



Critical Thinking for Everyday Life

Week 3

Reaching and Checking Your Findings!

What We'll Learn in Week 3

This week we investigate the Elements of Thought covering inference/interpretations and implications/consequences, which help you reach the findings from your thinking. We also look at taking your findings and developing a logical argument, then checking your results for quality.

On the completion of this lesson you will have been introduced to the final techniques helping you conduct a good critical thinking analysis.

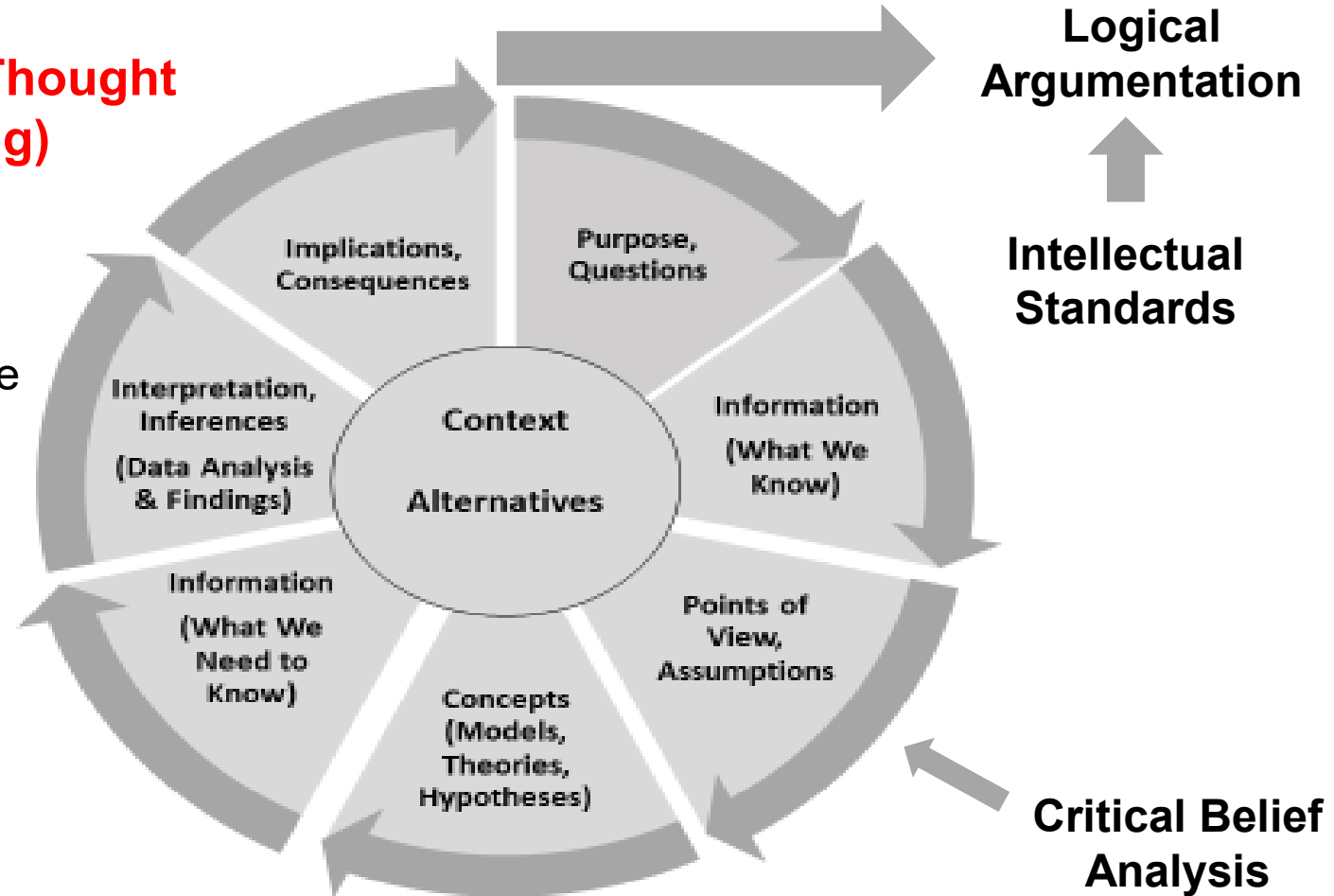


Critical-Thinking Framework

Elements of Thought (Reasoning)

