MAKING SENSE OF THE SUCCESSES AND FAILURES OF HUMAN MEMORY — NOV 7 2019

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SLEEP	YARN	PINK	THREAD
HAMMER	PILLOW	MATRESS	TIRED
CHAIR	THIMBLE	SHOT	BLANKET
TETANUS	CACTUS	SHEET	CANDLE
STITCHES	DREAM	NIGHT	PIERCE

I Hope to Deepen Your Understanding of …

Memory

Decision Making

The Mind

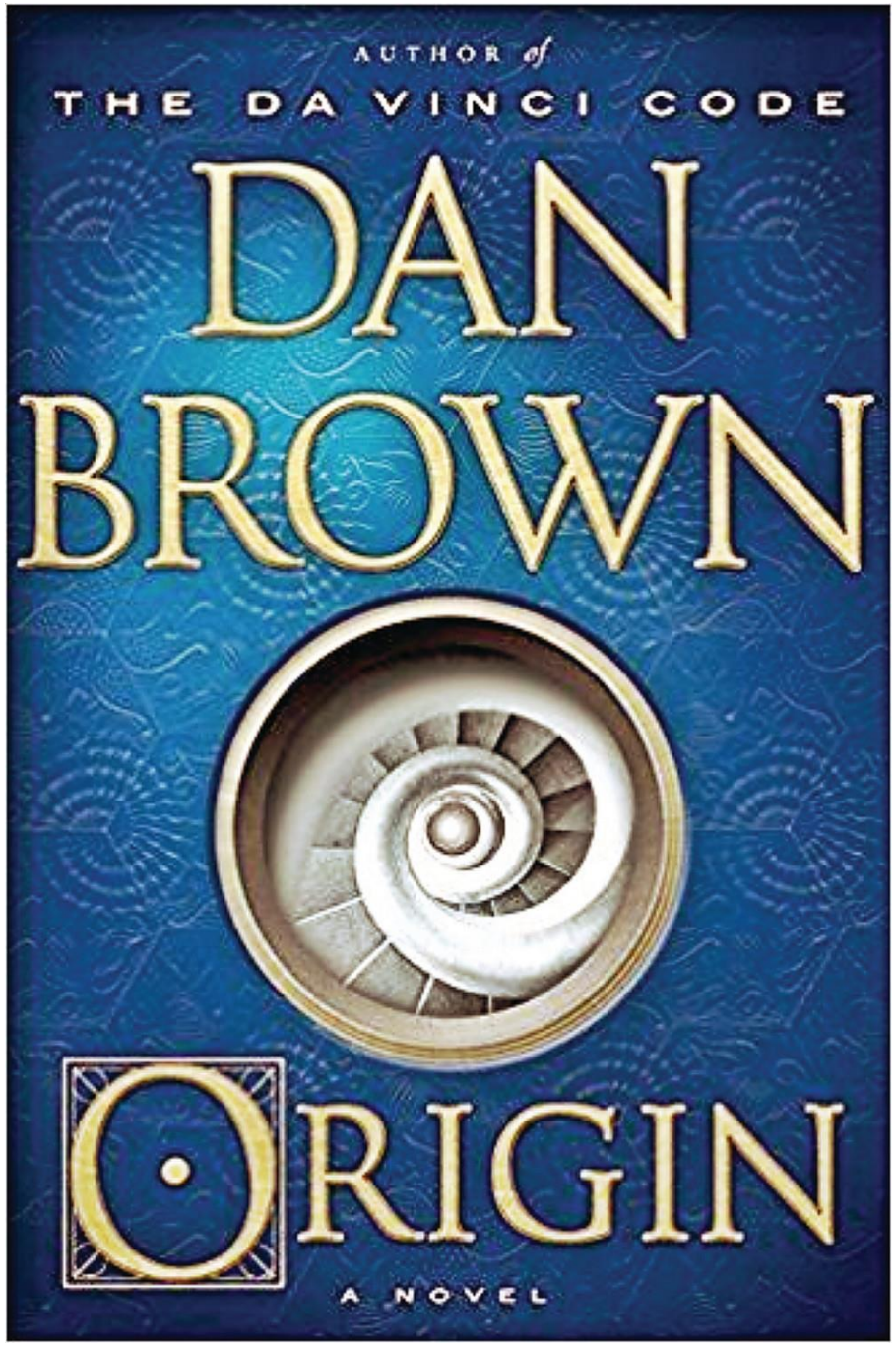
Some take home points in advance …

- The mind wants things to make sense, and it relies heavily on memory to help!
- The mind is inherently decisive
- Memory sometimes helps the sense-making process, but sometimes it is the target of it … it plays both roles
- The process memory uses to "make sense" is the same as is used for decision making, and is prone to the same issues. So, how can you ensure your decisions are sound?

