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Critical Thinking for Underwriters

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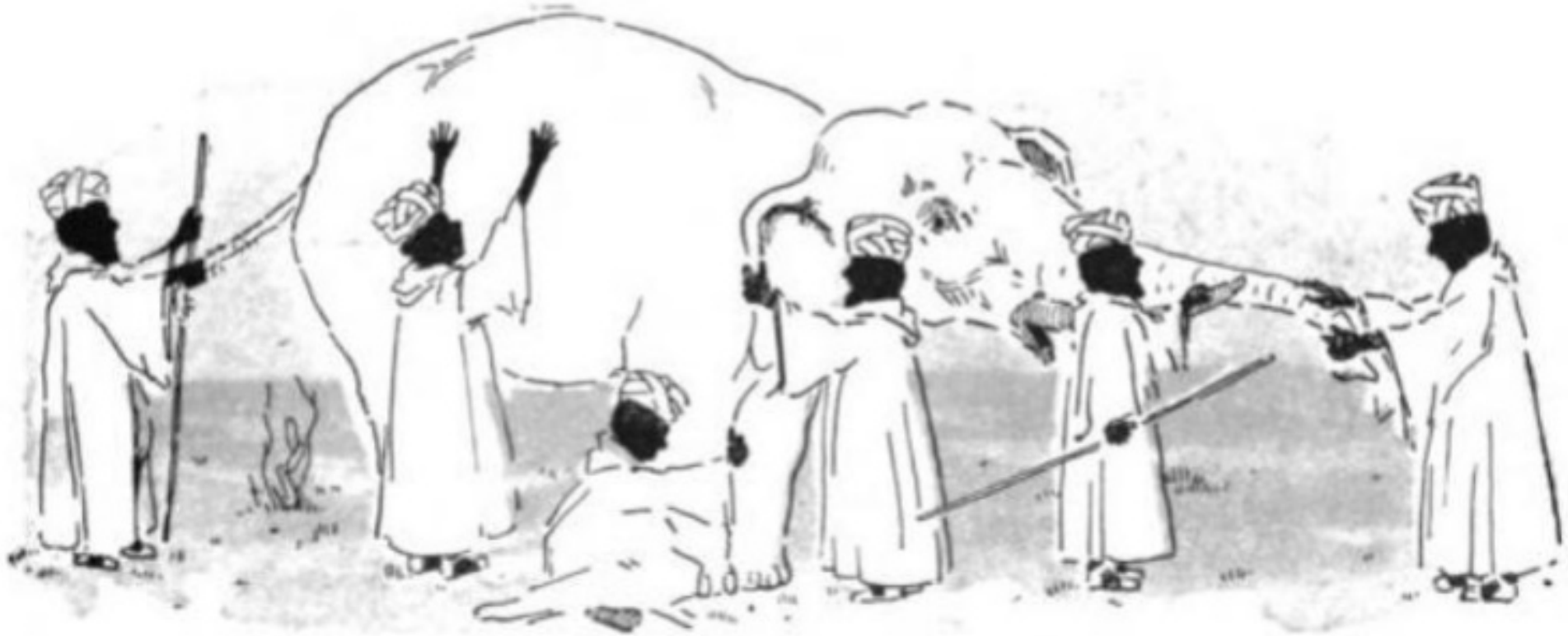
Before We Begin, What Do You Know?

It's not what we don't know that hurts us.

It's what we know that isn't so.

- *Mark Twain*

The Blind Men and the Elephant



By Illustrator unknown - From Charles Maurice Stebbins & Mary H. Coolidge, Golden Treasury Readers: Primer, American Book Co. (New York), p. 89., Public Domain, https://commons.wikimedia.org/w/index.php?curid=4581171

Today's Discussion

Thinking about Critical Thinking

- **Defining the Critical Thinking "Problem"**
- **Building Structure, Using Tools**
- **The Role of Knowledge, Logic, and Experience**
- **Overcoming Roadblocks and Obstacles**
- **Communication**
- **The Need for Post Decision Analysis**
- **Underwriting Critical Thinking Specifics**

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Defining the Problem

What is Critical Thinking?

The objective analysis and evaluation of an issue in order to form a judgment

Testing Critical Thinking: The Watson-Glaser ™

Why is it important in our profession and our personal lives?

Can Critical Thinking Be Taught?

Is critical thinking a learned skill?

- **It might be best to describe critical thinking as a methodology not a skill**
- **Even well trained and experienced critical thinkers can fail in simple critical thinking exercises**
- **Focus on the methods and tools used, eventually making critical thinking part of the underwriters' approach to every case**
- **In underwriting we often teach by example without using a formal "Course on Critical Thinking"**

Critical Thinking and Decision Analysis

- **These two disciplines are related**
  - **Decision analysis divides a subject into essential parts or principles**
  - **Critical thinking provides evaluation and judgment through careful assessment**
- **Critical Thinking in Underwriting must also focus on the financial repercussions of our decisions.**
- **Neither critical thinking nor decision analysis guarantee a best, or even a good decision, but do provide for a consistent approach to decision making and a means to assess outcomes.**
- **Both processes can add value to decisions in work and home situations**

