WE THINK WE KNOW WHAT HAPPENED.... COGNITIVE BIAS IN INVESTIGATIONS

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TOPICS FOR TODAY

- WHAT ARE COGNITIVE BIASES?
- How do they Impact investigations?
- HOW CAN WE REDUCE THEIR IMPACT?

COGNITIVE BIASES

SYSTEMATIC ERRORS IN THINKING THAT AFFECTS THE DECISIONS AND JUDGMENTS OF PEOPLE

Automatic.Unconscious.

COGNITIVE BIASES

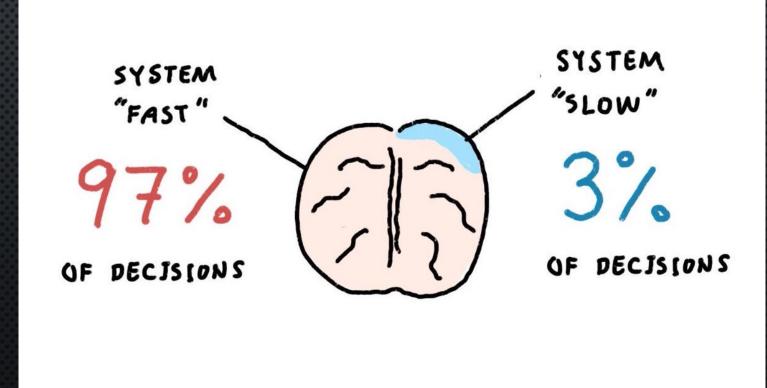
 Shape how human beings select and process information.

COGNITIVE BIASES

TOOLS THAT ALLOW US TO:
ESTABLISH SHORTCUTS THAT SIMPLIFY DECISION MAKING
MAKE OUR WORLD MORE PREDICTABLE

 ABSORB NEW INFORMATION CONSISTENTLY WITH WHAT WE ALREADY KNOW

BIASES HELP US GET STUFF DONE They ease the cognitive load of making decisions



We store memories differently based -0 We notice things already primed on how they were experienced -in memory or repeated often We reduce events and lists What Should We to their key elements Bizarre/funny/visually-striking/ **Too Much** anthropomorphic things stick out more **Remember?** than non-bizarre/unfunny things Information We discard specifics to form generalities We notice when 0 something has changed We edit and reinforce some memories after the fact We are drawn to details that confirm our own existing beliefs We favor simple-looking options and complete information over complex, ambiguous options We notice flaws in others more easily than flaws in ourselves To avoid mistakes, we're motivated to preserve our autonomy and status in a group, and to avoid irreversible decisions We find stories and patterns even in sparse data To get things done, we tend to complete things we've invested time & energy in To stay focused, we favor the immediate, We fill in characteristics from stereotypes, relatable thing in front of us generalities, and prior histories Need To Act Fast To act, we must be confident we can We imagine things and people we're make an impact and feel what we do familiar with or fond of as better is important **Not Enough** We simplify probabilities and numbers . make them easier to think about Meaning We project our current mindset and We think we know what assumptions onto the past and future . other people are thinking

COGNITIVE BIAS CODEX, 2016

ALGORITHMIC LAYOUT + DESIGN BY JM3 · JOHN MANOOGIAN III // CONCEPT + METICULOUS CATEGORIZATION BY BUSTER BENSON // DEEP RESEARCH BY WIKIPEDIANS FAR + WIDE

COGNITIVE BIAS CHEAT SHEET BECAUSE THINKING IS HARD



1 TOO MUCH INFO

SO ONLY NOTICE ...

- CHANGES
- BIZARRENESS
- REPETITION
- CONFIRMATION



3 NOT ENOUGH TIME

SO ASSUME ...

- WE'RE RIGHT
- WE CAN DO THIS
- NEAREST THING IS BEST
- FINISH WHAT'S STARTED
- KEEP OPTIONS OPEN
- EASIER IS BETTER

2 NOT ENOUGH MEANING

SO FILL IN GAPS WITH ... - PATTERNS

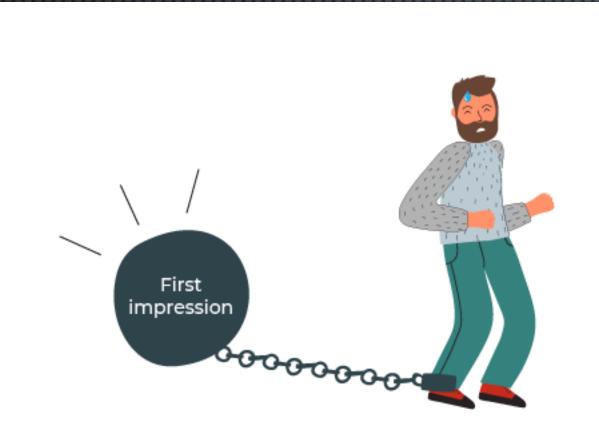
- GENERALITIES
- BENEFIT OF DOUBT
- EASIER PROBLEMS
- OUR CURRENT MINDSET