1

Making Sense

Things “make sense” to the mind when they match up with previous mental experiences … and if they don’t completely match, and they never do, the brain has ways of enhancing the match



”Like an organic computer,” Edmond continued, “your brain has an operating system – a set of rules that organizes and defines all of the chaotic input that flows in all day long – language, a catchy tune, a siren, the taste of chocolate. As you can imagine the flow of information is frenetically diverse and relentless, and your brain must make sense of it all. In fact, it is the very programming of your brain that defines your sense of reality”

”If we could look at the human mind and read its operating system it would look something like this.”

DESPISE CHAOS
CREATE ORDER

Examples from Language

Spelling Example:
Can you read the sentence below?

It deosn't mtaetr in waht odrer the letetrs in a wrod are. The scentenc is stlil reedabal.

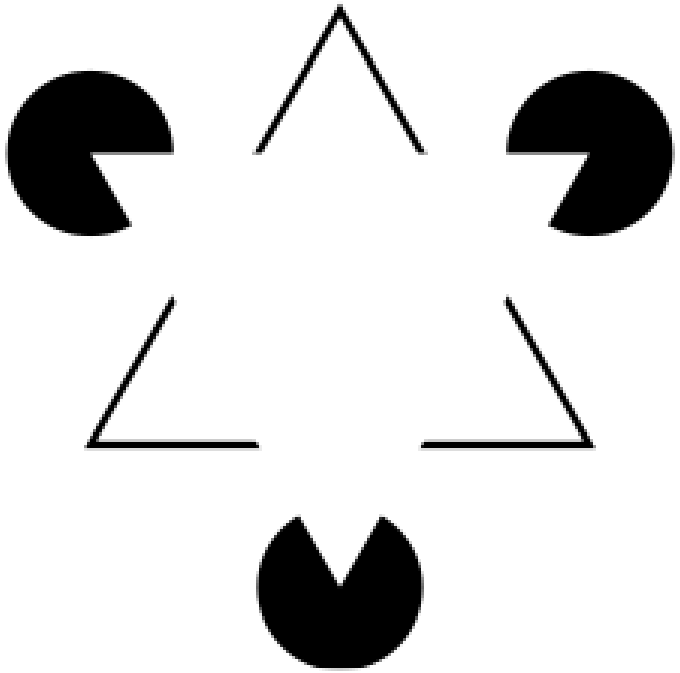
Turning Point Query #1

I just showed you a triangle with a phrase written on it. How many words were in that phrase?

1. Five
2. Six
3. Seven
4. Eight
5. Nine

Examples from Perception

The Role of Past Experience



Turning Point Query #2

I just showed you an image. What did you see?

1. Two triangles arranged on 3 circles
2. One triangle and some “>” signs
3. One triangle and three pacman things
4. Two triangles and three pacman things
5. Three “>” signs and three pacman things

MAKING SENSE, the bigger picture

It assumes information or ignores information in ways that allow it to "make sense"

It relies heavily on past experiences to decide what "makes sense"

2

The Mind is not a Fence Sitter

Often decisions must be made quickly, and the mind has processes that prevent it from getting stuck in decisions too long