Starting an Argument, Without Picking a Fight

Knowing when an argument exists – define the argument

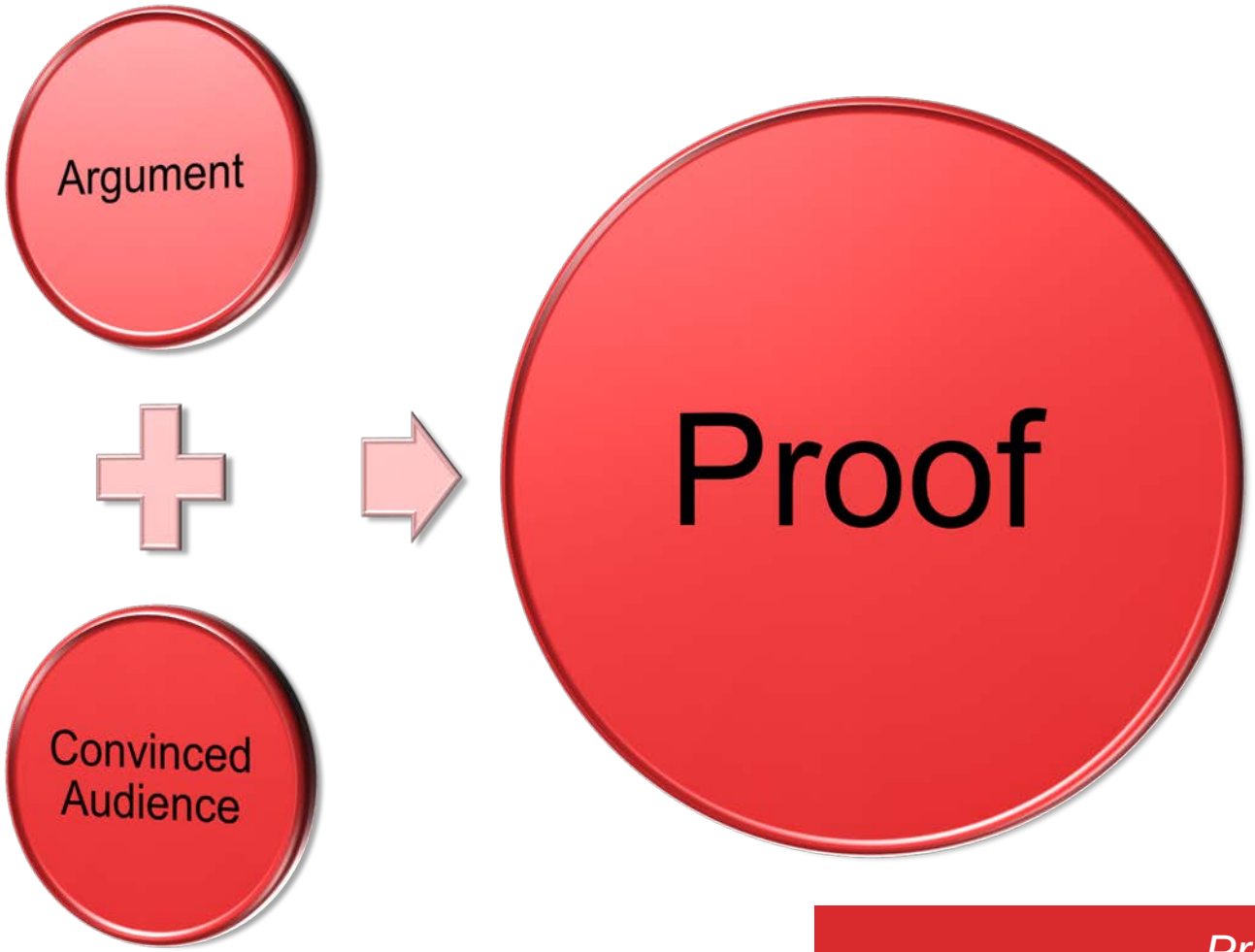
Claims	Issues	Arguments
A declarative statement, a proposition, hypothesis, thesis, or assertion. A premise	Dealing with uncertainty regarding a claim	A conclusion supported by claims and underlying premise(s)

What about proof?

Be certain to credit here!!!

Proof

"Proof" is not always logical or factual if it's accepted



Proof does not = Truth
We aren't talking about scientific proof

Proof should be held to it's scientific meaning

- **In an underwriting case the information should be:**
  - **Verifiable**
  - **Subject to corroboration**
- **If in doubt of the facts, get confirmation**

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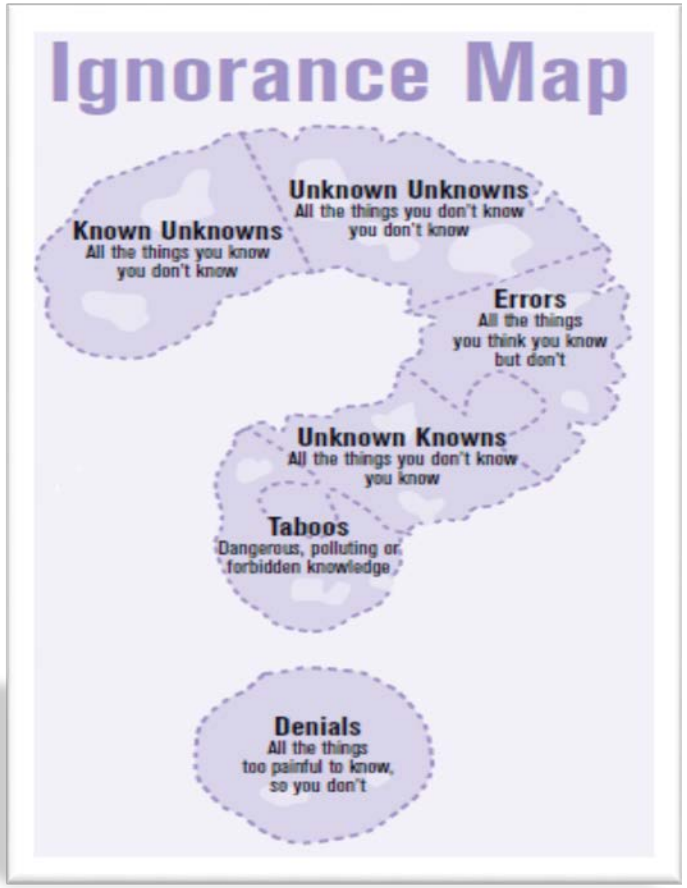
Critical Thinking - Ignorance Is No Excuse

Ignorance Map

Intellectual Humility: We don't know…

- Known unknowns
  - All the things you know you don't know.
- Unknown unknowns
  - All the things you don't know you don't know
- Errors
  - All the things you think you know but don't
- Unknown knowns
  - All the things you don't know you know
- Taboos
  - Dangerous, polluting or forbidden knowledge
- Denials
  - All the things too painful to know, so you don't



Drawn from the University of Arizona - Curriculum on Medical Ignorance (CMI) developed the *Q-Cubed; Questions, questioning and questioners* project. This is their "Ignorance Map"

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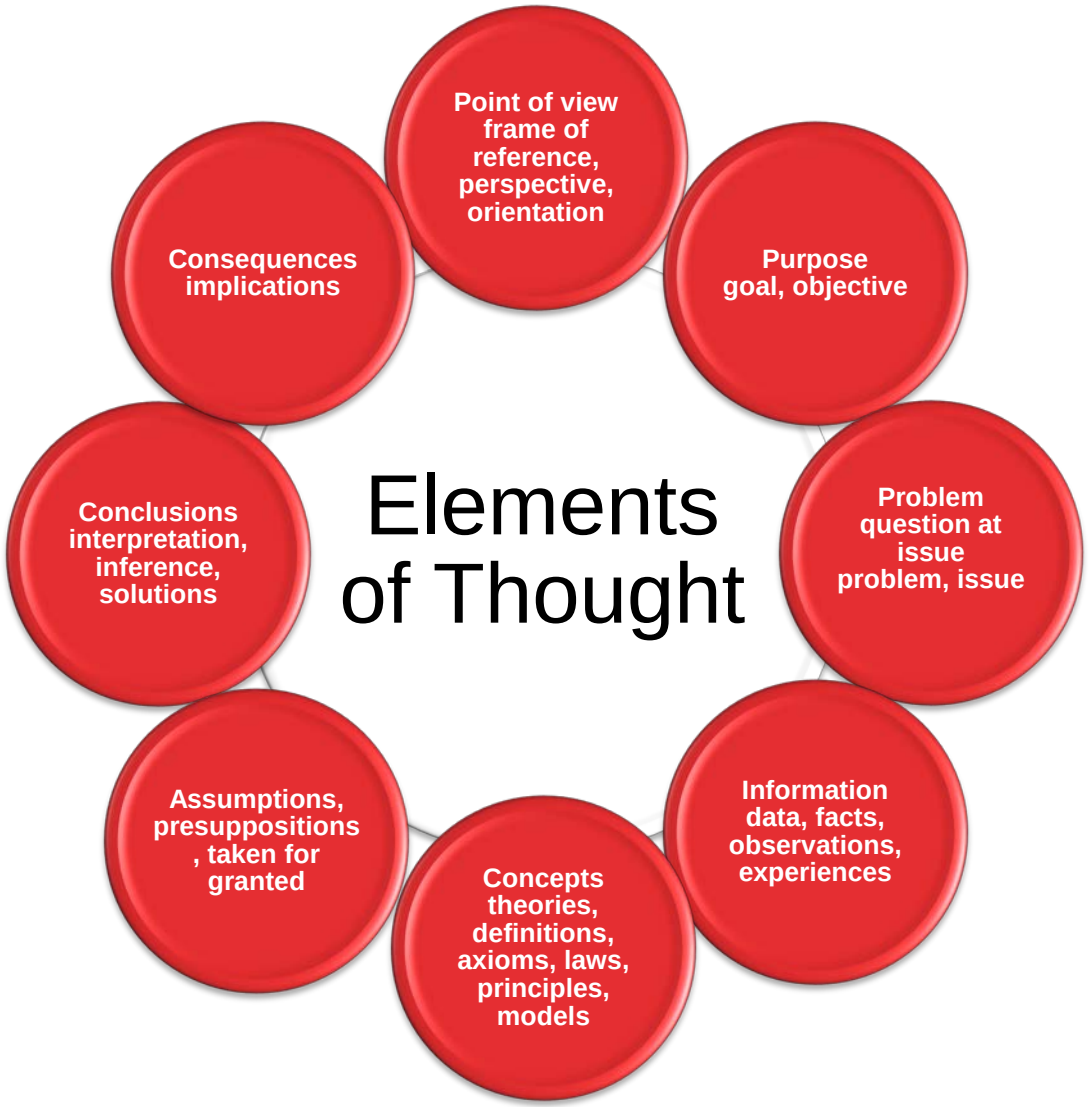
Build Structure, Use Tools, Understand Logical Arguments

