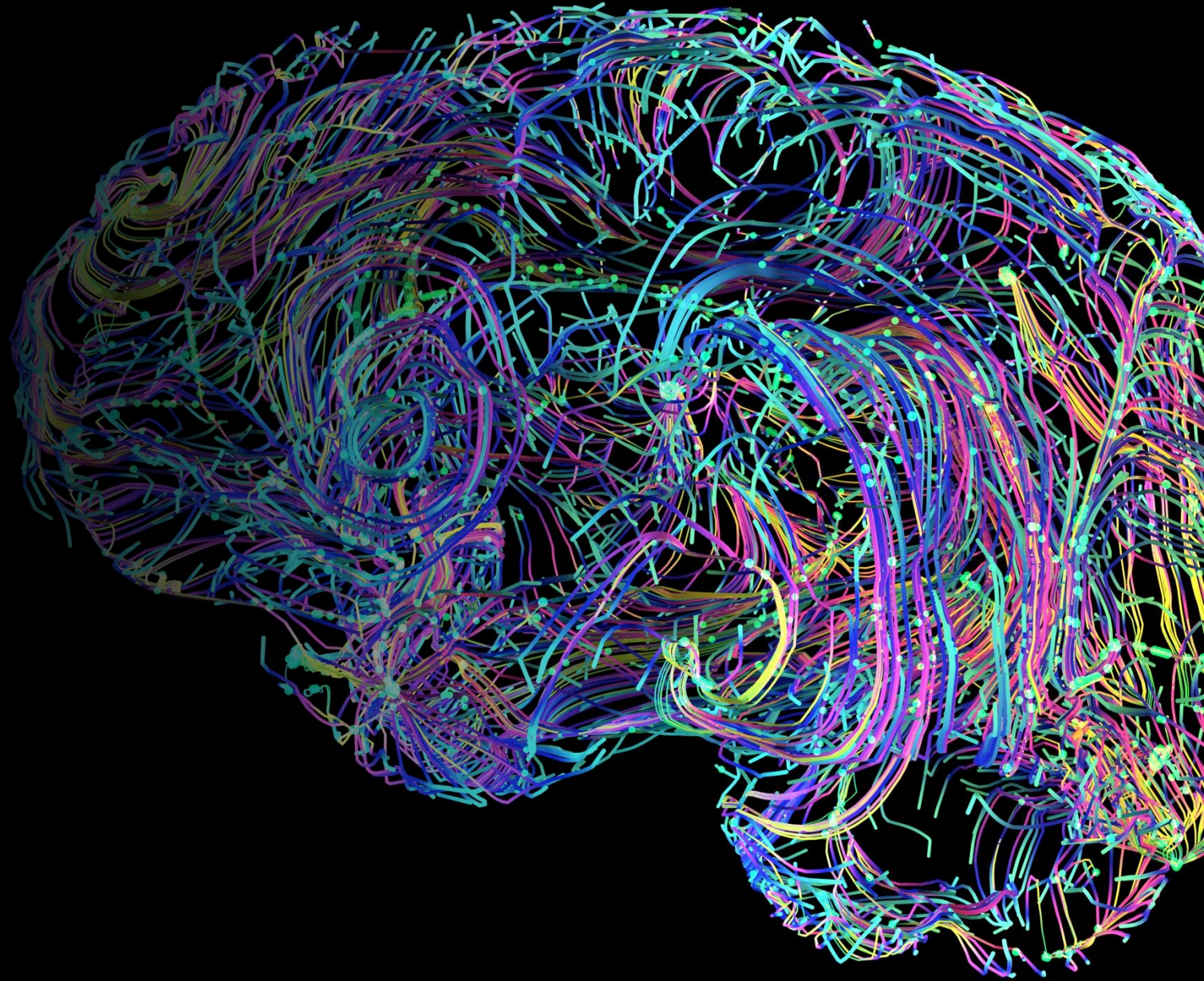


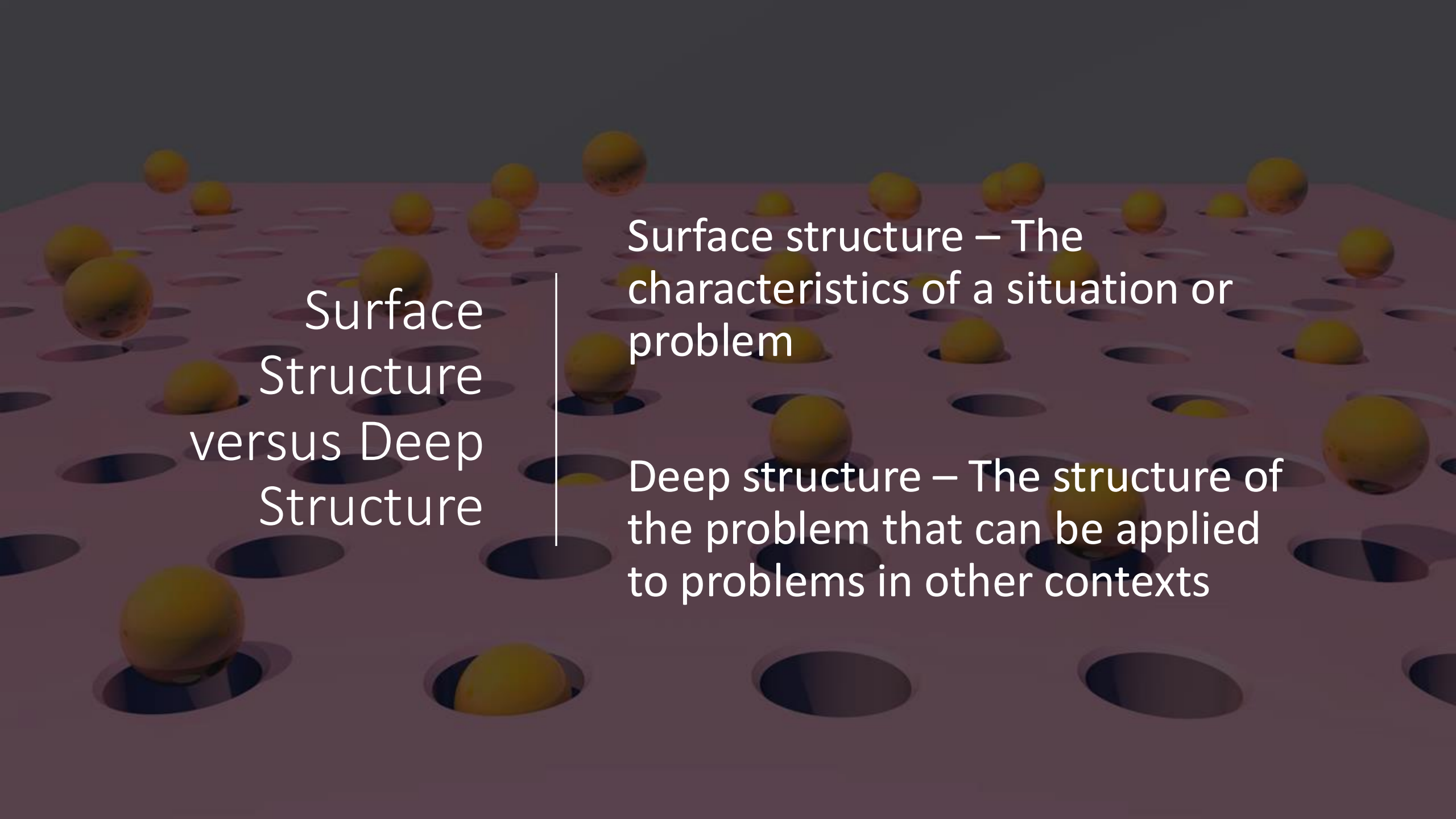
# Critical and Analytical Thinking for CPAs

Toby Groves, Ph.D.

Learn more at [tobygroves.com](http://tobygroves.com)

[toby@tobygroves.com](mailto:toby@tobygroves.com)



The background of the slide is a close-up, slightly angled view of a Go board. The board is a light-colored material with a grid of circular holes. Numerous yellow Go stones are placed in various holes across the board, some in the foreground and others receding into the background, creating a sense of depth. The lighting is soft, highlighting the texture of the board and the smooth surface of the stones.

## Surface Structure versus Deep Structure

Surface structure – The characteristics of a situation or problem

Deep structure – The structure of the problem that can be applied to problems in other contexts

CARD #

1

2

3

4

A

K

8

5



Passive Approach

=

Passive absorption

## Intentional and Engaged Thinking

### Passive Versus Active Thinking

We are surprisingly Mindless-We are unaware of how much we are missing!