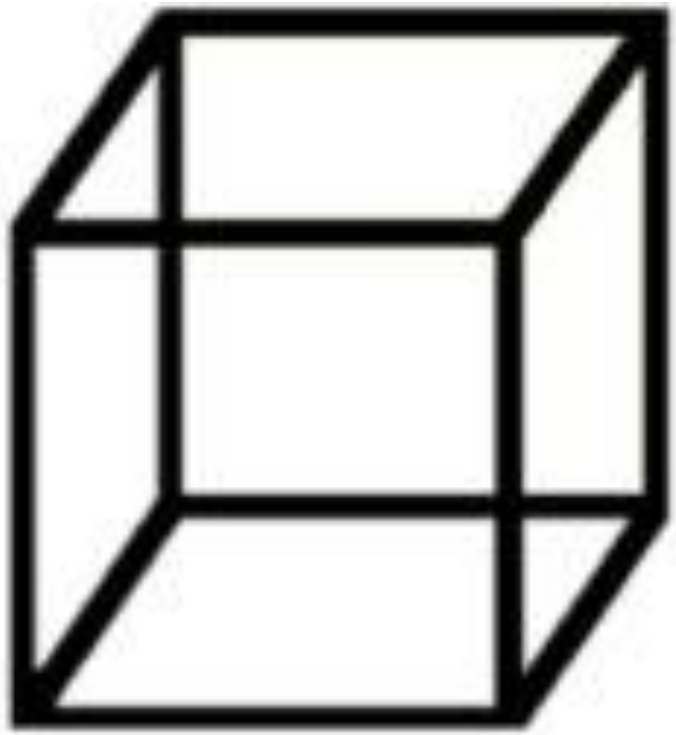
The woman to the left, how old do you think she is?

1. Less the 15 years
2. 16 to 30 years
3. 31 to 45 years
4. 46 to 60 years
5. Older than 60 years

Turning Point Query #3

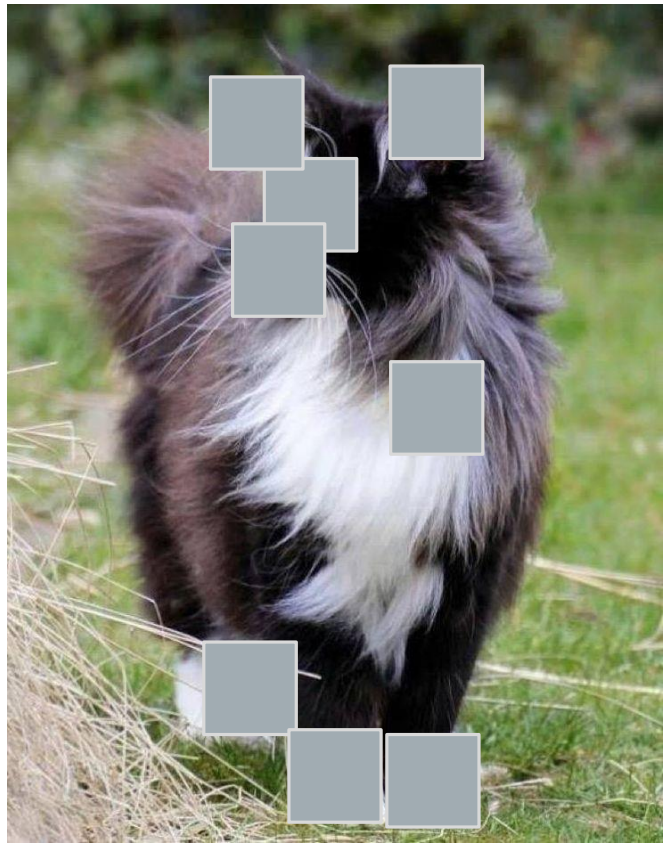
I just showed you an image of a woman.
Approximately how old would you say she was?

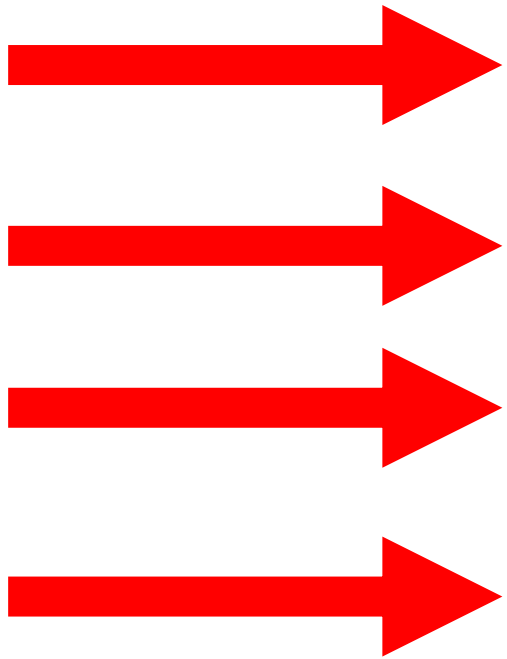
1. Less than 15 years
2. 16 to 30 years
3. 31 to 45 years
4. 46 to 60 years
5. Older than 60