4 NOT ENOUGH MEMORY

- SO SAVE SPACE BY ...
- EDITING MEMORIES DOWN
- EVELING MEMORIES DOW
- GENERALIZING
- KEEPING AN EXAMPLE
- -USING EXTERNAL MEMORY

BY OBUSTER HTTP://BIT.LY/THINKING-IS-HARD

DOES THIS SOUND LIKE A TYPICAL INVESTIGATION TO YOU??



HUMAN TENDENCY TO RELY MORE HEAVILY ON THE FIRST PIECE OF INFORMATION OFFERED (THE "ANCHOR") WHEN MAKING DECISIONS.

ANCHORING

WYLFIWYF

Assumptions about what we are going to see (What-You-Look-For), to a large extent will determine what we actually find (What-You-Find)

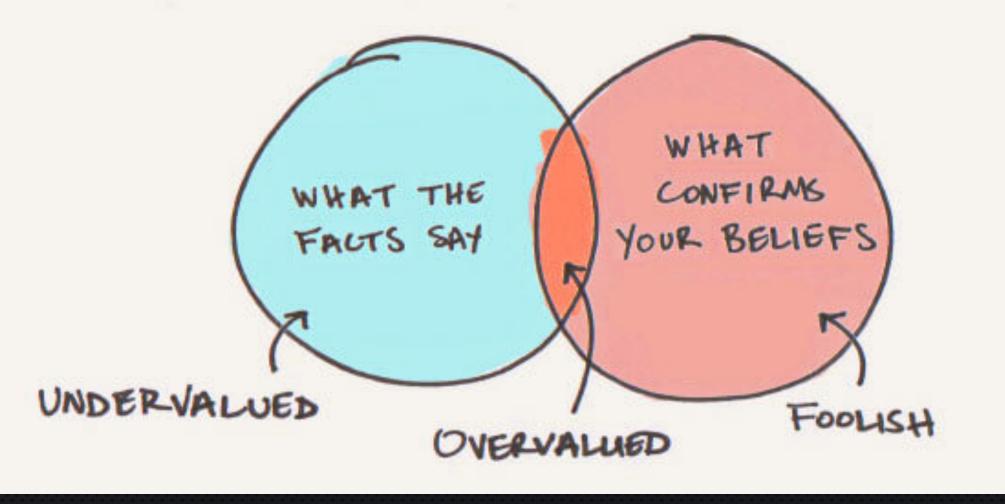
(HOLLNAGEL, 2009)

ANCHORING

- THE FIRST IDEA FOR WHICH THERE IS EVIDENCE CAPTURES THE ORGANIZATION'S ATTENTION.
- This idea comes to dominate subsequent thinking and analysis to the exclusion of other causes
- OFTEN TAKES FOCUS AWAY FROM CULTURAL OR SYSTEMS ISSUES
- OBSCURES THE TRUE CAUSES OF THE EVENT
- CAN LEAD TO PERPETUATING THE PROBLEM

This leads to.....

THE CONFIRMATION BIAS



FUNDAMENTAL ATTRIBUTION ERROR

EXPLAINING OTHERS' BEHAVIORS IN TERMS OF THEIR PERSONALITIES RATHER THAN THEIR SITUATIONS HOW WE JUDGE BEHAVIOR OF OTHERS?

