Conclusion Comes Out

Statement 3:
A robin has feathers.

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¶ 1.4

Logic Only Processes Statements



Key Insight: The foundational skill of logic is separating claims that have truth value from the rest of a passage.

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The Logician's Indicator Words

Premise Identifiers

Words introducing reasons.

because, since, given that

Conclusion Identifiers

Words introducing the claim.

therefore, so, hence, it follows that

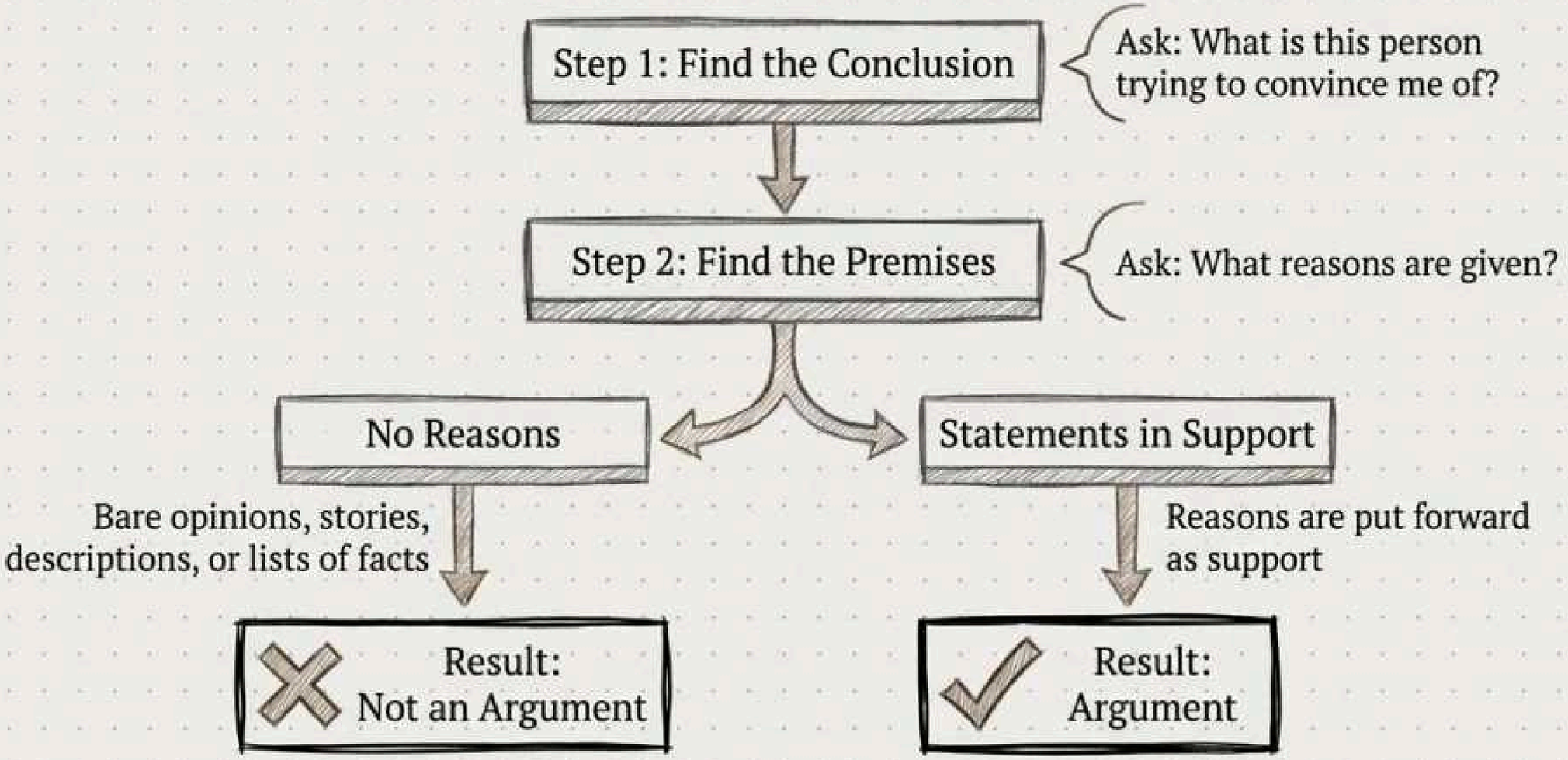


Indicators are helpful, not perfect. Real arguments rarely announce themselves tidily. When indicators are absent, ask: Which statement is the speaker trying to prove?

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¶ 1.6

The Diagnostic Test: Is It an Argument?