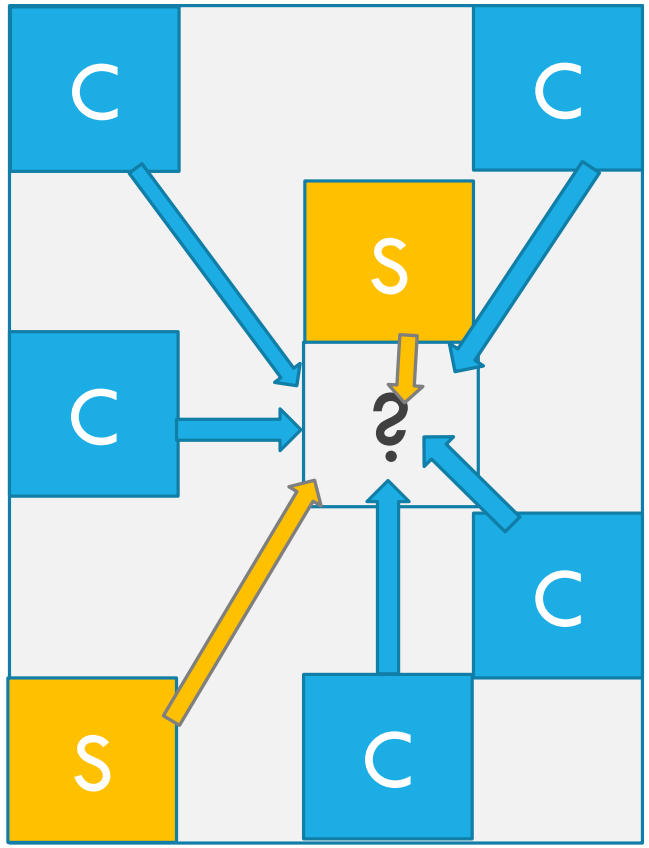


Piaget – Accommodation vs Assimilation

The Notion of Active Sampling







Consensus!

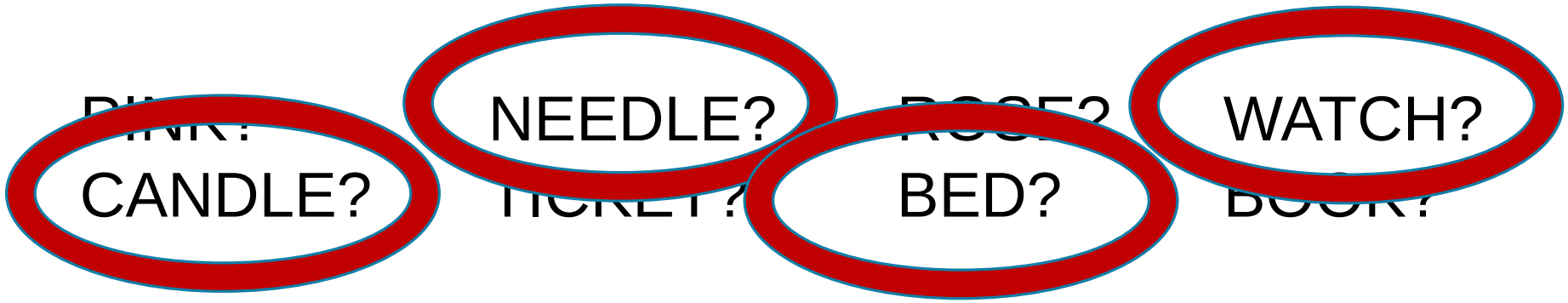
Once consensus is achieved, you simply perceive what you perceive, correct or not

3

Making Sense of Memories

Constructing a perception based on noisy inputs from the world is no different from constructing perceptions based on ”noisy” data left over from past experiences (i.e., memory)

Another Example



Q1. Was WATCH on the list?
Q2. Was CANDLE on the list?
Q3. Was BED on the list?
Q4. Was NEEDLE on the list?

1 = very confident "NO" 5 = "Not Sure" 9 = very confident "YES"

Turning Point Query #4

Was WATCH on the list?

1. Very confident NO
2. Confident NO
3. A Little Confident NO
4. Just Guessing NO
5. No Idea
6. Just Guessing YES
7. A Little Confident YES
8. Confident YES
9. Very Confident YES

Turning Point Query #5

Was CANDLE on the list?