Use of this framework helps overcome cognitive biases and other thinking problems

Modified from the Elder & Paul (Nosich) Critical Thinking Framework from the Foundation for Critical Thinking



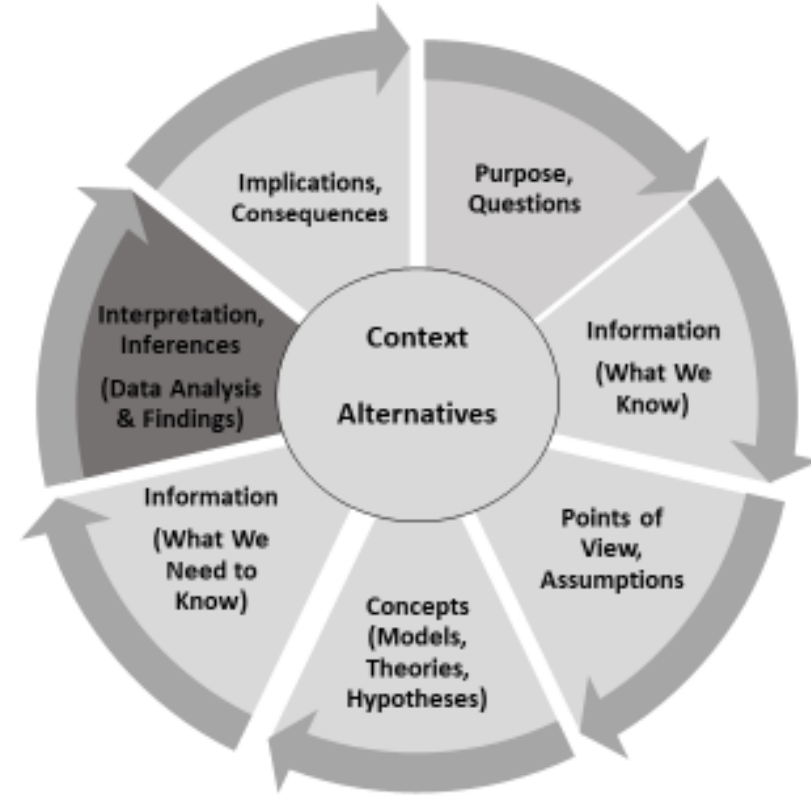
Interpretation and Inferences

Definition:

Interpretations and inferences are the findings you come to in your analysis. Inferring is what the mind does in figuring something out.

Thousands of techniques exist for developing interpretations and inferences, ranging from qualitative methods (e.g., pros-cons-fixes, matrixes) to quantitative methods (e.g., math, statistics).

Today we look at pros-cons-fixes and outcome matrixes—the most useable techniques in everyday life



Pros-Cons-Fixes Example

Question: What house should we buy?

Alternative: 201 Main Street

Hypothetical Data

Pros	Cons	Fixes
	\$300,000 (50K over preferred)	Offer less
15 min. to work		
	1500 sq. ft., 3/2, too small	Build \$100,000 addition
	Outdated Kitchen	\$40,000 rehab
Ground Floor Master		
Lake and golf view		

Outcome Matrix Example 1

Question: Which small SUV should we buy?