“Everyone is entitled to his own opinion, but not his own facts.”
~ Daniel Patrick Moynihan

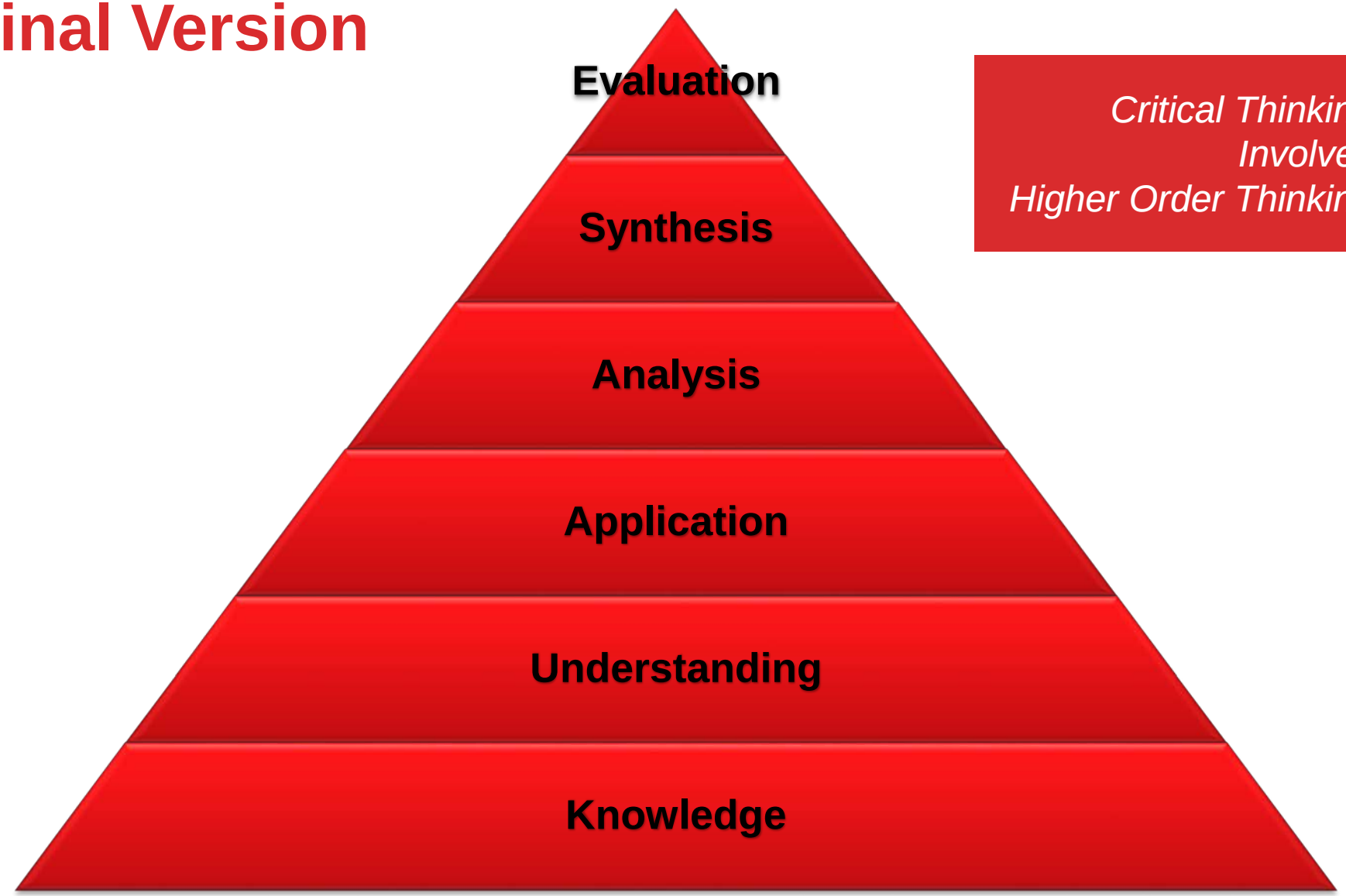
Consider the Elements of Thought



- Point of View
- Purpose
- Problem
- Information
- Concepts
- Assumptions
- Conclusions
- Consequences

Source: Derived and adapted from Richard Paul and Linda Elder, *The Miniature Guide to Critical Thinking Concepts and Tools,* 4th Edition (Dillon Beach, CA: The Foundation for Critical Thinking, 2004).