1. Very confident NO
2. Confident NO
3. A Little Confident NO
4. Just Guessing NO
5. No Idea
6. Just Guessing YES
7. A Little Confident YES
8. Confident YES
9. Very Confident YES

Turning Point Query #6

Was BED on the list?

1. Very confident NO
2. Confident NO
3. A Little Confident NO
4. Just Guessing NO
5. No Idea
6. Just Guessing YES
7. A Little Confident YES
8. Confident YES
9. Very Confident YES

Turning Point Query #7

Was NEEDLE on the list?

1. Very confident NO
2. Confident NO
3. A Little Confident NO
4. Just Guessing NO
5. No Idea
6. Just Guessing YES
7. A Little Confident YES
8. Confident YES
9. Very Confident YES

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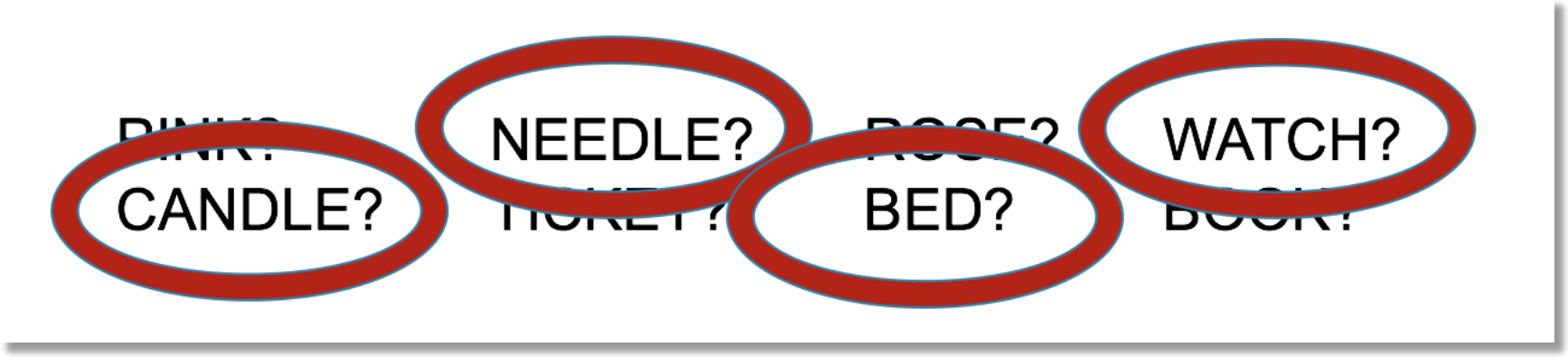
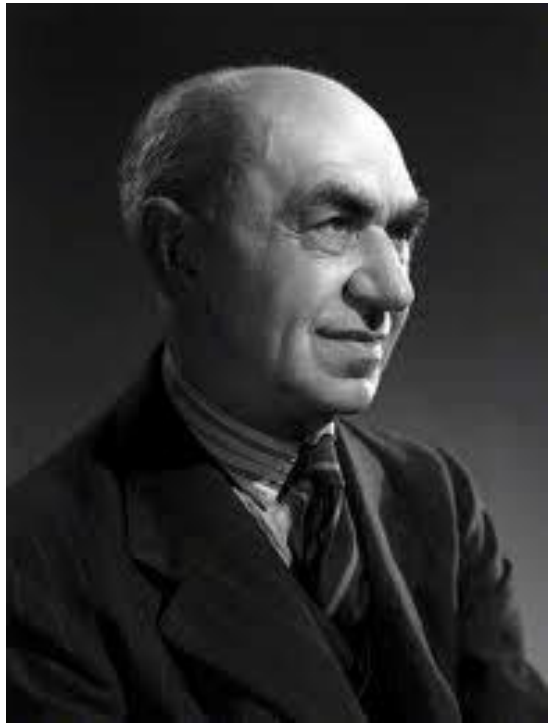