Hypothetical Data

Evaluation Factors	Toyota RAV-4 Limited	Honda CR-V Touring	Ford Escape S
Cost	\$34,580	\$33,650	\$27,630
Engine	2.5L/4 cyl	1.5L/4 cyl	1.5L/4 cyl
MPG (City/Hwy)	27/35	28/34	44/37
Audio/Navigation	Basic	Advanced	Basic
Electronic Safety Equip.	Basic	Advanced	Basic
Dealership	Hard sell, farthest from home, service seemed pressured toward profit	Wife likes best, closest to home, good history with Honda service	2 nd farthest from home, know little of dealer and service
Consequence: Safety	Good	Best	Fair
Consequence: Maintenance Costs	Most Expensive	Middle	Cheapest
Decision		X	

Outcome Matrix Example 2

Not Weighted

Example: “Which Political Candidate to Vote For”			
Perspective: Voter			
	Options/Alternatives		
Evaluation Factors, Evidence, Assumptions	Candidate A	Candidate B	Candidate C
Party Legacy—Ideology, Political Culture	C	I	I
Candidate Character/Personality	I	C	C
Appeals to: Well Being, Fear, Anger, etc.	C	C	I
Has Plan for Addressing Societal Issues:			
Threats to Democracy	I	C	I
Jobs & Economy	I	I	I
Cost of Living (Inflation)	I	I	I
Abortion Rights	I	C	C
Immigration & Border Control	I	C	C
Crime	C	I	I
Climate Change	I	C	C
Other: Gun Safety	I	C	C
Decision (least inconsistencies)	8	4*	6

Hypothetical Data

* Likely Decision



Implications and Consequences

Definition:

Implications and Consequences are claims or truths that logically follow from your findings or conclusions.

Implications follow from thoughts.

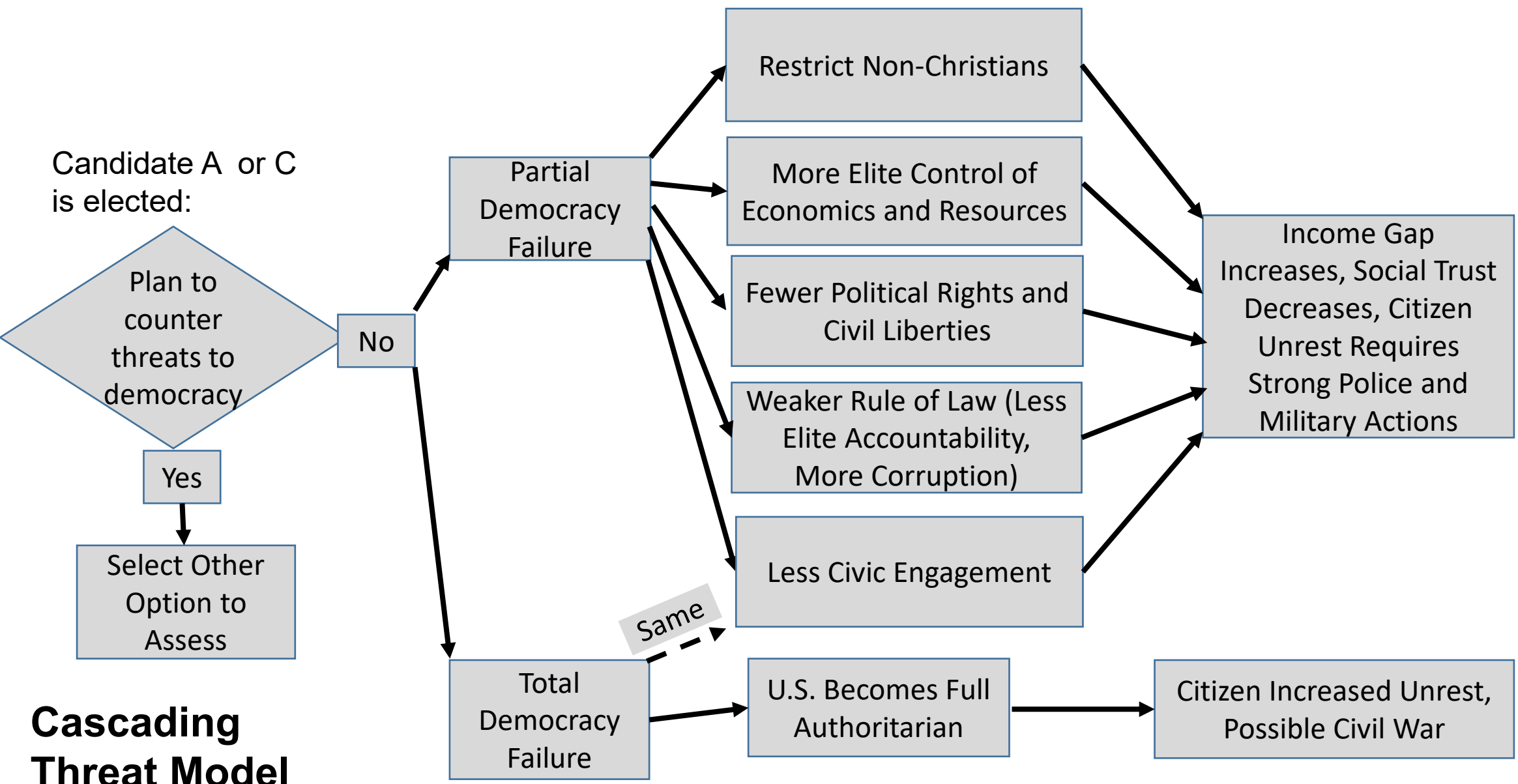
Consequences follow from actions.