Active Thinking

=

Engaging with each thought

# In Your Own Words

---

- Active versus passive – Writing requires active engagement. Forces you to think more deeply and process information in a way that makes sense to you.
- As you generate your own words, your brain is also monitoring and evaluating the accuracy and coherence of your output.
- Integrates several different cognitive functions – more neural connections and markers. Spurs neurochemicals that support learning and memory.
  - Language
  - Memory
  - Attention
  - Executive function

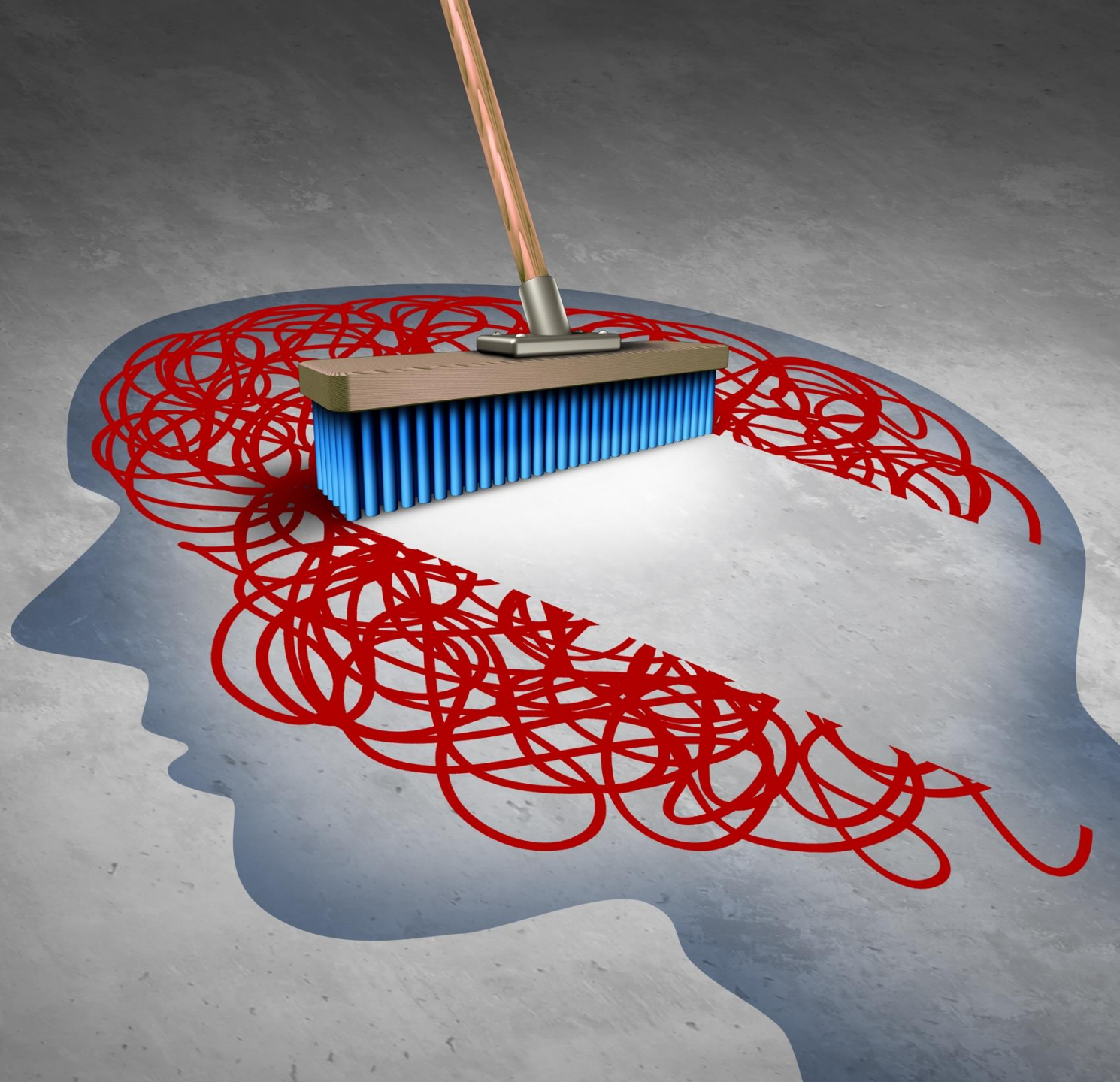






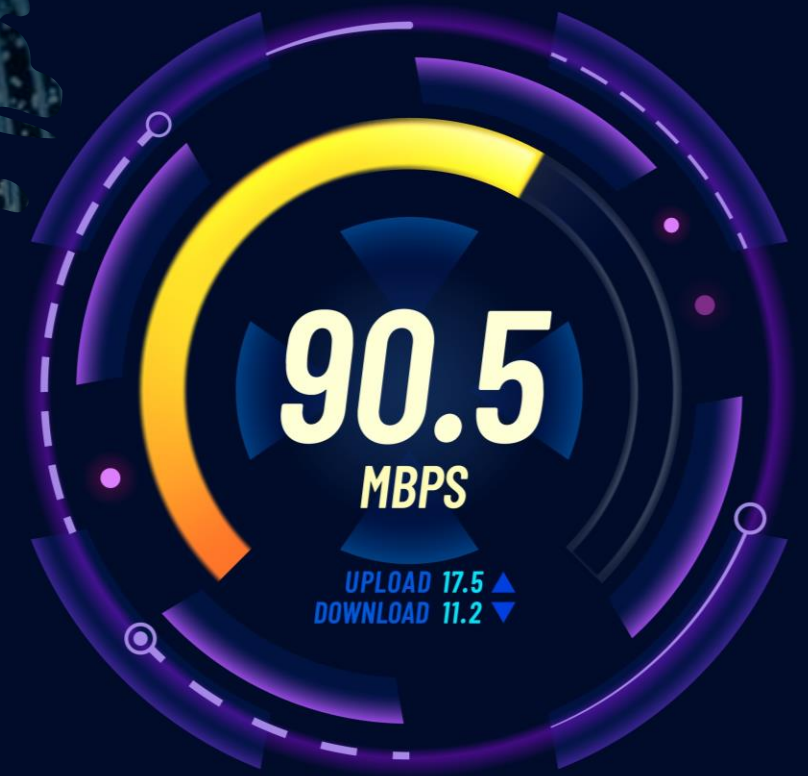


# Declutter Your Thinking



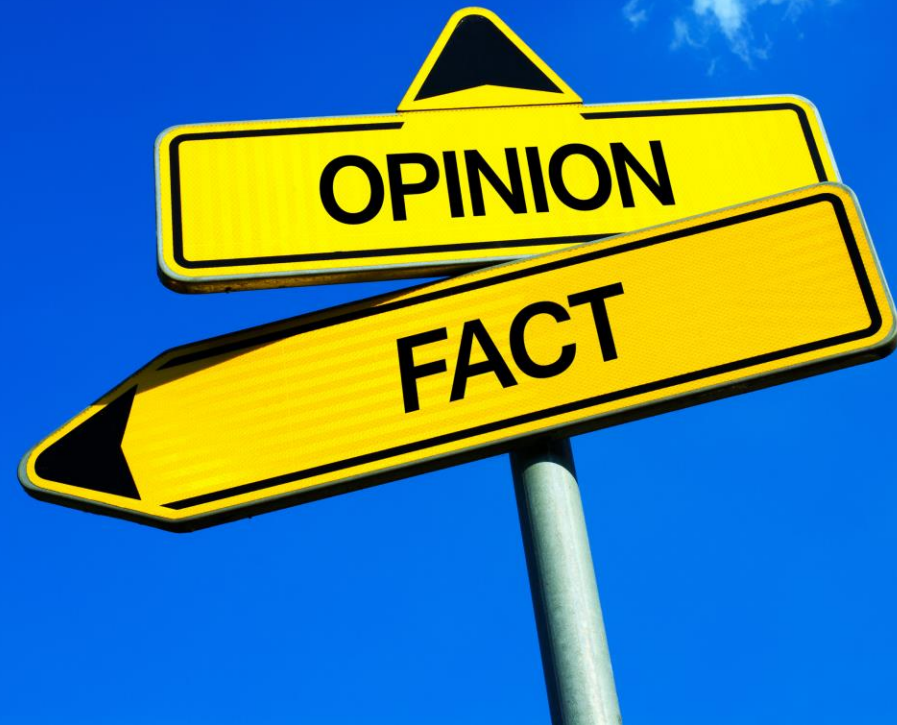
# What reduces bandwidth?