Sir Frederic Barlett

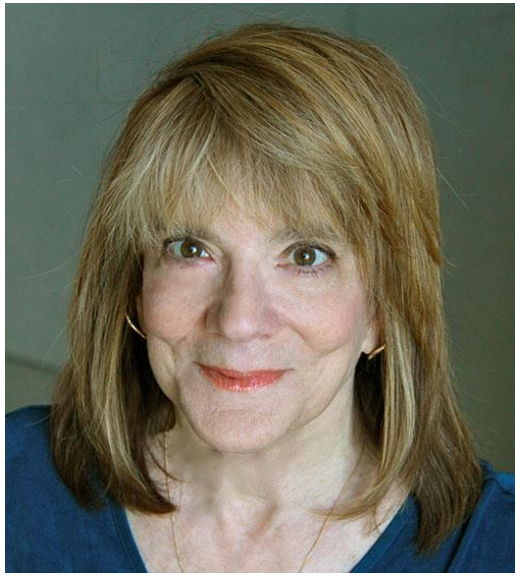


Memory is reconstructive

People remember the gist of things, not the details

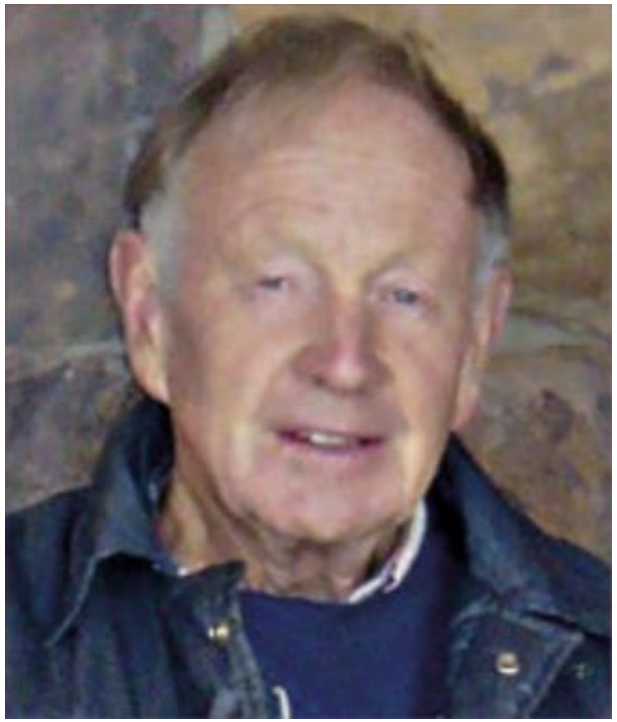
If pushed to remember details they "normalize" events … that is we tend to see and remember events in a way that fits what is "normal" for us

Verb used	Average Speed Estimate
Smashed	40.8
Collided	39.3
Bumped	38.1
Hit	34.0
Contacted	31.8



Response	Smashed	Hit	Control
Saw broken glass	16	7	6
Didn't see broken glass	34	43	44

Meet Donald Thompson, Psychologist, Memory Expert … and Rapist?