Consequences are often classified as first, second, or third order effects.

Cascading Threat Modeling is one technique to diagram implications and consequences.



Option (Selected Action) → Implications → 1st Order Consequences → 2nd Order Consequences



Cascading Threat Model

Time for a
Break!

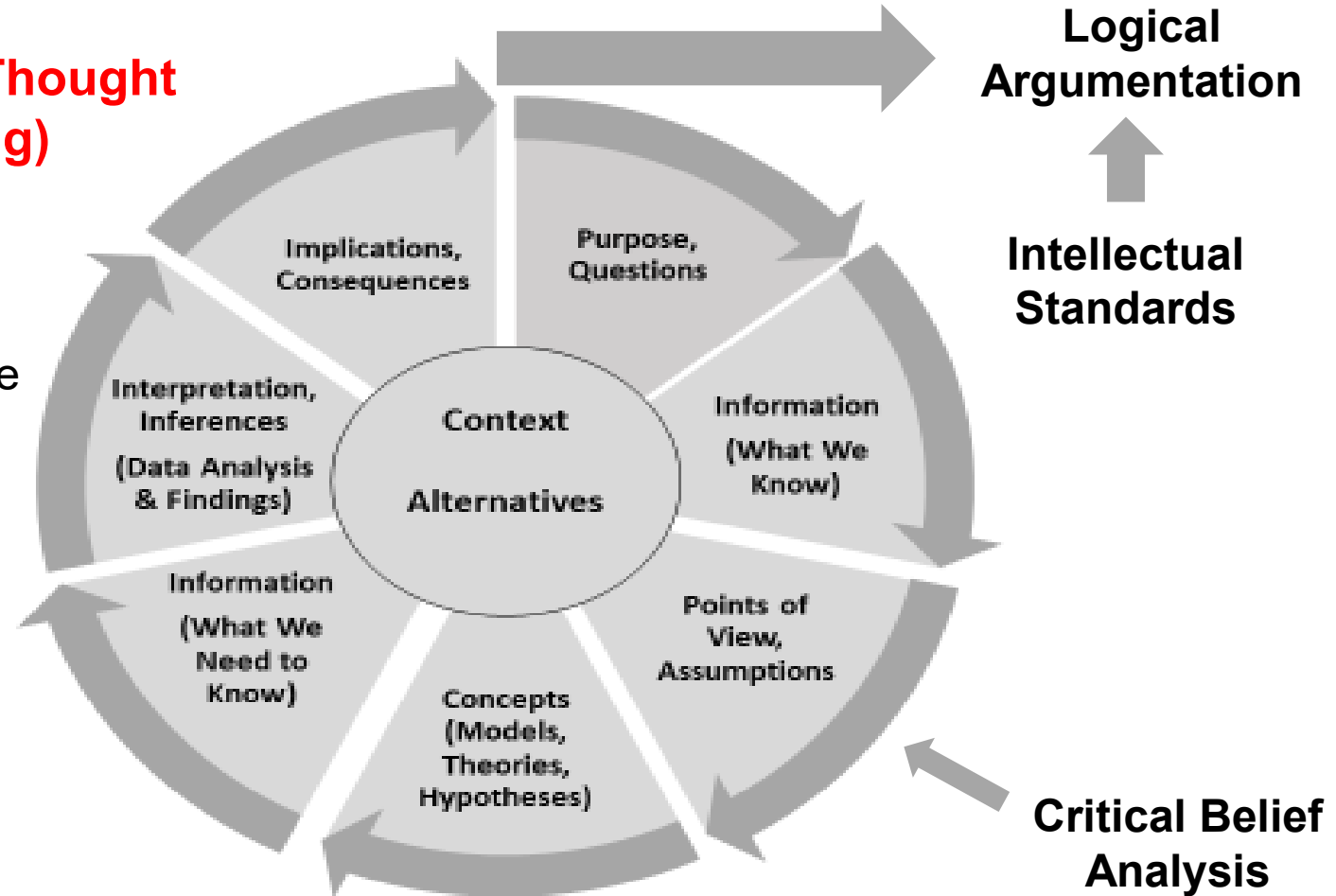