- Stress
- Distractions
- Inner chatter
- Lack of sleep
- Multitasking





Epistemology



## Two Types of Information

---

Diagnostic- relevant to the evaluation that is being made

---

Non-diagnostic - irrelevant or inconsequential in regard to the evaluation being made



# Skepticism

**Type I Error**  
**False Positive**

**Type II Error**  
**False Negative**



Adjust your “Signal to Noise” ratio

Type 1 errors  
False Positive

Type 2 errors  
False Negative







# Daycare Center Experiment

Copyright Toby Groves, Ph.D. All Rights Reserved





# Daycare Center Experiment

Copyright Toby Groves, Ph.D. All Rights Reserved







## Consider Soft Goals

- They are most important in many cases
  - Reputation
  - Motivation
- These things can't be measured using traditional metrics
- Unintended consequences
- Long term versus short term outcomes
- Picture that your decision has played out and see how you feel about it

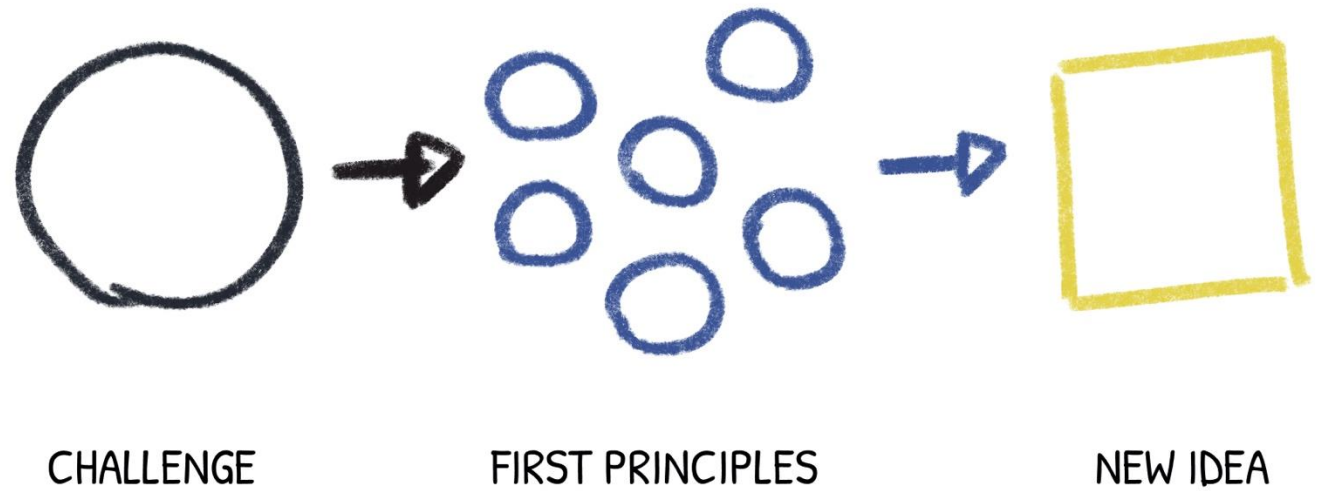
# Strategies to Spur Better Critical Thinking