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Case Study: Connecting the Tissue

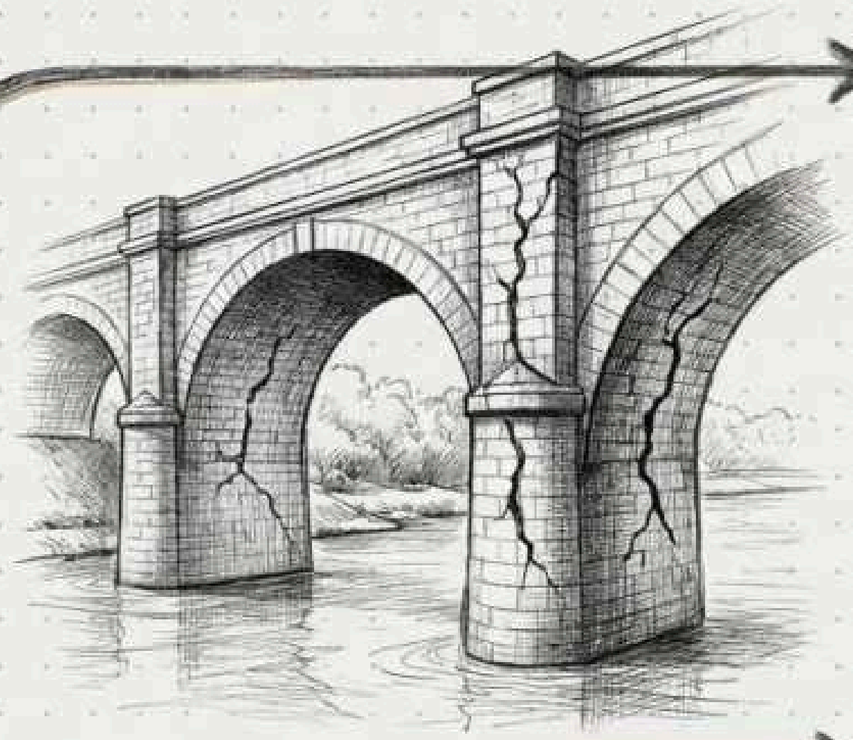
¶ 1.7

Case 1: Argument / Reasoned Explanation

The bridge is closed **BECAUSE** the inspectors found cracks in the supports.

Case 2: Fact Report

The bridge is closed **AND** it is a lovely day.



Annotation: Cracks are offered as a supportive reason.

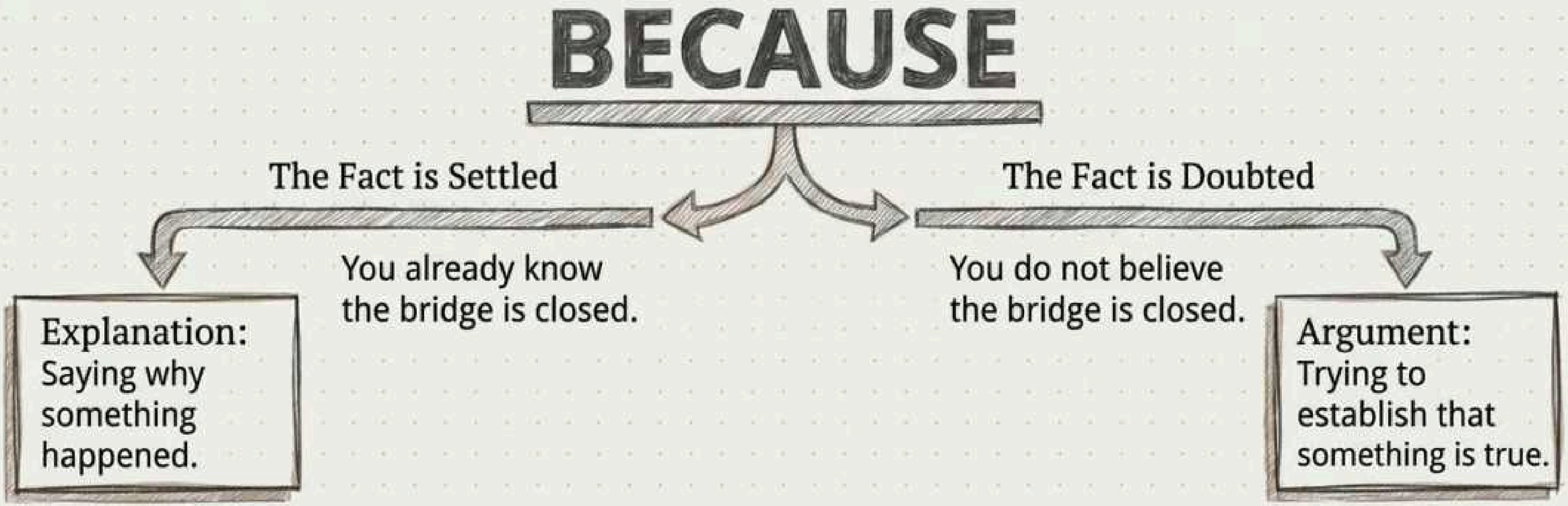
Annotation: Simply reporting two unrelated facts side-by-side.