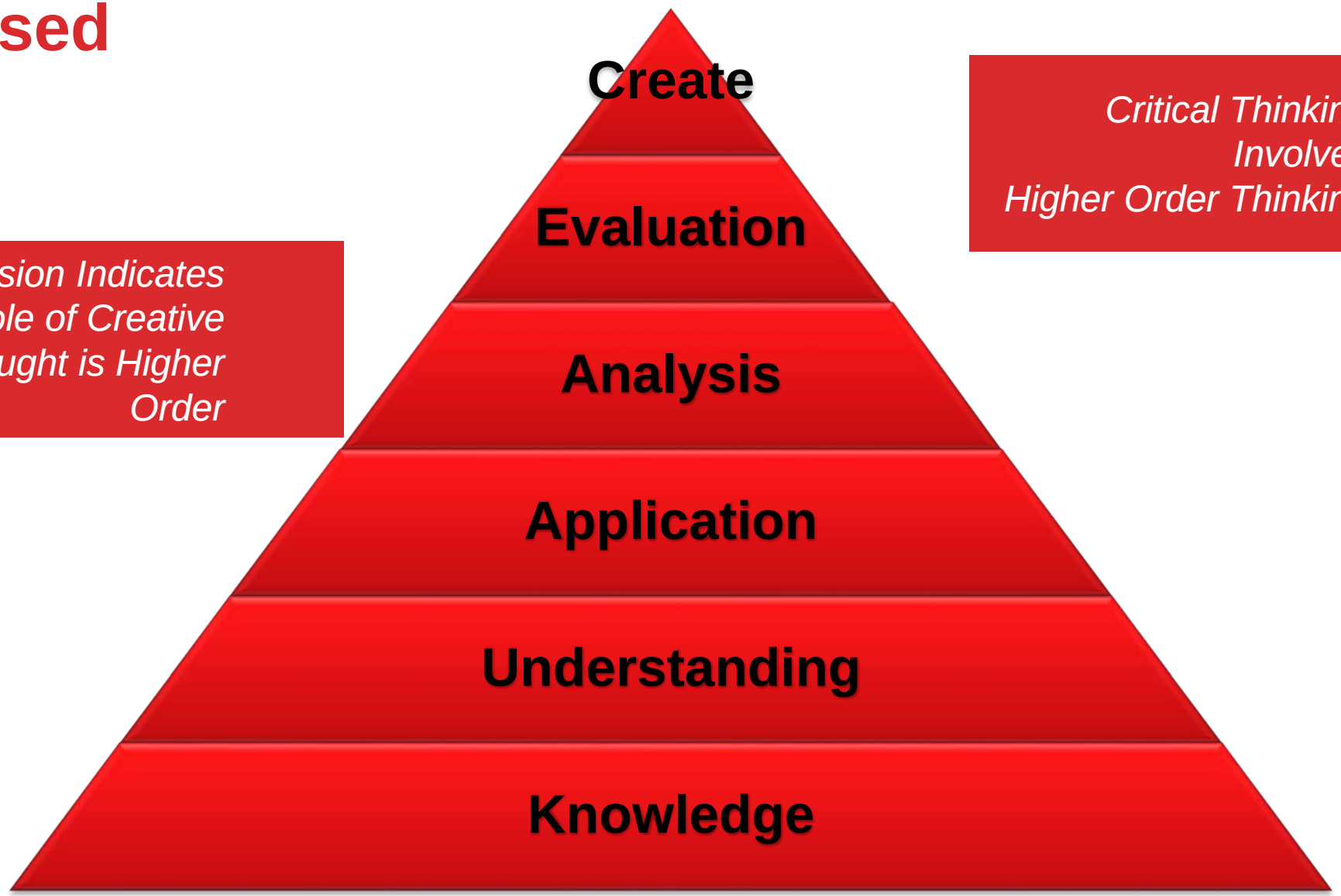
Bloom's Taxonomy Original Version



Critical Thinking Involves Higher Order Thinking

Benjamin Bloom, PhD, 1956

Bloom's Taxonomy Revised



The Revision Indicates the Role of Creative Thought is Higher Order

Critical Thinking Involves Higher Order Thinking

Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Raths, Wittrock, 2000

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14 Techniques for Structured Analysis

The Thinker's Toolkit

Problem restatement

Pros-cons and fixes

Divergent/convergent thinking

Sorting

Chronologies and timelines

Causal flow diagrams

Matrix

Scenario tree

Weighted ranking

Hypothesis testing

Devil's advocacy

Probability tree

Utility tree

Utility matrix

Source: Jones, Morgan D. The Thinker's Toolkit, revised and updated. Three Rivers Press, NY 1998

CT Teaching Tools for Underwriters

- Case File Order
- Problem Plan Solution
- Co-Signs
- Case Studies
- Underwriter Roundtable
- Open Door Referrals
- Regular Education Sessions
- Promote the Academy of Life Underwriting Exams
- Promote Other Industry Credentials
- Enable and Promote Cross Disciplinary Projects
- Encourage Industry Involvement

Problem, Plan, Solution

Elementary Critical Thinking Program for Underwriters

- Problem List
  - Identify factors critical to the case assessment
  - Outstanding requirements
  - Known problems
  - Any outstanding follow ups or tests not completed
  - Unresolved questions, conflicting information
  - Current status, last known status, trend line
- Plan
  - What steps to resolve outstanding issues
  - Requirement reminder
  - Co-signature or medical department review if necessary
  - Retention, auto-pool or facultative?
  - Tentative rating or quote
- Solution
  - Actual quote

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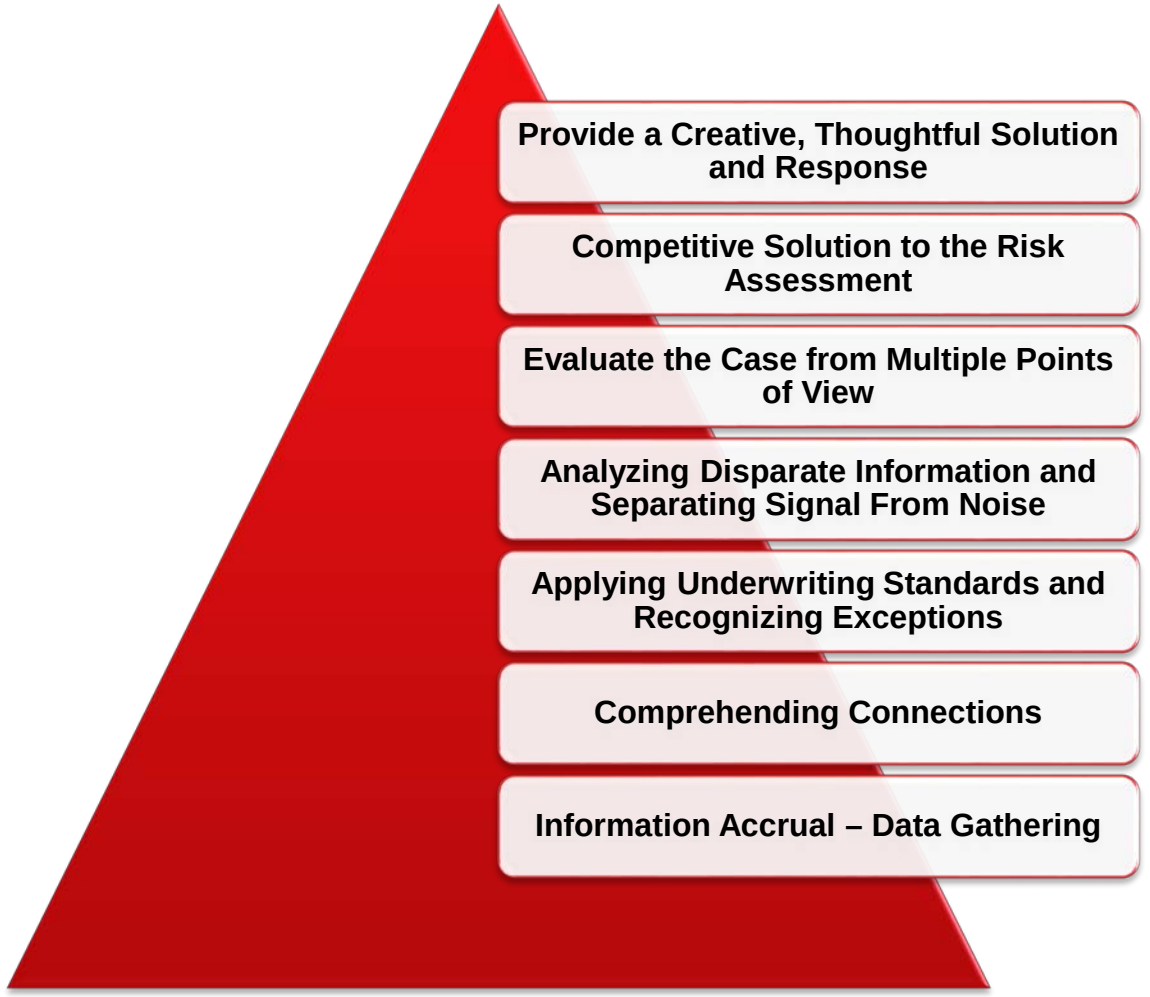
The Role of Knowledge, Logic, and Experience