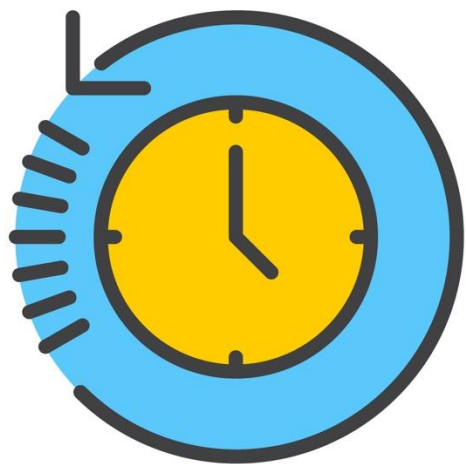
---





# First Principles Thinking





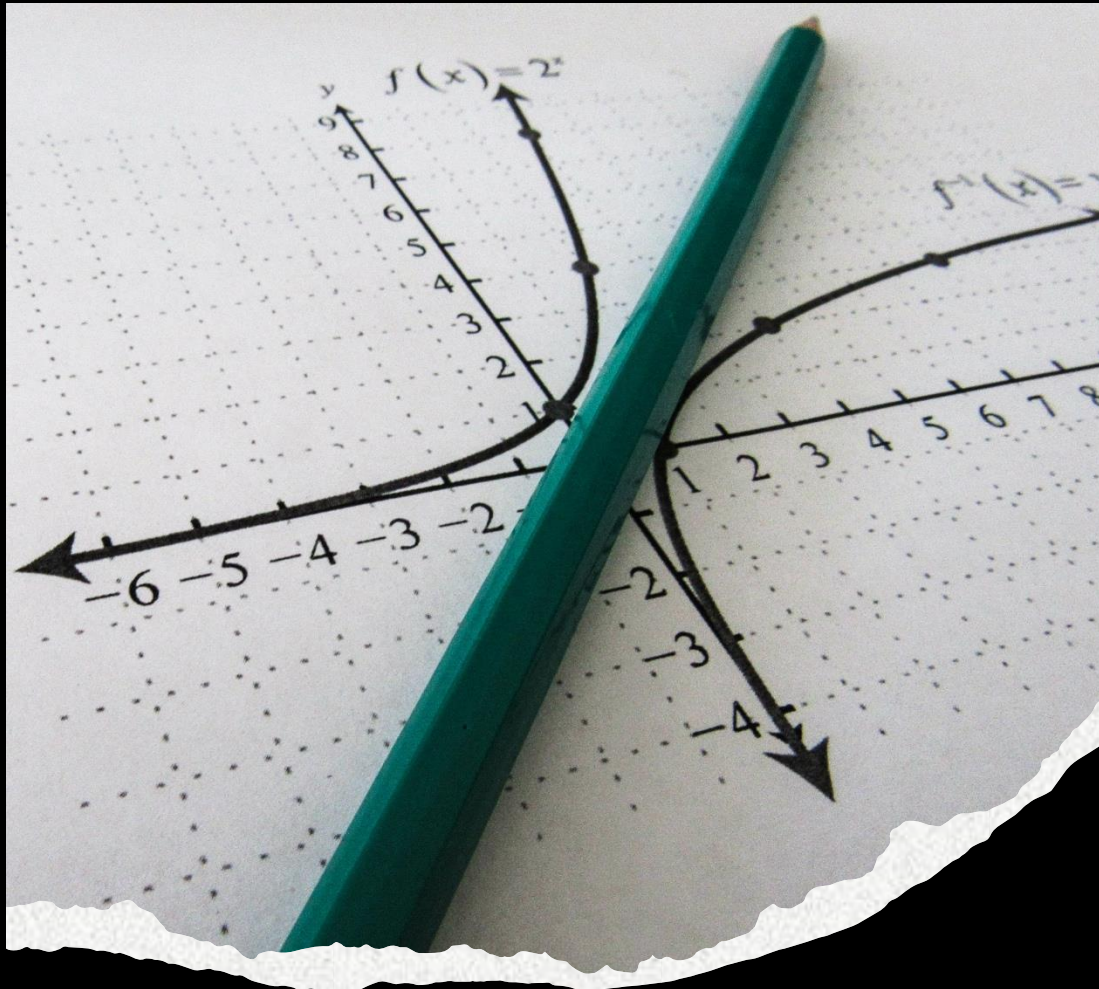
# Retrograde Analysis

Some problems are easier to solve when you look backwards.



Retrograde  
Analysis

After reading this  
sentence you will  
realize that the  
the brain doesn't  
recognize the  
second 'the.'



# Inversion Technique

Define your problem

Invert the problem (not the same as looking backwards in time which is retrograde analysis or project premortem) to clarify the opposite of what you want to happen

Examine ways to achieve the inverted goals

# Intellectual Curiosity and the Beginners Mindset

---







Ask yourself  
good  
questions



# Critical and Analytical Thinking for CPAs

Toby Groves, Ph.D.

Learn more at [tobygroves.com](http://tobygroves.com)

[toby@tobygroves.com](mailto:toby@tobygroves.com)