Identifying these connective words is the first step to analyzing anything you read.

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Argument vs. Explanation

¶ 1.8

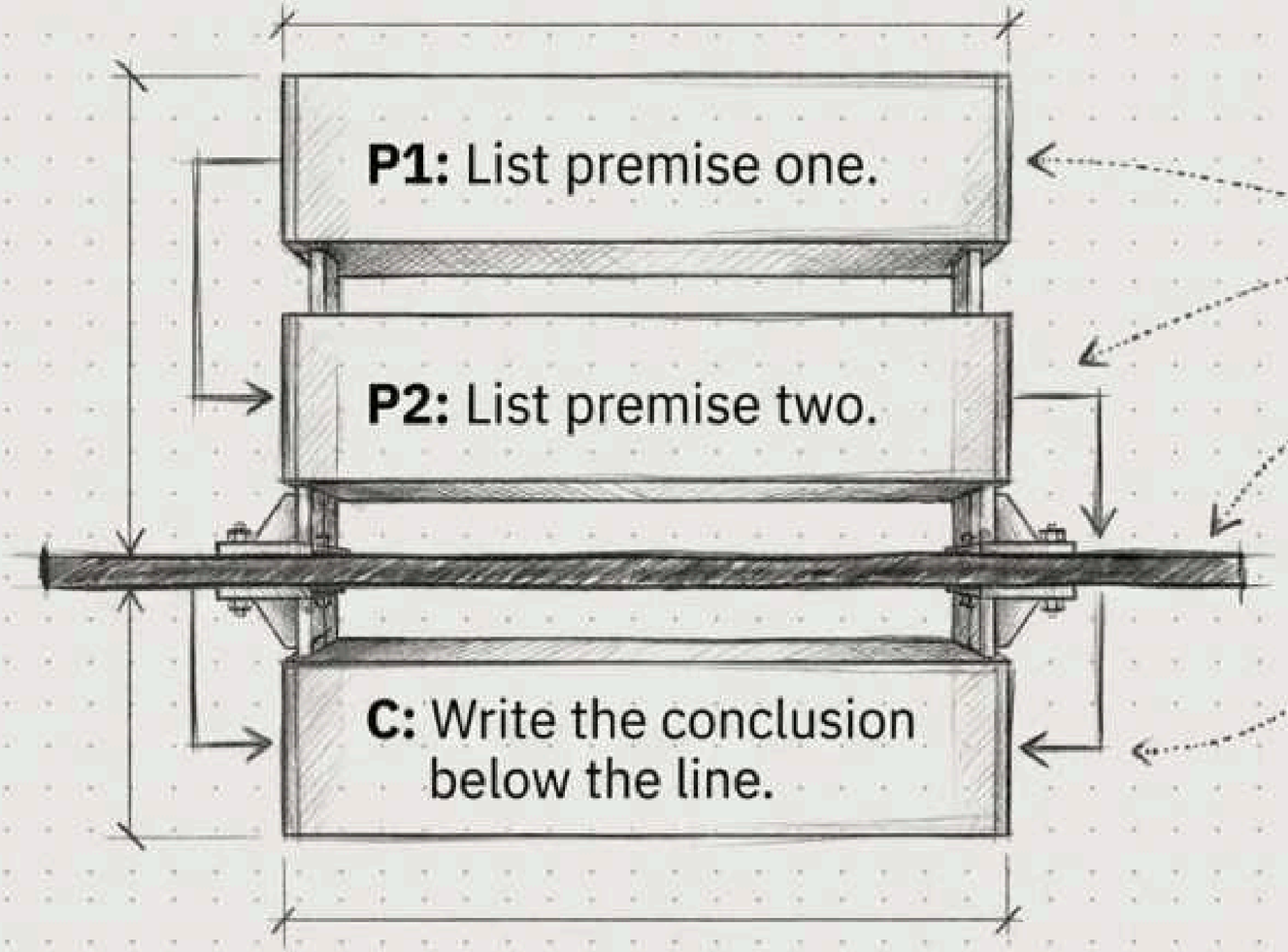


Core Principle: Context and the audience's state of mind determine whether a statement is explaining a known fact or arguing for a disputed one.