“Make everything as simple as possible, but no simpler.”
~ Albert Einstein

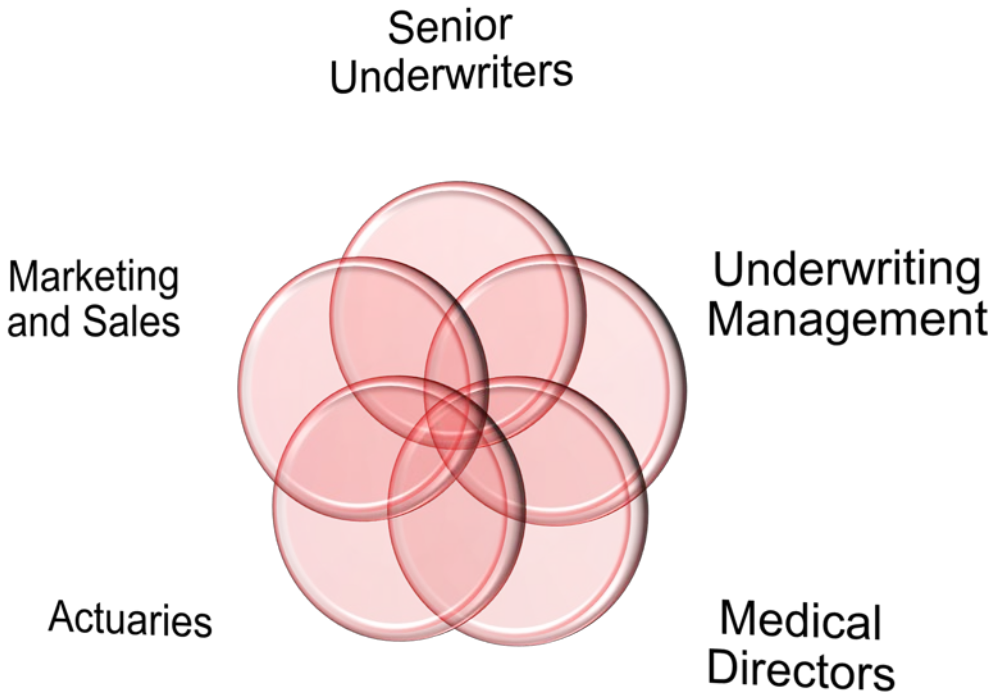
Underwriters' Approach to Problems

Bottom Up Approach, Tip of the Hat to Bloom



Experience and Case Count

There are few tools better to teach critical thinking than simple experience, supplemented with a healthy dose of mentoring



Case reviews and mentoring allow the underwriter to expand their knowledge

They can question biases, claims, issues, and arguments

Underwriter's Roundtable

A powerful but underutilized tool

Moderated by a senior underwriter or chief underwriter

All participants bring a case to discuss, either completed, or in process

All participants are encouraged to analyze and provide input on the risk

Yes, Sometimes Other Knowledge Domains Help

“None of us is as smart as all of us.”*

- Kenneth H Blanchard, The One Minute Manager

Bayes' Theorem and Predictive Value

Predictive Value Table*

	Number with positive test result	Number with negative test result.	Totals
Number with disease	TP	FN	TP+FN
Number without disease	FP	TN	FP+TN

TP = True positives: the number of sick subjects correctly classified by the test.
FP = False positives: the number of subjects free of the disease who are misclassified by the test.
TN = True negatives: the number of subjects free of the disease who are correctly classified by the test.
FN = False negatives: the number of sick subjects misclassified by the test.

Prevalence = Percent of total subjects examined who are diseased.

$$\text{Sensitivity = positivity in disease} = \frac{TP}{TP + FN} \times 100 = \frac{TP}{\text{No. diseased}} \times 100$$

$$\text{Specificity = negativity in health} = \frac{TN}{TN + FP} \times 100 = \frac{TN}{\text{No. without disease}} \times 100$$

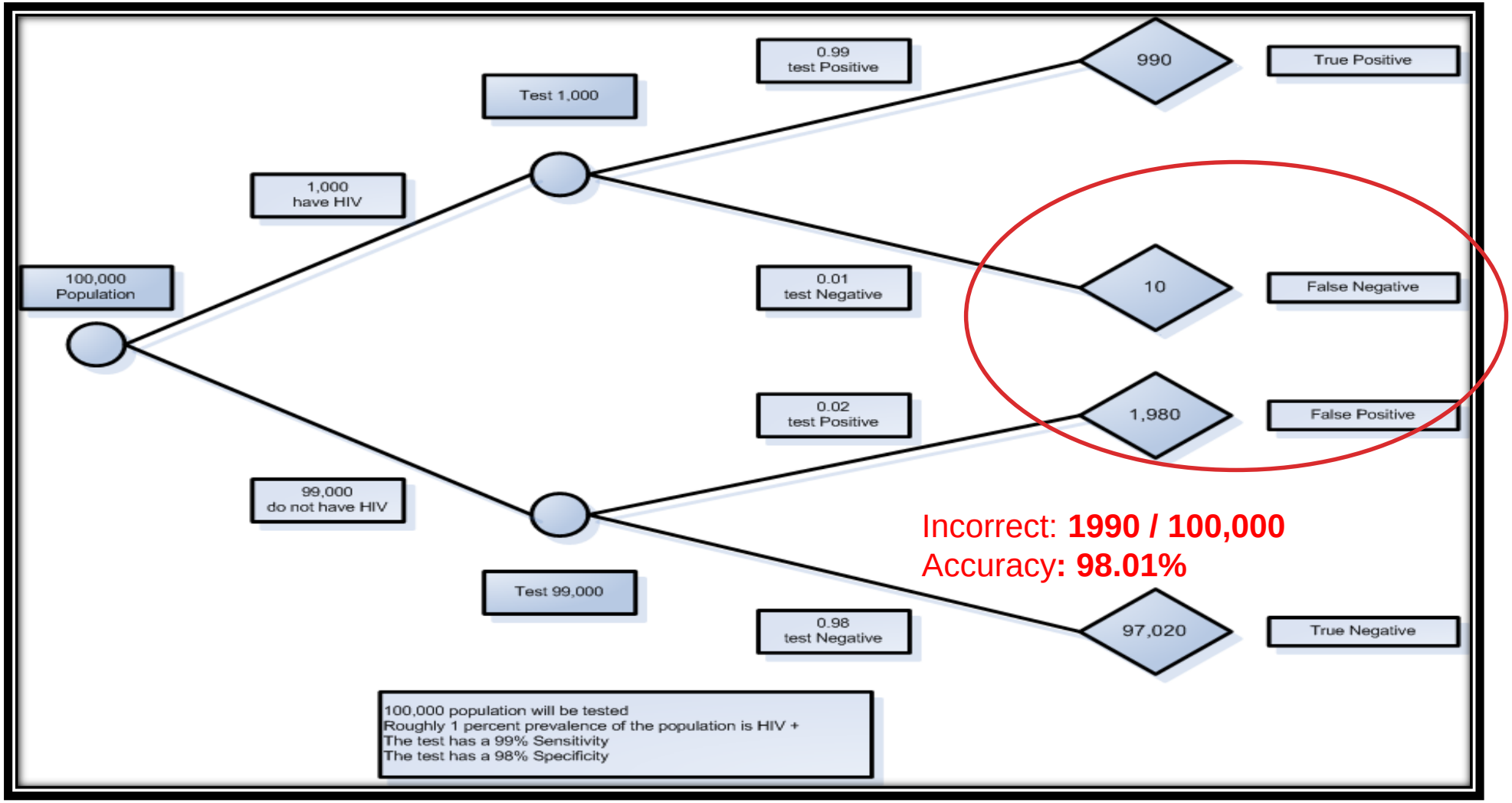
$$\text{Predictive value of a positive test} = \frac{TP}{TP + FP} \times 100 = \frac{TP}{\text{No. positive}} \times 100$$