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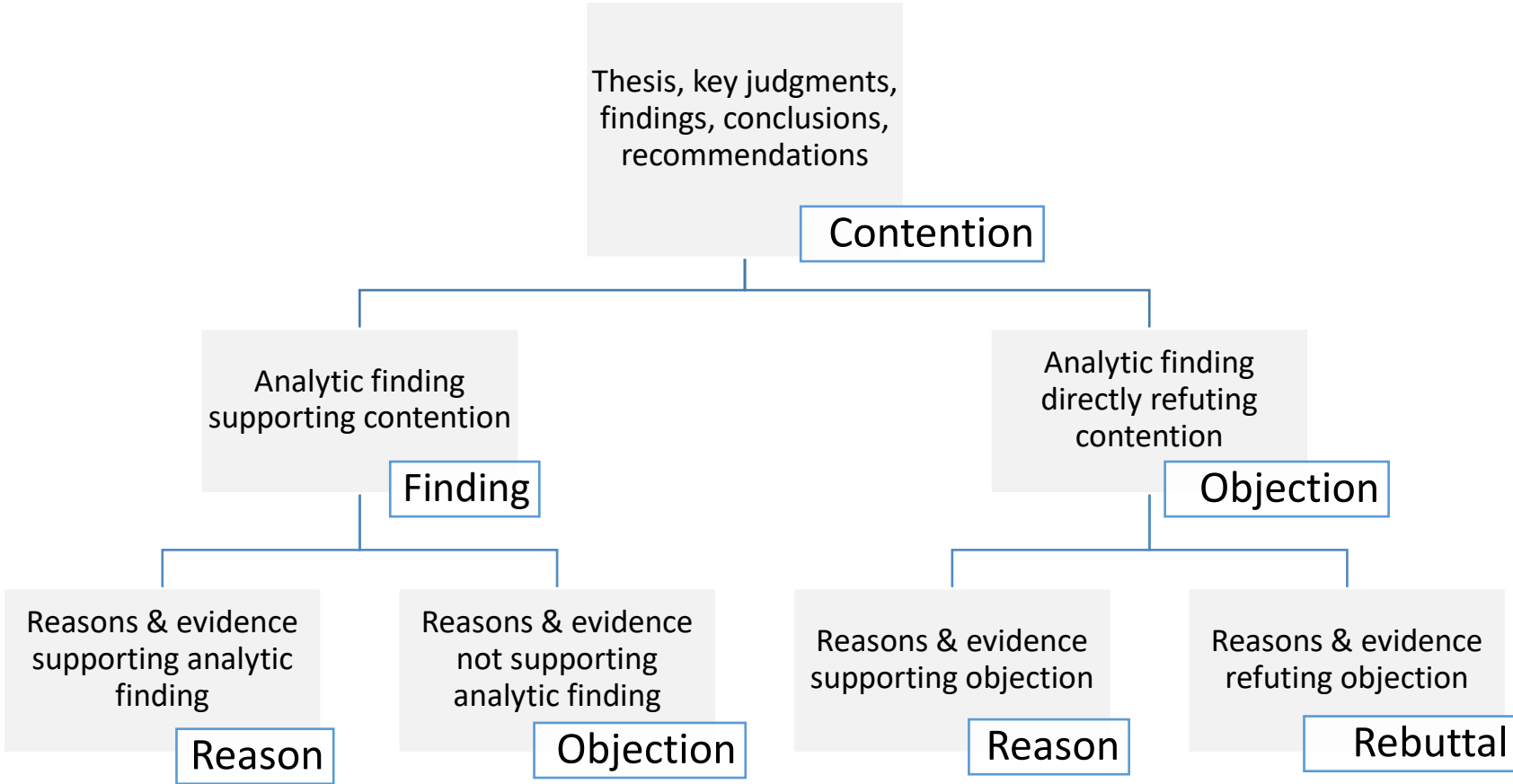
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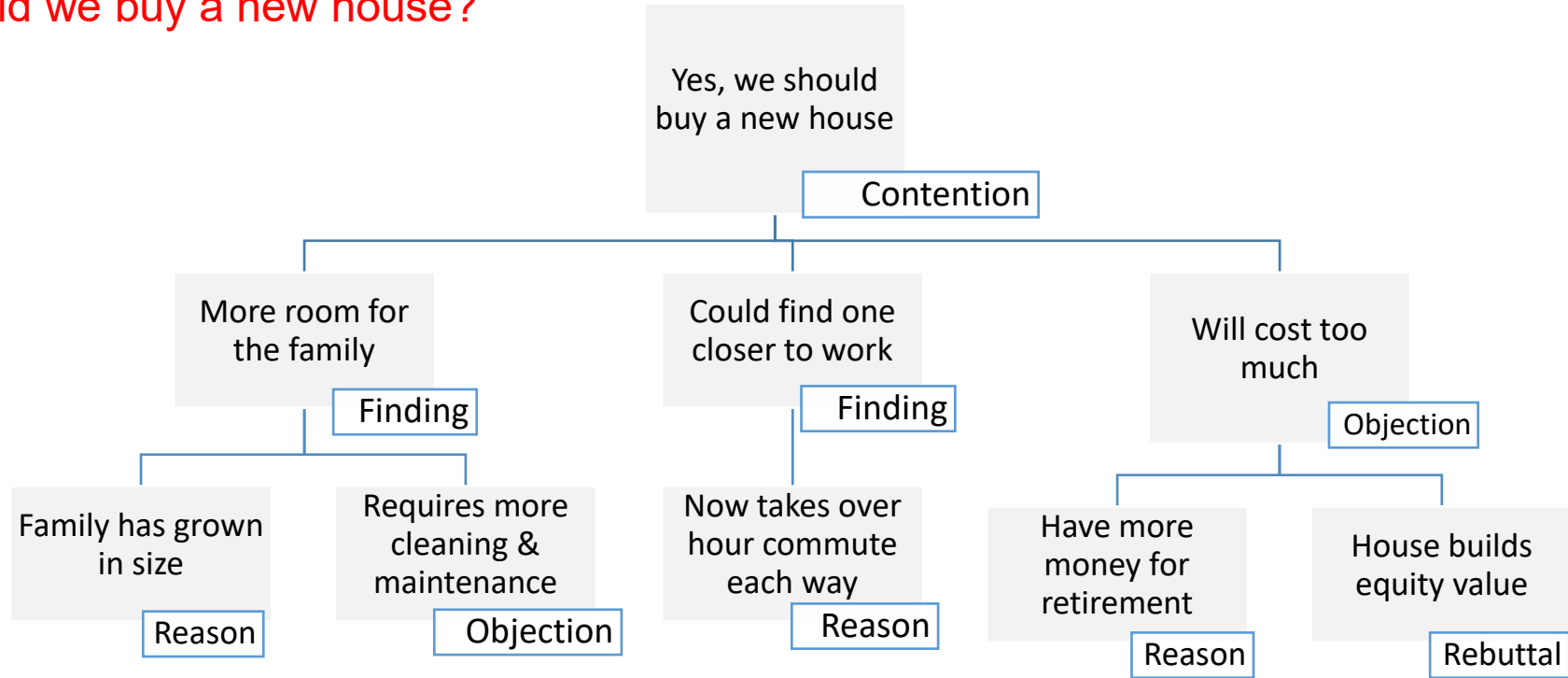