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The X-Ray: Standard Form

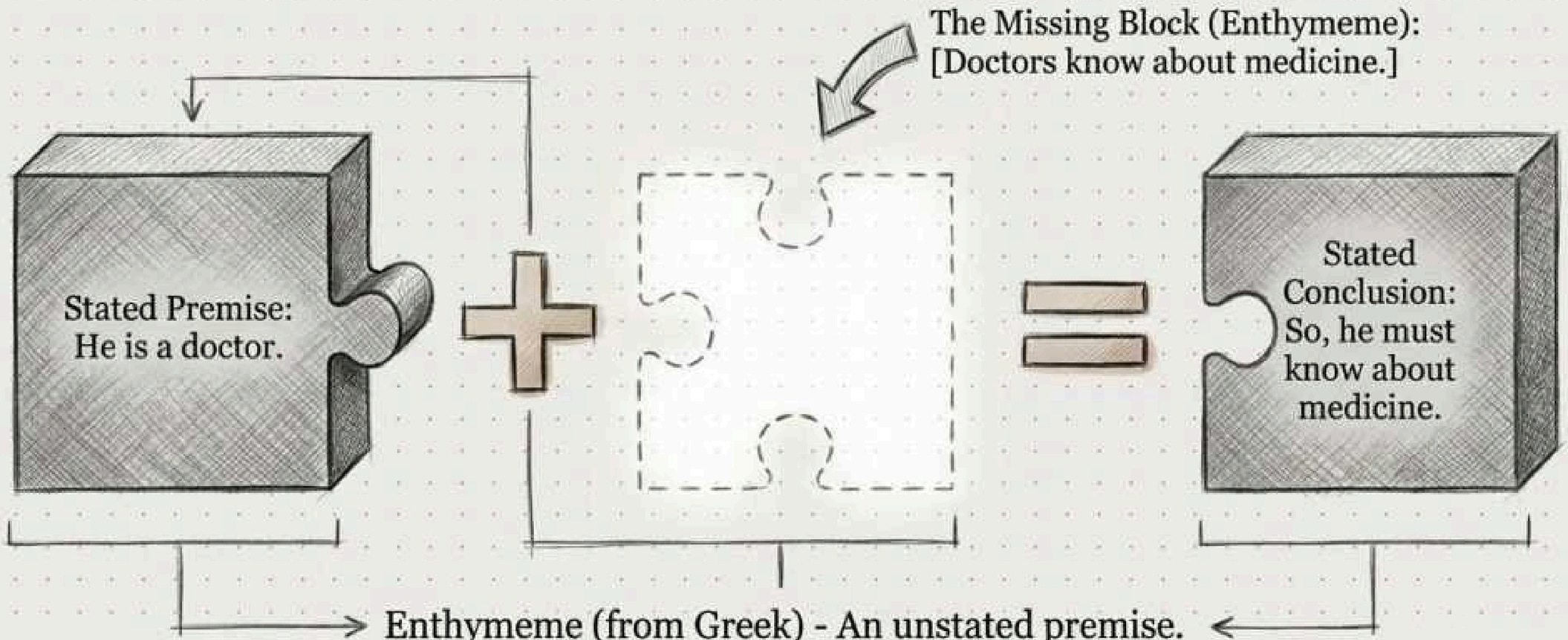
¶ 1.9



Standard form strips away rhetoric, reveals if an impressive speech relies on one weak premise, and exposes conclusions that quietly change halfway through.

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Enthymeme: The Hidden Pieces



Diagnostic Insight: Spotting these missing pieces is crucial, because the weakness of an argument often hides exactly in what is left unsaid.

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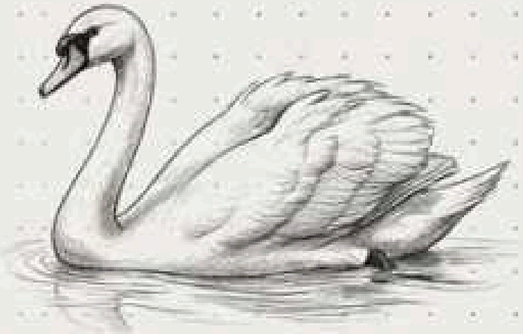
The Two Great Families of Argument

Deductive Arguments



- Premises are meant to guarantee the conclusion.
- If premises are true, the conclusion cannot be false.
- Example: The Robin / Feathers framework.