WE CONSIDER

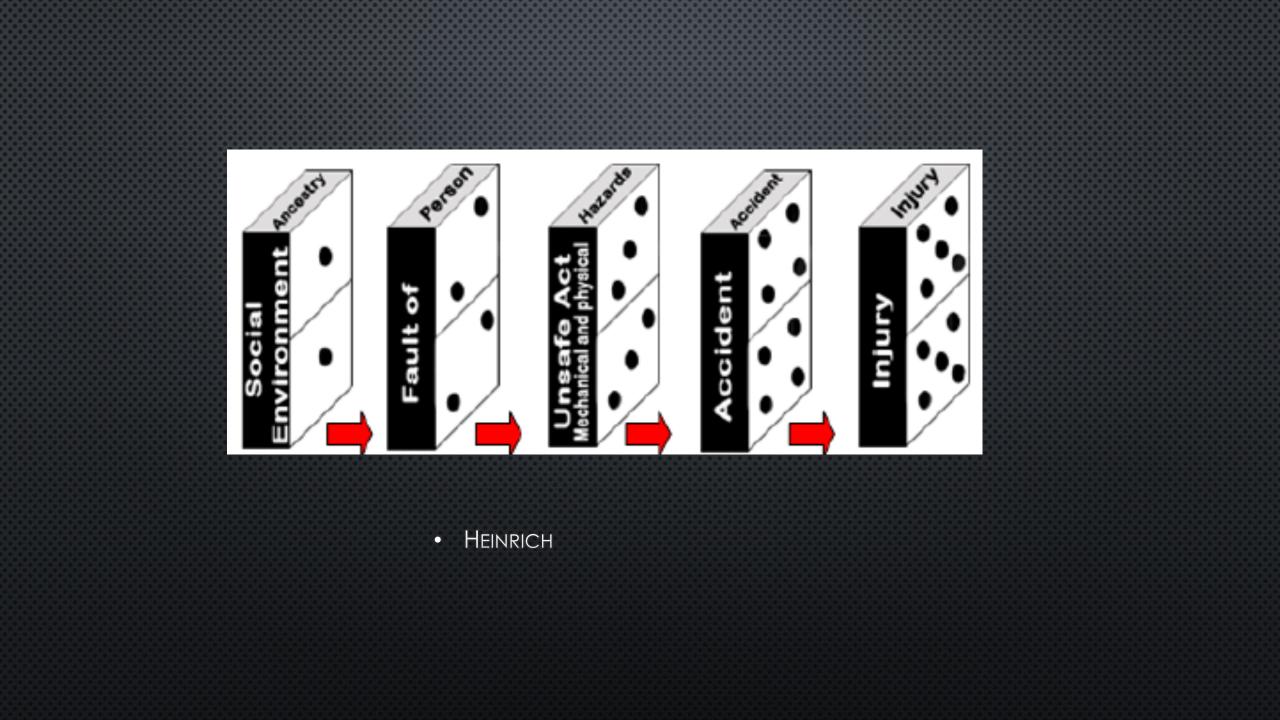
USUALLY

CHARACTER

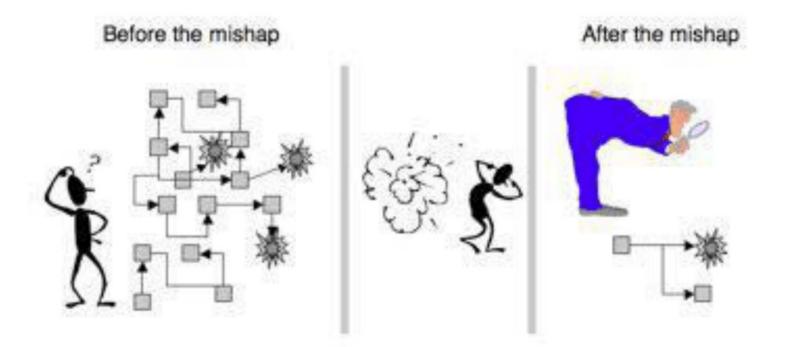
SITUATION THEY ARE IN

FUNDAMENTAL ATTRIBUTION ERROR ESTIMATING THE INFLUENCE OF SITUATIONS ON BEHAVIOR

	Failures	Successes
Other People	What an idiot!!!	They got lucky!
Ourselves	What crappy luck!	Dang, I'm good!



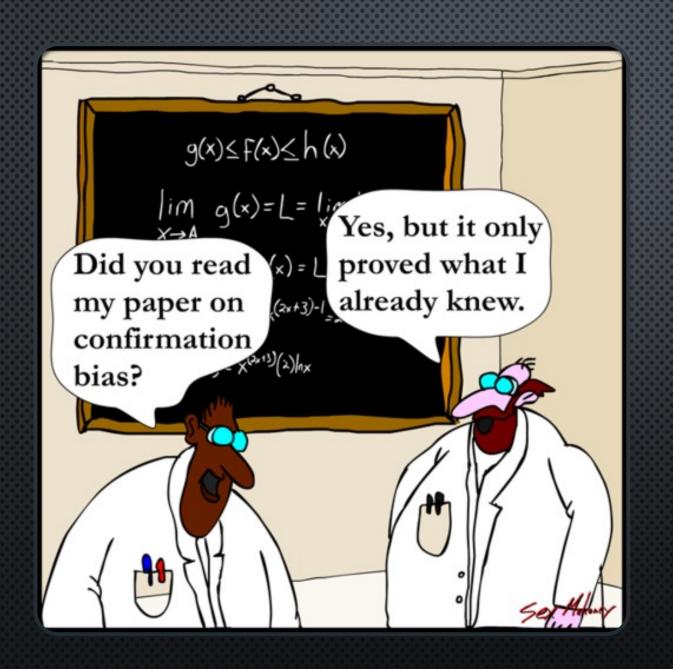
Hindsight Bias



Sidney Dekker, 2009

"Hindsight is 20/20"

Tendency to see past events as being predictable at the time those events happened.