Logical Argumentation (Argument Mapping)

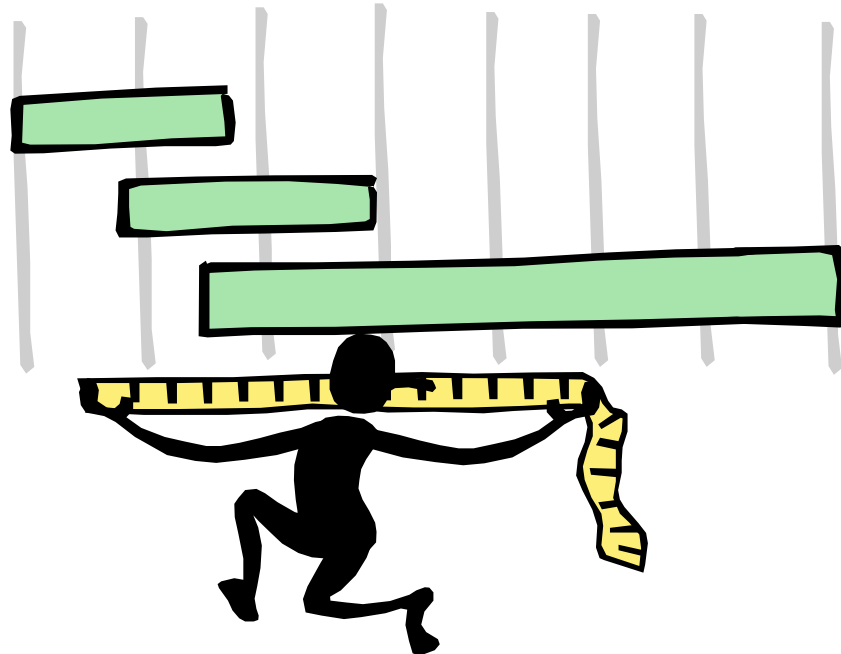


Logical Argumentation Example

Question: Should we buy a new house?



To further evaluate the quality of our critical thinking, we must apply **Self-Checks** and **Intellectual Standards to the Final Written or Verbal Presentation or Report.**



Step 1: Take a Step Back and Self-Check the Critical Thinking Process

- Ask, “Does all this make sense?” Ask “Alexander’s Question,” What information or different assumptions would change the results?
- Consider “Occam’s Razor,” offering the simplest solution is usually the best.
- Then conduct two quality checks:
 1. A Structured Self-Critique
 2. An Intellectual Standards Check

Step 2: Structured Self-Critique

- Ask, “What if my contention (findings, etc.) turns out to be wrong?”
- Check your worksheets on each element of thought and make sure it was considered properly in the analysis.
- Common analytic errors:
 - Did I ignore contrary information (data, evidence, etc.)?
 - What should absence of information tell me?
 - Were key assumptions and beliefs reliable?
 - How reliable was my key evidence?
 - Did I avoid common analytic pitfalls (used analogy, intuition, etc.)?

Step 3: Use Intellectual Standards to Assess Final Report

- **Clarity** – Could you give example(s)?
- **Accuracy** – How could we verify facts?
- **Precision** – Could you give more details?
- **Relevance** – How does analysis relate to the problem?



Intellectual Standards to Assess Final Report (continued)

- Depth – What are the complexities of this problem?
- Breadth – Do we need to consider other points of view?
- Logic – Does this all make sense together?
- Significance – Which of the facts/problems is the most important?
- Fairness – Do I have a vested interest in the issue?