Inductive Arguments

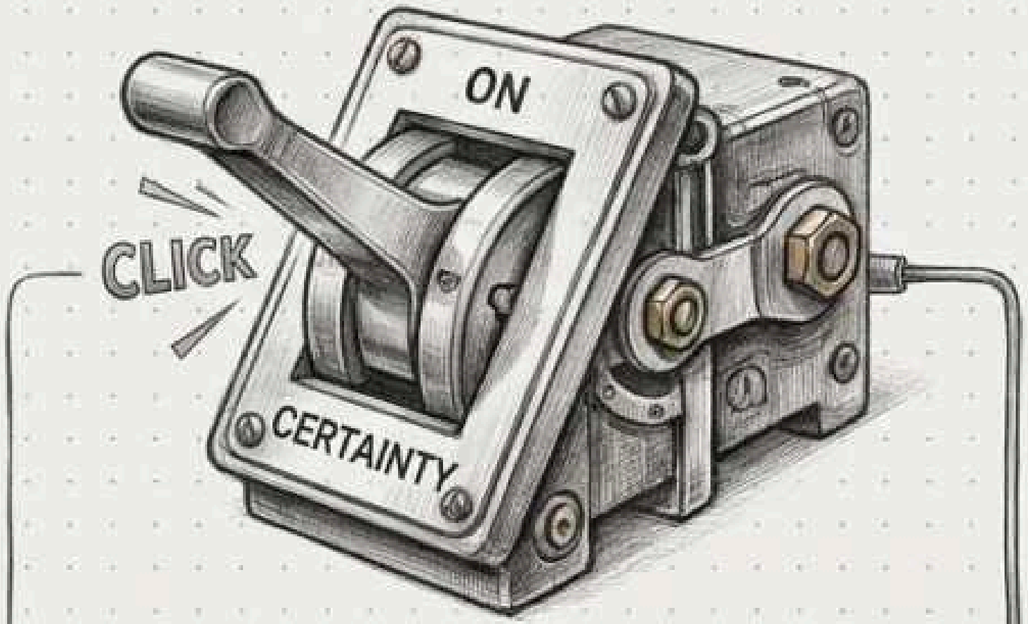


- Premises are meant to make the conclusion probable.
- Example: Every swan I have seen is white, so the next swan will probably be white.

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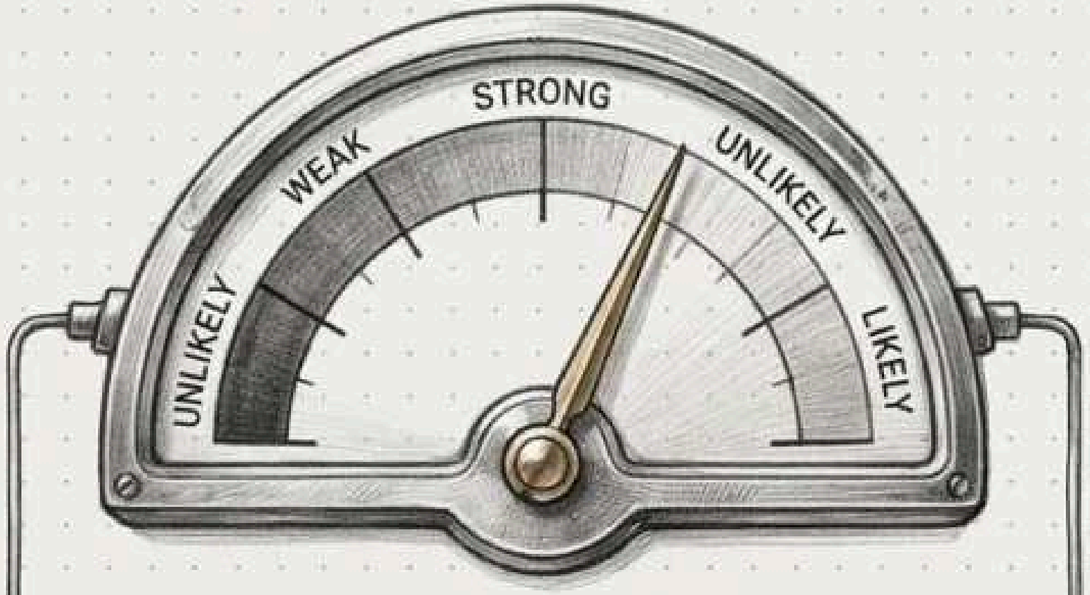
Certainty vs. Likelihood

¶ 1.12



Deduction (The Binary Switch)

- Promises absolute certainty. Can fail outright.
- Home Domain: Mathematics and formal logic.