WHAT INTRODUCES BIAS IN INVESTIGATIONS?

LEADS YOU DOWN A PATH OF WHERE TO LOOK MAY BE WORDED SUGGESTIVELY

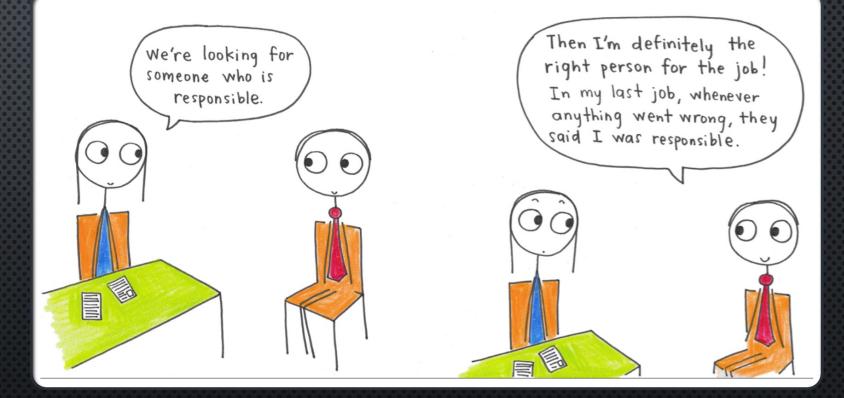
CHECKLISTS

• ESPECIALLY PROBLEMATIC WHEN PRESSURE TO COMPLETE AN INVESTIGATION RESULTS IN RUSHING THROUGH THEM

INTERVIEWS ARE VULNERABLE TO...

 UNCONSCIOUS MEMORY DISTORTIONS AND BIASES.

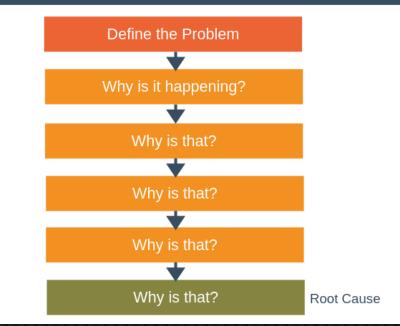
 SUGGESTIONS DURING THE INTERVIEWING PROCESS.



ASKING "WHYS?"

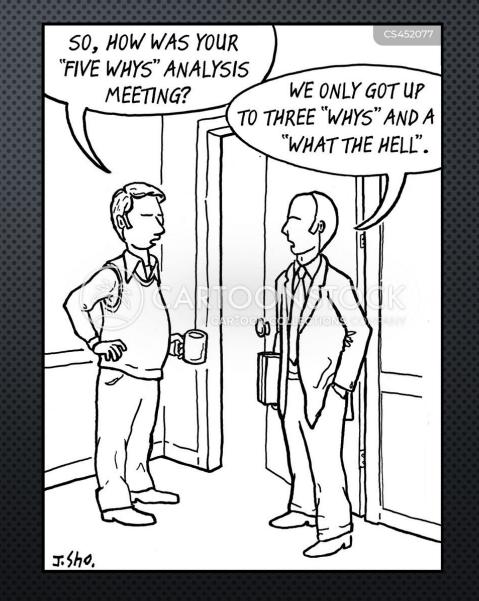
- Forces a causal chain
- This chain is driven by the questioner's choices
- GIVES A LOT OF POWER TO EACH OF THE ANSWERS
- Relies on assumptions
- GNORES COMPLEXITY IN AN EVENT





THE FIVE WHYS OR THE FIVE BLAMES?

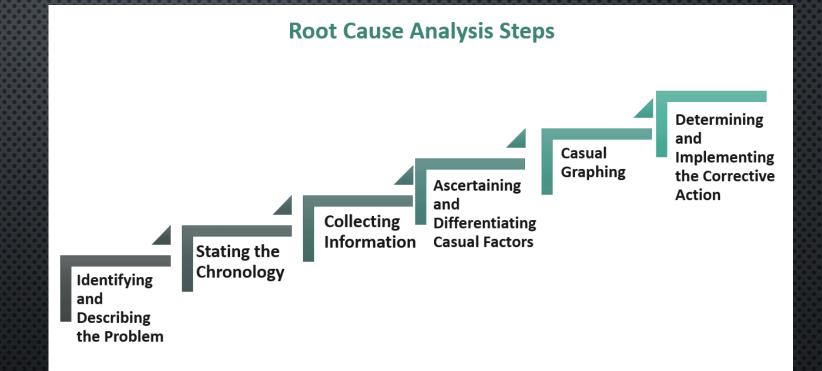
""MHAŚ"——,"MHOŚ"



Root Cause Analysis

Can easily turn into "Retrospective Cover of Arse"

Easily driven by your starting hypothesis regarding the problem being explored



WallStreetMojo

LEARNING TEAMS

GROUPTHINK

A PHENOMENON IN WHICH A GROUP OF PEOPLE SHARE COMMON BUT POSSIBLY FALSE BELIEFS AND THINK AND MAKE DECISIONS IN THE SAME WAY.