$$\text{Predictive value of a negative test} = \frac{TN}{TN + FN} \times 100 = \frac{TN}{\text{No. negative}} \times 100$$

* From Galen RS, Gambino SR: Beyond Normality: The Predictive Value and Efficiency of Medical Diagnoses. New York, John Wiley & Sons, Inc. , p 124.

Screening with One Test

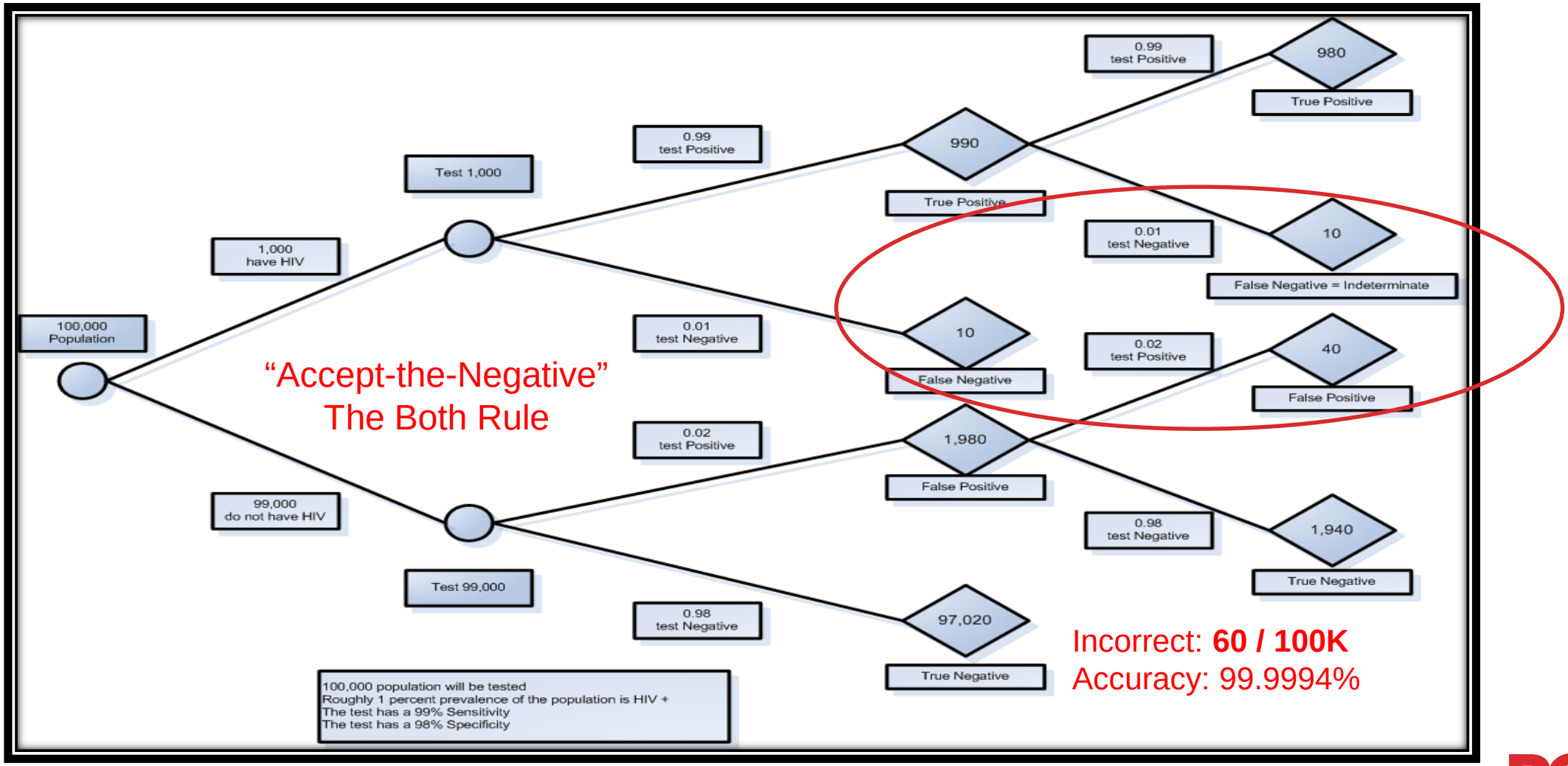
Sensitivity = 99% Specificity =98%



Incorrect: **1990 / 100,000**
Accuracy**: 98.01%**

Screening with Two Tests

Sensitivity = 99% Specificity =98%



Drawn from Rosenthal, Edward C. *The Complete Idiot's Guide to Game Theory*. New York, NY: Alpha, 2011

Overcoming Roadblocks and Challenges

Bias, lack of knowledge, lack of experience, and lack of time or commitment are the enemy

Clouding Objective Analysis: Blocks, Impediments, Obstructions

- Lack of domain knowledge
- Conflicting analytical approaches
- Personality differences
- Emotions
- Debating skills
- Hierarchy of the organization
- Seeking domination and control
- Groupthink
- Analysis paralysis
- Unstated assumptions – bias

Roadblocks and Obstacles

Climbing past the obstacles to critical thinking

- **Bias**
- **Groupthink**
- **Time Pressure**
- **Lack of Knowledge**
- **Asymmetric Information**

http://www.acclaimimages.com/_gallery/_free_images/0420-1007-2016-3956_soldiers_navigating_an_obstacle_course_m.jpg

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Recognize Faulty Arguments

And how to overcome them reasonably

Are underwriters ever challenged on a decision?