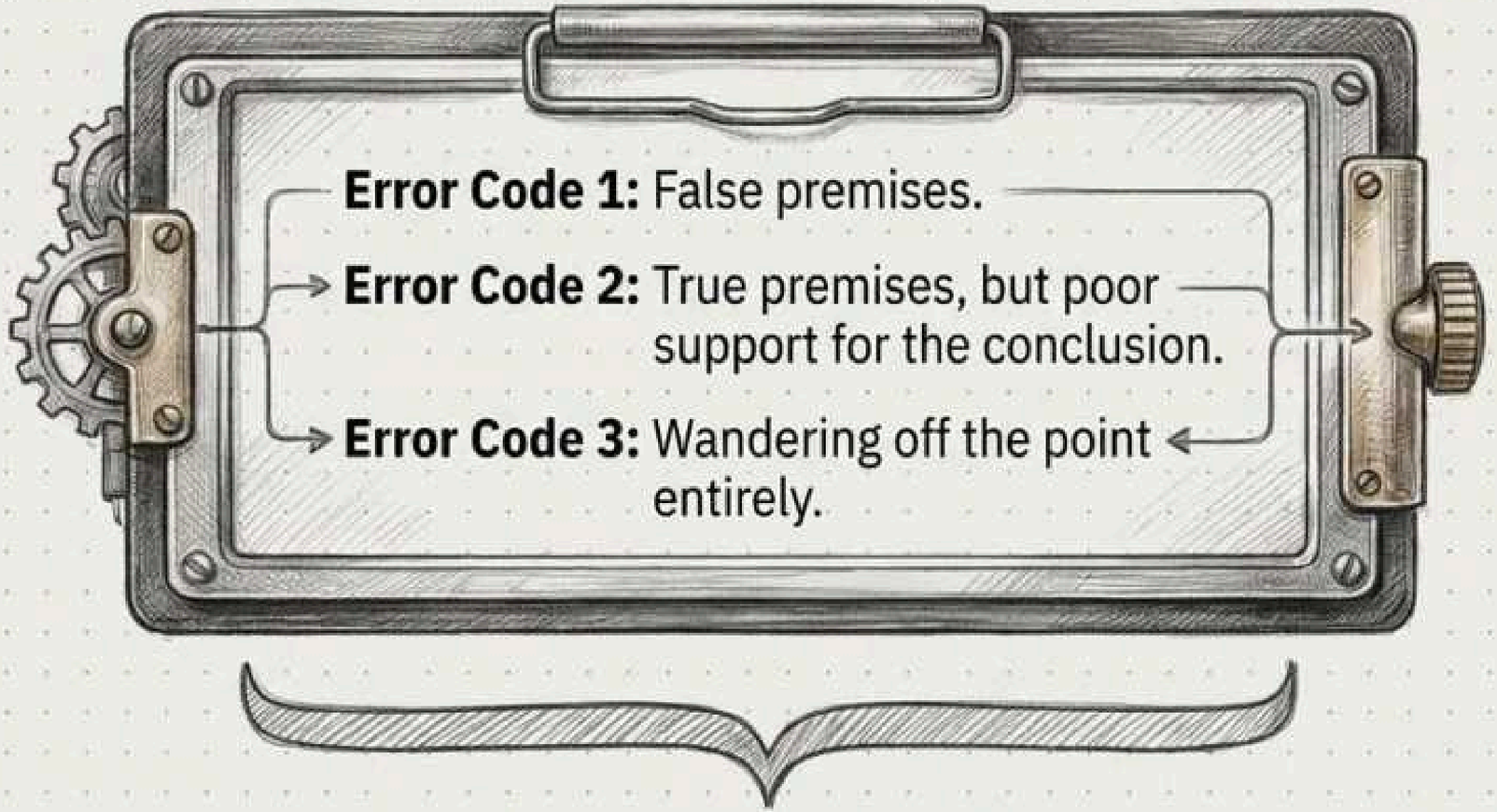
Induction (The Gradient Gauge)

- Promises likelihood. Comes in degrees (strong or weak).
- Home Domain: Daily life, science, and medicine.

Note: The difference lies in the strength of the claim, not the subject matter.

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Why Bother With This Machinery?



Core Philosophy:

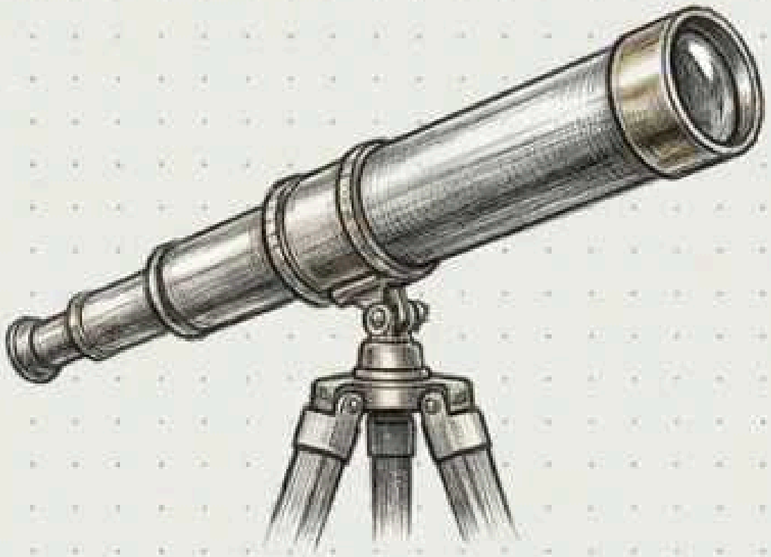
Logic gives specific names to these failures, making them easy to spot. You cannot fix a problem you cannot name.