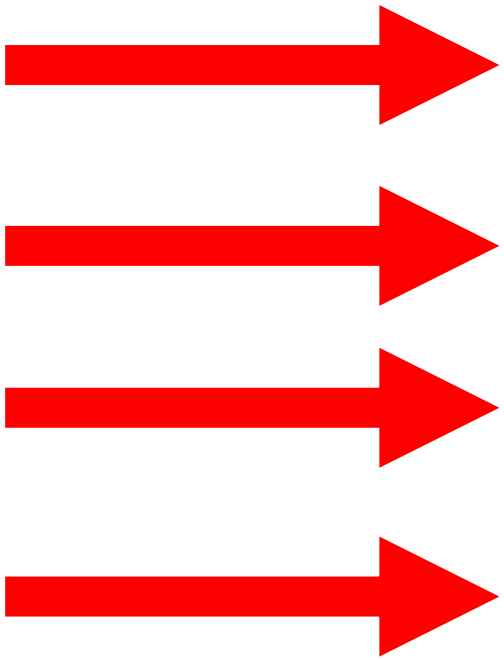
4

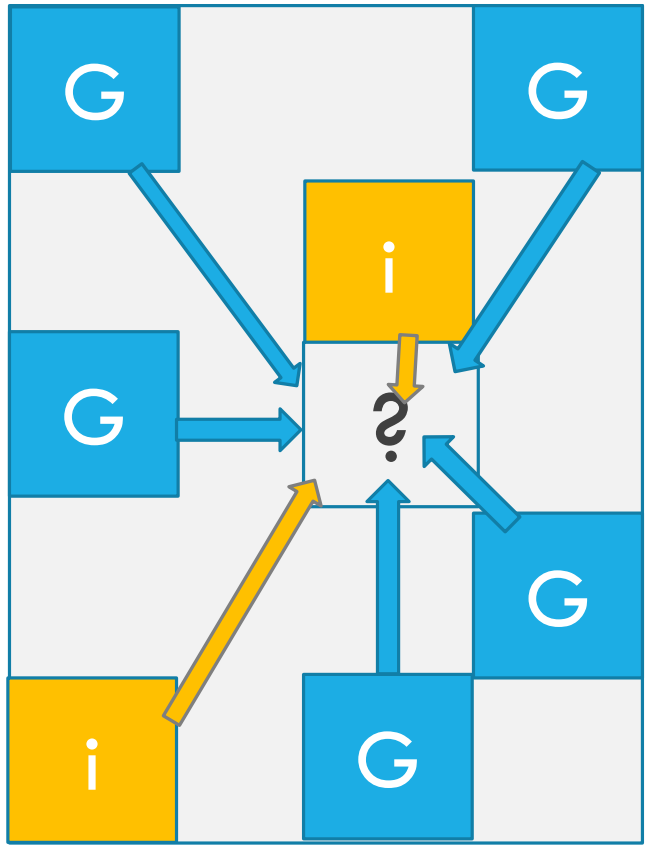
Making Decisions & Making Sense

The same process that the brain uses to “make sense” of noisy experience is also what it uses to make decisions based on noisy data


Case Law

The Notion of Active Sampling





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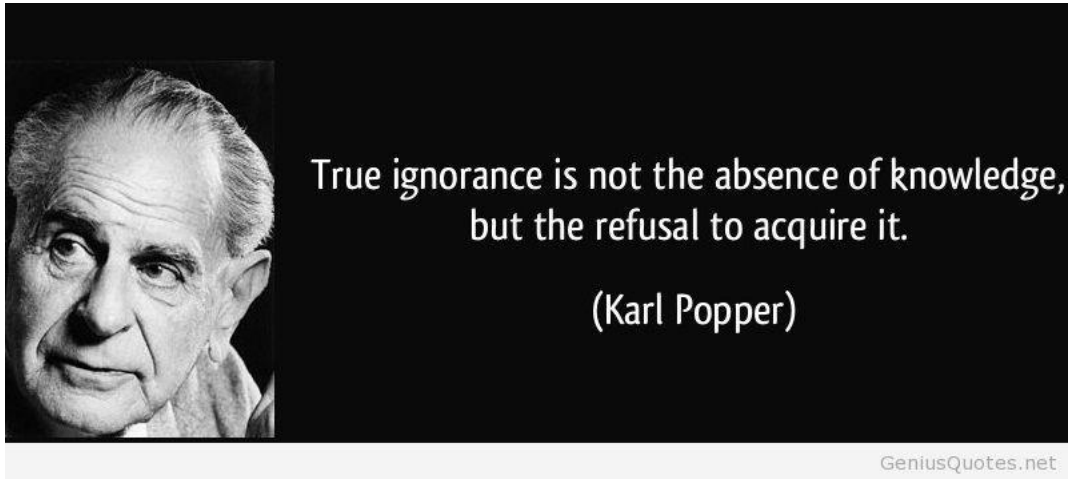
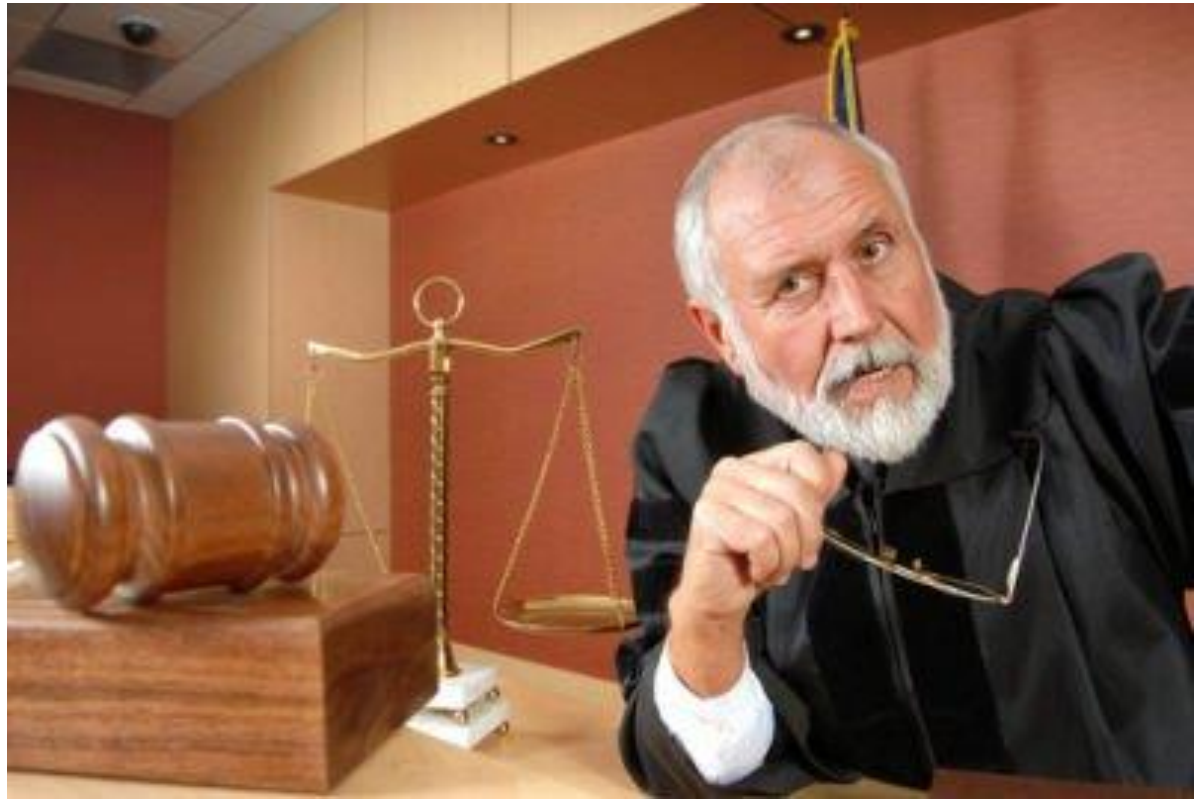
Fighting Confirmation Bias



