REASONING - LOGICAL IS A SUBCATEGORY



I.Reasoning as the Umbrella Category

Definition (APA Dictionary of Psychology):

"Reasoning is the process of thinking in a logical way in order to form conclusions or judgments."

But it further states:

"Types of reasoning include deductive, inductive, analogical, abductive, mathematical, and causal reasoning."

Notice:
Deductive, inductive, and abductive are types of reasoning, not of logical reasoning.
If they were subtypes of logical reasoning, APA would have written:

Reasoning > Logical Reasoning > Deductive/Inductive/Abductive

But it does not.

They are all parallel branches under reasoning.

Logical reasoning is one of many types, not the parent.

Logical Reasoning ≠ All Structured Reasoning

Logical reasoning is reasoning that follows formal logic, such as:

If A = B, and B = C, then A = C.

Syllogisms

Truth tables

Symbolic logic

But!!!

Analogical reasoning: doesn't follow formal logic, yet is still valid cognitive reasoning.

Matrix reasoning: visual and pattern-based; not symbolic logic.

Moral reasoning: involves intuition and value-based processes.

Even abductive reasoning (best-guess based on limited data) often violates formal logic, and yet is still reasoning.

Thus:

Logical reasoning is a style or modality.

Deductive/inductive/abductive are mechanisms of inferential processing, applicable inside or outside of logical reasoning.

They don't fall under logical reasoning. They intersect, not inherit.

II. Hierarchy Breakdown (Actual Structure)

Correct Cognitive Hierarchy:

Reasoning
├── Logical Reasoning
├── Analogical Reasoning
├── Deductive Reasoning
├── Inductive Reasoning
├── Abductive Reasoning
├── Abstract Reasoning
├── Matrix Reasoning

Incorrect (What SCD forums wrongly assume):

Reasoning
└── Logical Reasoning
  ├── Deductive Reasoning
  ├── Inductive Reasoning
  └── Abductive Reasoning

Why that's wrong:

Deduction, induction, and abduction are inference systems, not structural children of a singular style.

Logical reasoning is only one mode that may use deductive structure, but so does scientific or philosophical reasoning.

III. Support from Standardized Cognitive Testing

Tests like WAIS-IV and WISC-V divide cognitive operations into broad factors:

> Fluid Reasoning (FRI)
Includes:

Matrix reasoning

Figure weights

Arithmetic reasoning

Pattern detection

No subtest is labeled “logical reasoning” because logic is a style of processing, not a domain of intelligence.

Confirmed: Deductive, inductive, abstract, and analogical reasoning are treated as independent and equal under FRI, not nested under logical reasoning.

TL;DR [FOR LAZY BUMS]

Reasoning is the master cognitive function.
It includes logical reasoning, deductive reasoning, inductive, abductive, analogical, abstract, matrix, and more.

Logical reasoning is a subcategory of reasoning, referring specifically to structured thinking using formal rules.

Deductive, inductive, and abductive reasoning are independent mechanisms of inference, and not subtypes of logical reasoning.
They can operate within logical reasoning, but also outside it in probabilistic, moral, or analogical contexts.

Thus, it is incorrect to say

"deductive/inductive/abductive" are subtypes of logical reasoning.

They are subtypes of reasoning itself.