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¶ 1.14

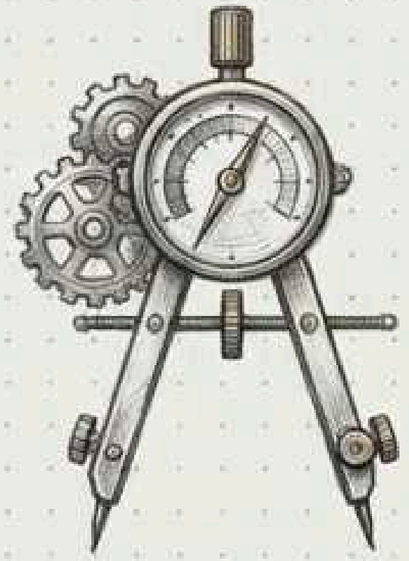
What Logic Is NOT

The Sciences / Evidence



Determines whether a premise is actually true in the real world.

Logic



Tells you only about the structural relationship between premises and the conclusion.

The Paradox:

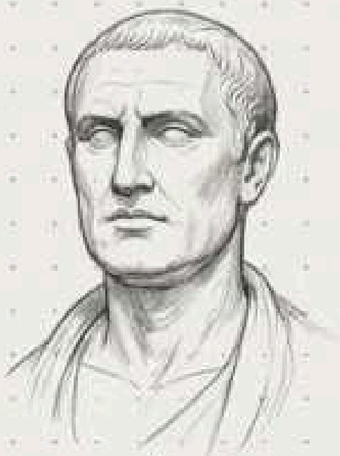
A flawless argument built from false premises can perfectly lead to a false conclusion.
A sloppy, illogical argument can accidentally land on a truth.

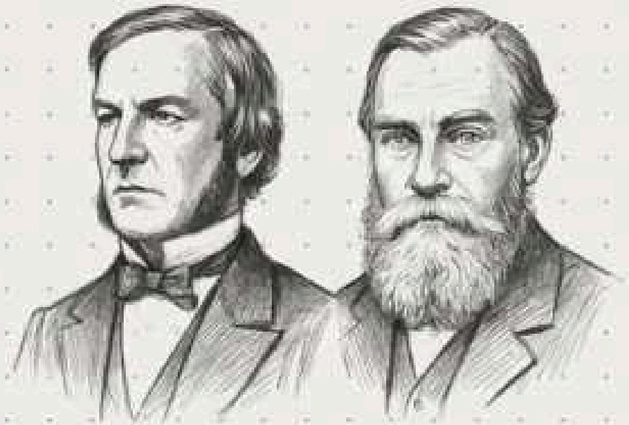
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A Brief Lineage of Logic

¶ 1.15







4th Century BCE: Aristotle

Wrote the first systematic treatise on reasoning (The Organon / The Tool).

Ancient Era: The Stoics

Developed a second system focused on whole statements

19th Century: George Boole & Gottlob Frege

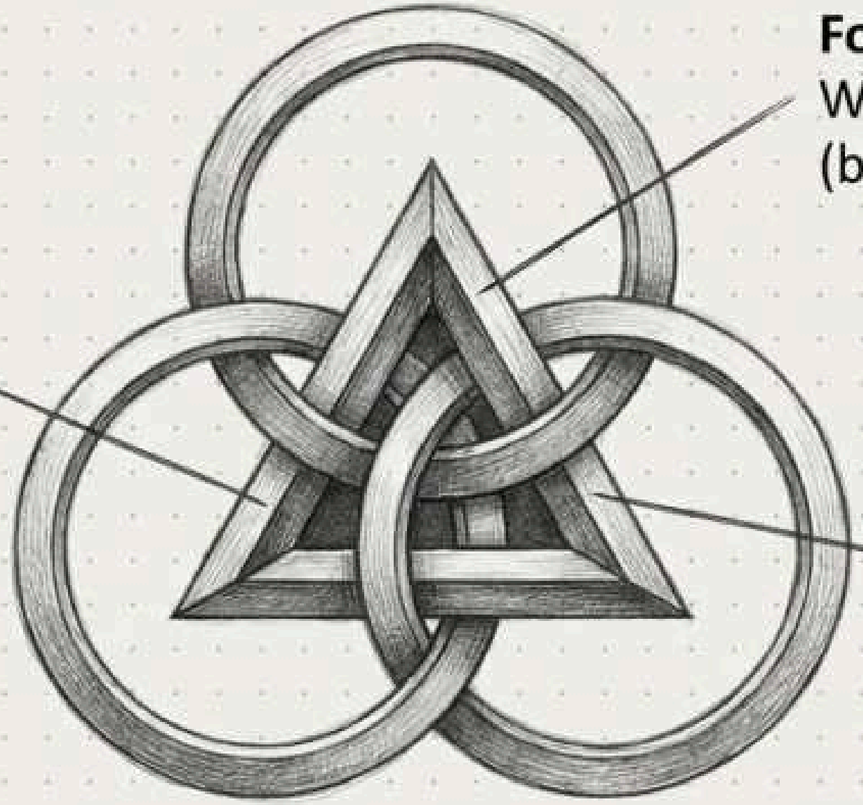
Gave logic a mathematical form—foundational work that later made modern computers possible