Every challenge or debated decision is a golden opportunity to teach critical thinking techniques.

Do the arguments presented add to previously known facts? Are the facts germane to the problem? Why were they not presented previously?

Do the arguments presented contain **logical fallacies** or **cognitive bias**?

If the challenge arguments are faulty, how do you respond? And if some of the arguments are valid, but some are not, how do you separate them and assess validity?

If the challenge arguments change the decision, consider making it a case study. What critical thinking tools did you use? What did you learn?

Logical Fallacies vs Cognitive Bias

A logical fallacy is an error in logical argument.

A cognitive bias a deficiency or limitation in thinking — a flaw in judgment that arises from errors of memory, social attribution, and miscalculations.

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Practice Identifying Logical Fallacies

Watching political debates is a good place to start

Fallacies

Ad Hominem: An author attacks his opponent instead of his opponent's argument.

Appeal to Authority: The author claims his argument is right because someone famous or powerful supports it.

Hasty Generalization: The proponent uses too small of a sample size to support a broad generalization.

Begging the Question: The author's premise and conclusion say the same thing.

False Dichotomy: Rests on the assumption that there are only two possible solutions, so disproving one solution means that other solution should be utilized. Ignoring other alternative solutions.

More Fallacies

Ad Populum: Attempts to prove an argument as correct simply because many people believe it to be so.

Post Hoc/False Cause: Assumes that correlation equals causation or, in other words, if one event predicts another event it must have also caused the event.

Missing the Point: The premise of the argument supports a specific conclusion but not the one the author draws.

Spotlight Fallacy: The author assumes that the cases that receive the most publicity are the most common cases.

Straw Man: The author puts forth one of his opponent's weaker, less central arguments forward and destroys it, while acting like this argument is the crux of the issue.

The 10 Commandments of Logic

1. Though shall not attack the person's character, but the argument itself. ("Ad hominem")
2. Though shall not misrepresent or exaggerate a person's argument in order to make them easier to attack. ("Straw Man Fallacy")
3. Though shall not use small numbers to represent the whole. ("Hasty Generalization")
4. Though shall not argue thy position by assuming one of its premises is true. ("Begging the Question")
5. Though shall not claim that because something occurred before, but must be the cause. ("Post Hoc/False Cause").
6. Though shall not reduce the argument down to only two possibilities when there is a clear middle ground. ("False Dichotomy")
7. Though shall not argue that because of our ignorance, the claim must be true or false. ("Ad Ignorantiam").
8. Though shall not lay the burden of proof onto him that is questioning the claim. ("Burden of Proof Reversal").
9. Though shall not assume that "this" follows "that", when "it" has no logical connection. ("Non Sequitur").
10. Though shall not claim that because a premise is popular, therefore, it must be true. ("Bandwagon Fallacy").

http://www.relativelyinteresting.com/10-commandments-rational-debate-logical-fallacies-explained/

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Common Biases

Cognitive Bias

A Sample of Cognitive Bias	More Cognitive Bias
Confirmation Bias	Status Quo Bias
Ingroup Bias	Negativity Bias
Gambler’s Fallacy	Bandwagon Effect
Post-Purchase Rationalization	Projection Bias
Negating Probability	Current Moment Bias
Observational Selection Bias	Anchoring Effect

See Appendix

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Communication

“Just the facts ma’am, just the facts”
~ Jack Webb, as Joe Friday
on the television show Dragnet

Clarity, Precision, Brevity

If the thoughts are clear but the message is not, what have we gained?

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The Need for Post-Decision Analysis

"We have to find a way of making the important measurable, instead of making the measurable important."
~ Robert McNamara, past US Secretary of Defense

The Need For Case Studies, Reviews, and Audits

We can learn from our mistakes

We all have strengths and weaknesses, we all make mistakes
– Mistakes are learning opportunities

Don’t ignore rewarding well thought out and creative solutions

“That which is measured improves” *
– Are you measuring the appropriate metrics?

Gifts Differing **
– Recognize different social and learning styles

** Blanchard, Kenneth H. The One Minute Manager. [New York] :Morrow, an imprint of HarperCollinsPublisher, 2003*

** * Myers, Isabel Briggs. Gifts Differing. Palo Alto, CA :Consulting Psychologists Press, 1980.*

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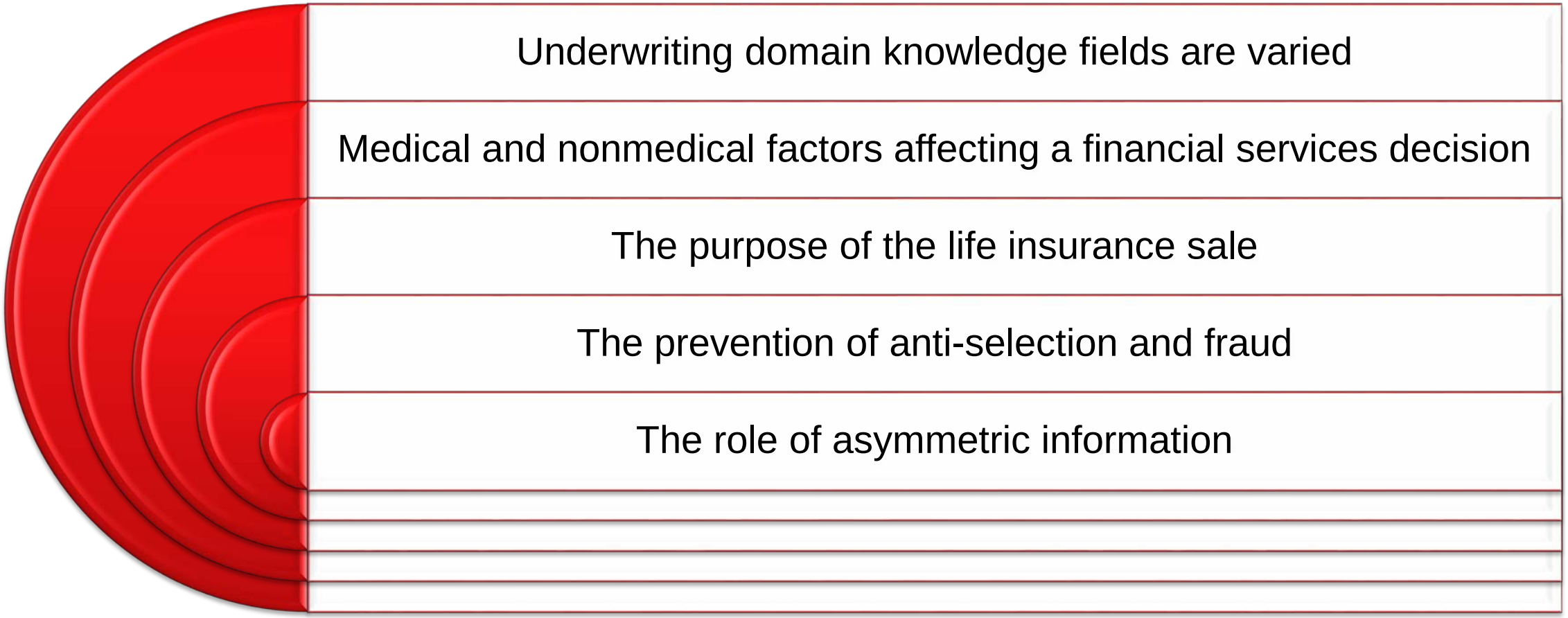
Underwriting Specifics