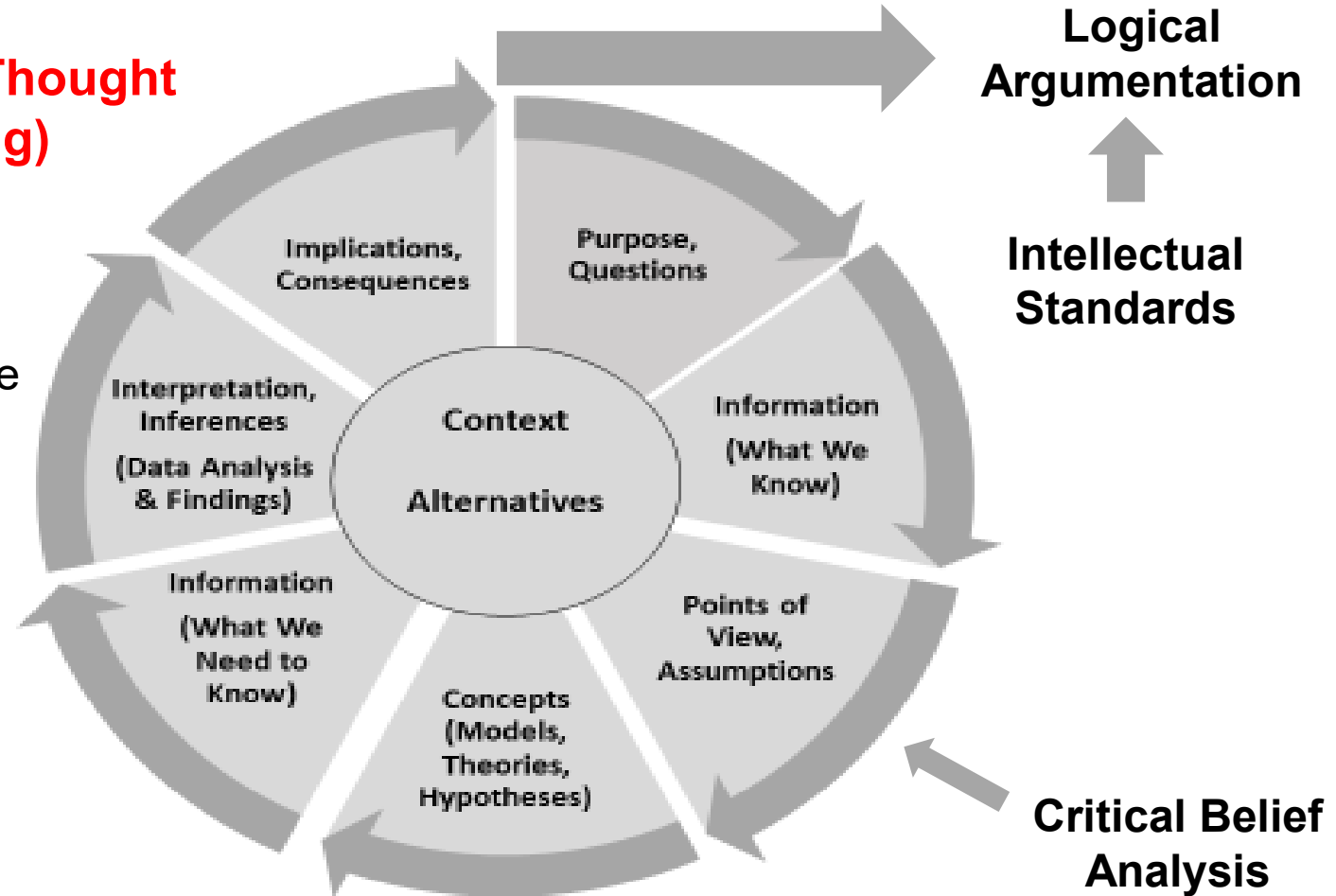


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Final Words of Wisdom

To become proficient at critical thinking you should use the framework in all your significant thought processes, in both your personal and professional lives.



Please give our classroom host and
assistant a big hand!

I hope you enjoyed the course!