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The Trinity Framework

Foundation:
What are the premises (both stated and unstated)?

Target:
What is the conclusion?



Connection:
Do the premises really support the conclusion?

Note: The remaining lectures will provide precise tools for sharpening and answering Question 3.

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The Takeaway Challenge

¶ 1.17

Pick an argument you heard this week and process it through the logical machinery:

1. Write it in standard form.
2. Identify the conclusion.
3. Supply any hidden premises (enthymemes) the speaker left out.
4. Evaluate: Did the reasons actually support the claim?

Standard Form

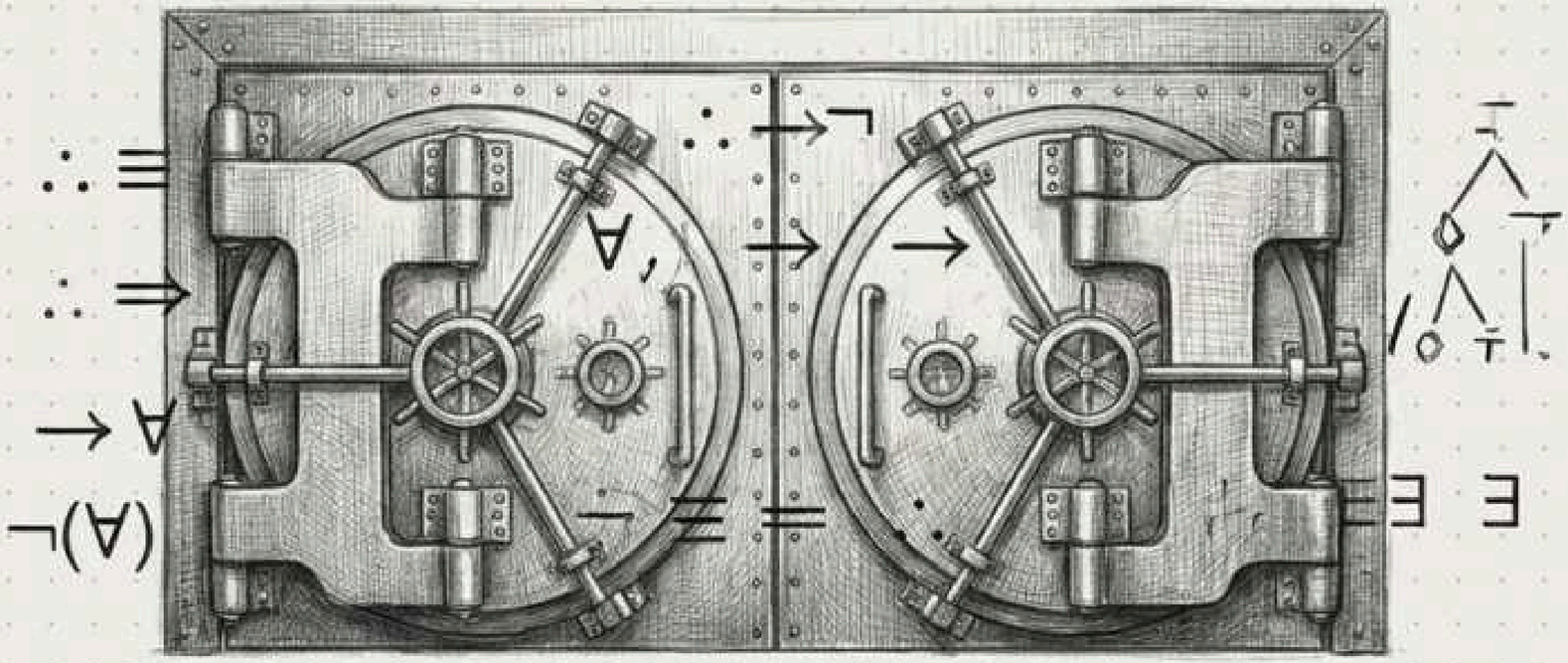
P1: _____

P2: _____

C: _____

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Looking Ahead to Lecture 2



Prepare to meet the two most important words in all of logic:

VALIDITY

SOUNDNESS

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