"Now that you are all my little drones, I encourage you to speak my mind."

SO... WHAT CAN WE

TRAINING

KNOWLEDGE OF COGNITIVE BIAS
CAN ENABLE AN INVESTIGATOR TO:
QUESTION THEIR OWN THINKING
BE ALERT TO SIGNS OF POTENTIALLY BIASED THINKING

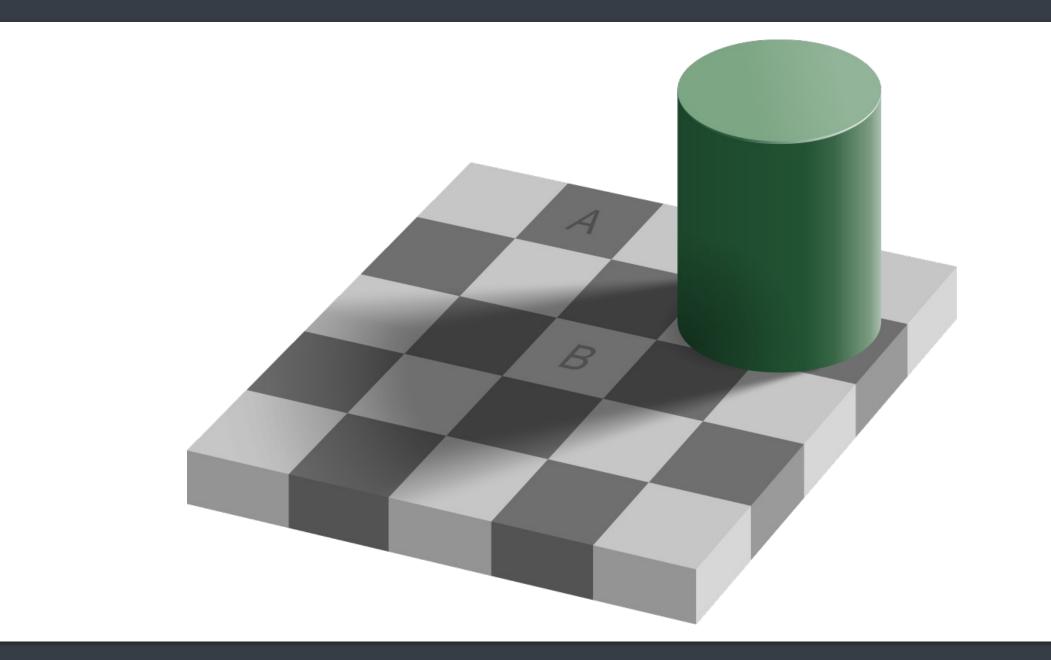
THE PARADOX

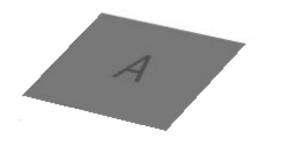
WE NOTICE COGNITIVE BIAS MUCH MORE IN OTHER PEOPLE THAN IN OURSELVES

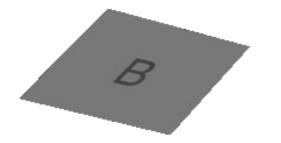
BUT....