The Judicial Hunch



Fight the downplaying of “external” information by consciously attending to it and whether it fits, or doesn’t, the current most likely hypothesis

Especially attend to information that <u>does not fit</u> and, to the extent possible, follow up on those points

Also respect and accept when the ”decision won’t write” … this can indicate that the internal forces won out during the trial by downplaying something that goes against the stereotype

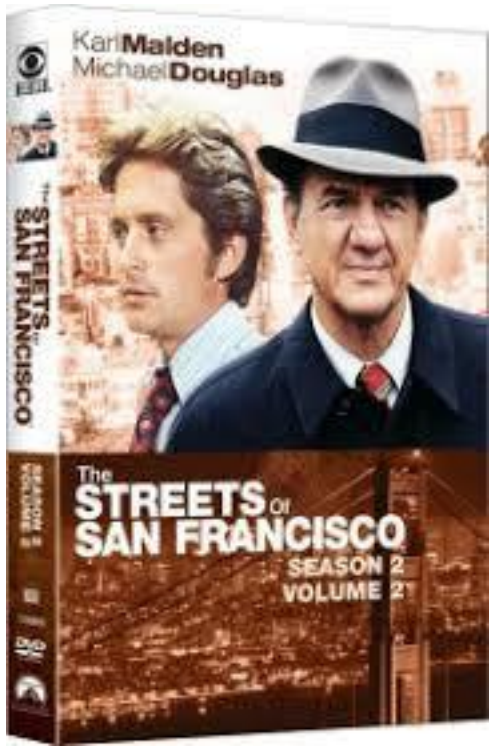
Make these things habits early through education

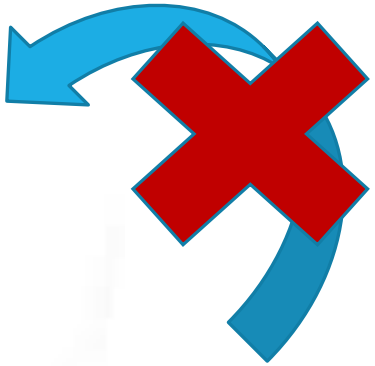
- Create mock scenarios in which some contradictory evidence is (or is not) buried within other evidence that points to a certain outcome – then submit them
- Use of peer-assessment - ”students” see scenarios, decide a verdict, and write it up.
- Students then see their peers’ decisions, directly seeing the impact across those who found, or didn’t, the contraditcory info


THANK YOU

Extra Slides

Deja Vu





Dream?

Past Life?