And a wrap up

Developing a Program

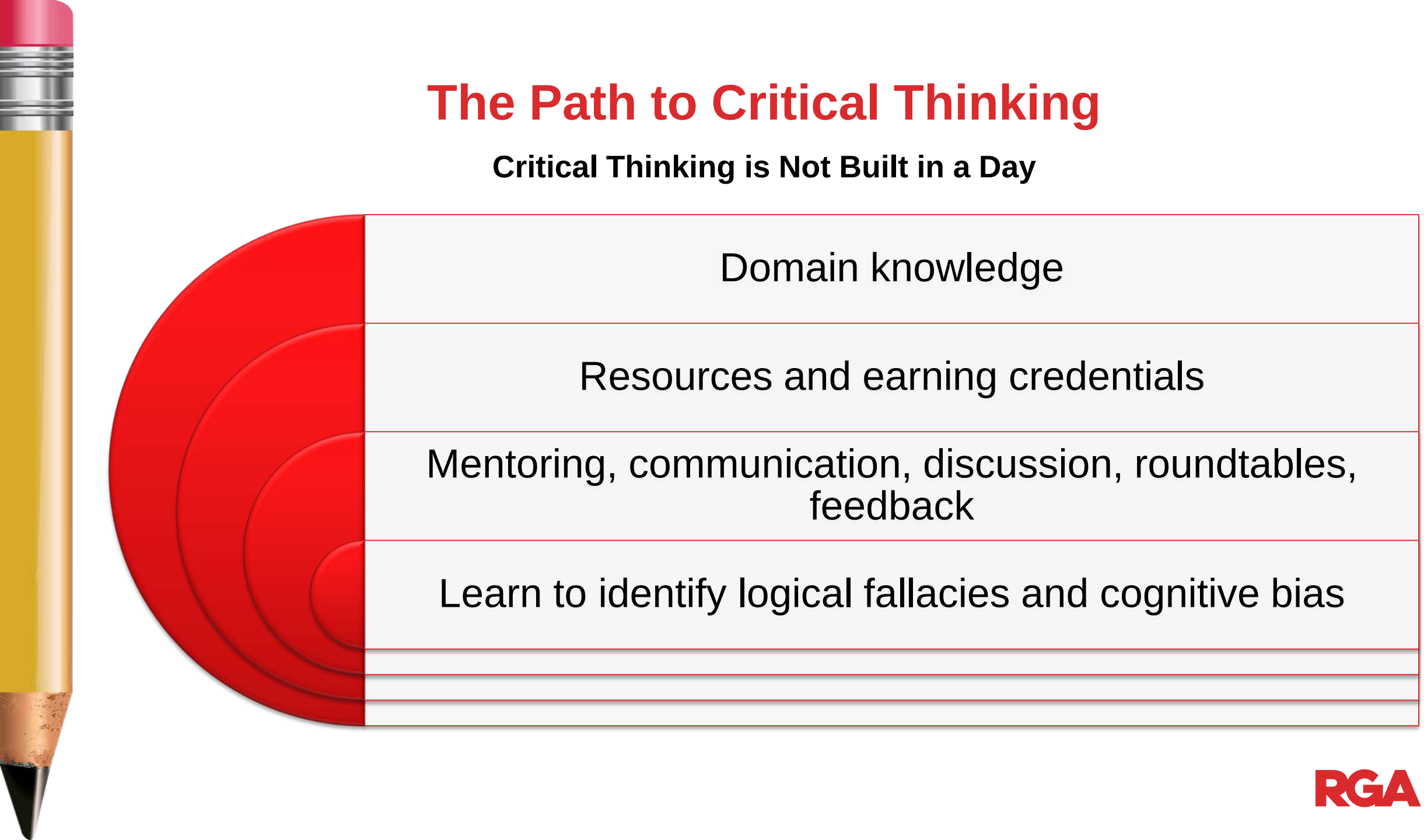
- Start on day one of a training program – and continue everyday thereafter
- Build a library of case studies, with complete underwriter notes. Include cases with outstanding work-ups, and those where outcomes were less than good. Intentionally, include cases that should generate questions.
- Encourage co-signs as a training methodology and development tool, not only as a risk management tool.
- Use underwriter roundtables for less experienced staff, or for particularly difficult scenarios
- Have underwriters openly discuss challenges to decisions with peers and superiors, encourage multiple views

Life Underwriting Requires Context



The Path to Critical Thinking

Critical Thinking is Not Built in a Day



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Wrapping up

- Critical Thinking requires basic domain knowledge, in underwriting across multiple domains
- Critical Thinking can be considered a skill, but requires tools, a methodology, and practice.
- Commitment to post-decision analysis can provide a feedback loop to improve results

Conclusion

“A lot of what has been said in the preceding may have seemed very basic, very fundamental to many sophisticated underwriters. But too frequently in our approach, and in our thinking, the basic becomes submerged. Obviously we *should* always start our inquiries in the beginning, but *sometimes* start them in the middle. Cliché or not, we fail to see the forest for the trees.

So always, always on underwriting any application for life insurance ask yourself, ‘*does it make sense*?’ ”

Source: Will, Charles A. *Does It Make Sense?* The National Underwriter Company, 1973

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Questions?

Appendix and References

Bias Descriptions

Confirmation Bias - The act of referencing only those perspectives that confirm or support our pre-existing views, while choosing to ignore or dismiss opinions contrary to personally held beliefs.

In Group Bias - Overestimation of the abilities and value of our immediate group at the expense of people from other non-affiliated groups.

Gambler's Fallacy – The gambler's fallacy, also known as the Monte Carlo fallacy or the fallacy of the maturity of chances, is the mistaken belief that, if something happens more frequently than normal during some period, it will happen less frequently in the future, or that, if something happens less frequently than normal during some period, it will happen more frequently in the future (presumably as a means of balancing nature).

Positive Expectation Bias - a tendency in prediction to overestimate the probability of good things happening to them (wishful thinking)

Post-Purchase Rationalization - the tendency to persuade oneself through rational argument that a purchase was a good value.

Negating Probability - the tendency to completely disregard probability when making a decision under uncertainty.

Bias Descriptions 2

Observational Selection Bias - when a researcher expects a given result and therefore unconsciously manipulates an experiment or misinterprets data in order to find it (see also subject-expectancy effect).

Status Quo Bias - the tendency for people to like things to stay relatively the same (see also Loss aversion and Endowment effect

Negativity Bias - to give more credibility to bad news

Bandwagon Effect - the tendency to do (or believe) things because many other people do (or believe) the same. Related to groupthink, crowd psychology, herd behavior, and manias.

Projection Bias - assumption that most people think just like us — though there may be no justification for it

Current Moment Bias – Maximizing current pleasure, happiness, with less concern for future outcomes

Anchoring Effect - the tendency to rely too heavily, or "anchor," on a past reference or on one trait or piece of information when making decisions.

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