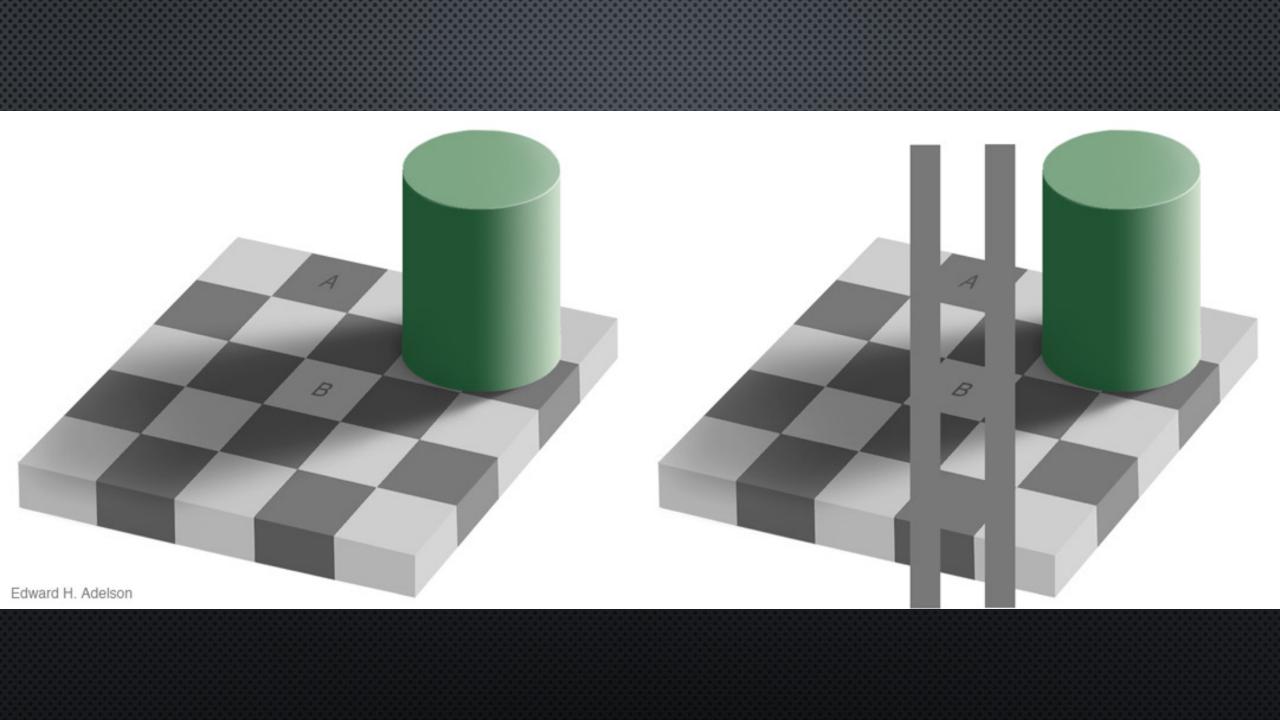
THIS FAILURE TO RECOGNIZE OUR OWN COGNITIVE BIASES IS....











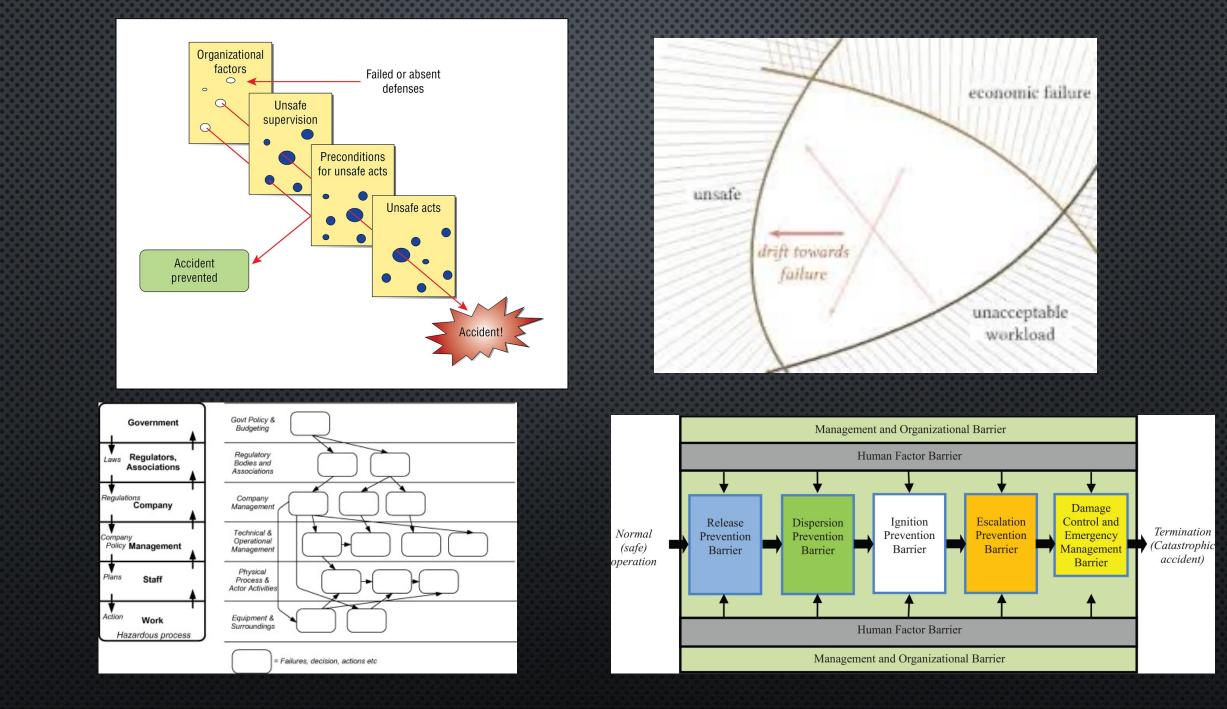
AWARENESS CAN'T FIX EVERYTHING

- EVEN WHEN YOU'VE LEARNED ABOUT THE ILLUSION—EVEN WHEN YOU HAVE THOSE GREY GUIDELINES HELPING YOU— YOUR BRAIN STILL UNCONSCIOUSLY SEES ONE AS LIGHT AND ONE AS DARK.
- IN THE SAME WAY, AWARENESS ALONE DOESN'T PREVENT BIAS.

KNOW THYSELF

"THE REALITY IS THAT THERE IS NO SUCH THING AS THE CAUSE, OR PRIMARY CAUSE OR ROOT CAUSE. **CAUSE IS SOMETHING WE CONSTRUCT**, NOT FIND." "AND HOW WE CONSTRUCT CAUSES

DEPENDS ON THE ACCIDENT MODEL THAT WE BELIEVE IN." DEKKER, 2006



ACCIDENT CAUSATION MODELS

• <u>HTTPS://RISK-ENGINEERING.ORG/STATIC/PDF/SLIDES-</u> <u>SAFETY-MODELS.PDF</u>

• <u>HTTPS://WWW.OHSBOK.ORG.AU/CHAPTER-32-MODELS-</u> <u>OF-CAUSATION-SAFETY/</u>

BRACKETING

- USED IN QUALITATIVE RESEARCH
- MITIGATES POTENTIALLY DELETERIOUS EFFECTS OF PRECONCEPTIONS THAT MAY TAINT THE RESEARCH PROCESS
- ATTEMPTS TO SET ASIDE ONE'S OWN BELIEFS AND ASSUMPTIONS IN ORDER TO AVOID MISREPRESENTING A SUBJECT'S INTENDED MEANING, PERCEPTION, OR EXPERIENCE
- BRACKETING HELPS YOU RECOGNIZE—AND TEMPORARILY SUSPEND—YOUR PERSONAL JUDGMENTS AND BIASES ON A SUBJECT WHILE CONDUCTING ANALYSIS

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BRACKETING

USE BRACKETING:

- EARLY IN YOUR INVESTIGATION PROCESS
- AS YOU PROCEED TO SUSPEND BIASES AND REFLECT ON THE SOCIAL, CULTURAL, AND HISTORICAL FORCES THAT SHAPE YOUR INTERPRETATION

BRACKETING METHODS

- "MEMOING"
- NOTE ANY BIASES OR CONTRADICTING INFORMATION YOU COME ACROSS
- Do this process both before and throughout the Investigation process

BRACKETING METHODS

- REFLEXIVE JOURNALING
- THROUGHOUT THE INVESTIGATION
- INCLUDE REFLECTIONS ON:
 - YOUR REASONS FOR DOING THE INVESTIGATION
 - ASSUMPTIONS REGARDING YOUR WITNESSES
 - YOUR PLACE IN THE POWER HIERARCHY
 - YOUR OWN PERSONAL BELIEFS ABOUT SAFETY, HUMAN ERROR, ACCIDENT CAUSATION, ETC....

Interview with participant Feed reflexive What were you insight back into thinking and feeling next interviews at the time? Reflexive thinking **Re-evaluate** Acknowledge your your findings baggage: assumptions, values, political leaning, What influence culture etc might this have on your findings?

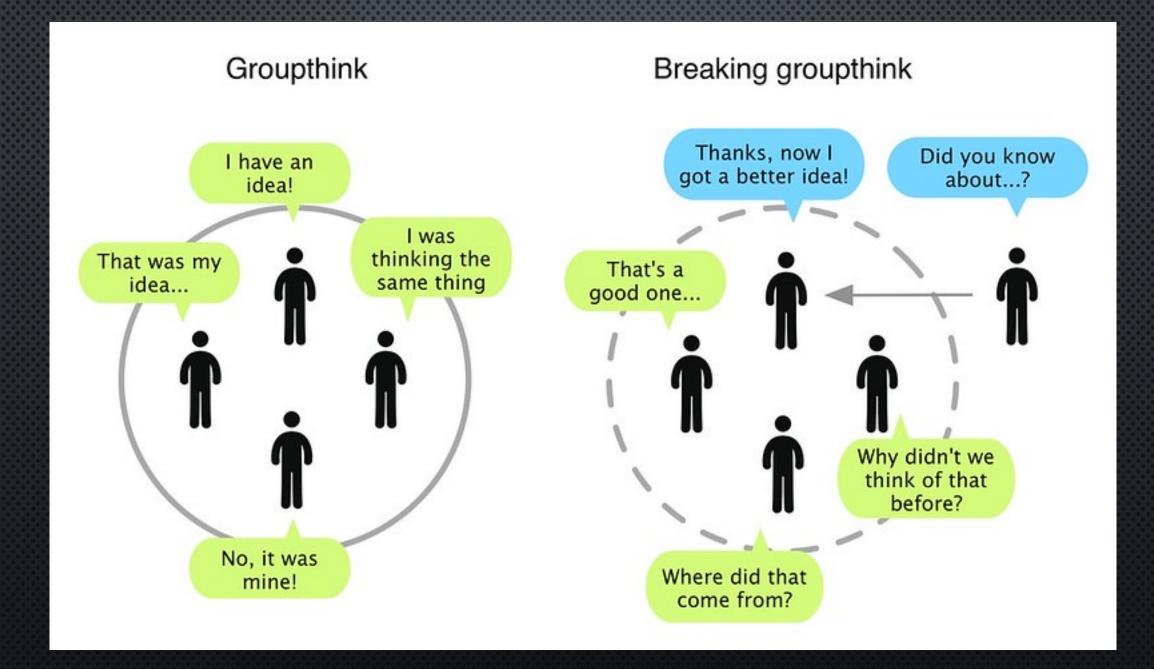
IN INTERVIEWS: DON'T ASSUME, ASK AND LISTEN



ASK "HOWS" NOT "WHYS"

• Gets multiple and diverse perspectives

- FOCUSES ON PERSONAL NARRATIVES
- ALLOWS FOR THICK DESCRIPTIONS
- CAPTURES CONDITIONS THAT ALLOWED AN EVENT TO TAKE PLACE
- PROVIDES RICHER OPERATIONAL DATA



USE DIVERSE INVESTIGATION TEAMS

WHEN ALL THINK ALIKE, THEN NO ONE IS THINKING

 ALLOW DIVERSE OPINIONS IN THE SAME ROOM

• SUBJECTIVE IMPRESSIONS WILL BE CHALLENGED

FORCES EVERYONE TO THINK MORE
 CRITICALLY

Put some 'devil' in your decision-making.

To improve the effectiveness of your team's decision-making take steps to encourage debate and critical challenge.

Assign someone the role of Devil's advocate.

Focus less on convincing and more on sharing alternative views.

Challenge ideas and assumptions, not people.

Try low-key phrasing, such as, "Shouldn't we also consider..."

Flag it if the group jumps straight to solutions.

Sources: Herbert, Theodore T., and Ralph W. Estes. 'Improving Executive Decisions by Formalizing Dissent: The Corporate Devil's Advocate.' The Academy of Management Review 2.4 (1977): 662. Web. Apr. 2017; Macdougall, C., and F. Baum. 'The Devil's Advocate: A Strategy to Avoid Groupthink and Stimulate Discussion in Focus Groups.' Qualitative Health Research 7.4 (1997): 532-41. Web. 2017.

wendyhirsch.com

USE A DEVIL'S ADVOCATE

"PEER REVIEW"



BE YOUR OWN DEVIL'S ADVOCATE

LIST OUT REASONS WHY YOUR ORIGINAL HYPOTHESIS MIGHT BE WRONG

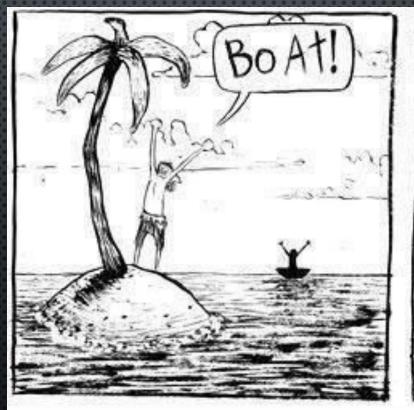
AVOIDING HINDSIGHT

- The biggest investigator bias is hindsight
- PUT YOURSELF IN THE PLACE OF THE DECISION-MAKER
- KEEP PROBING UNTIL YOU CAN SAY, 'IF I HAD BEEN IN THAT PERSON'S PLACE, I WOULD HAVE DONE THE SAME AS THEY DID'.
- THEN YOU WILL REALLY UNDERSTAND THEIR ACTIONS

ANDREW HALE

PERSPECTIVE TAKING REDUCES THE FAE

- NIC HOOPER, ATES ERDOGAN, GEORGIA KEEN, KATHARINE LAWTON, LOUISE MCHUGH
- JOURNAL OF CONTEXTUAL BEHAVIORAL SCIENCE, 2015





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