

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

JENNIFER SERNE

CENTRAL WASHINGTON UNIVERSITY, ELLENSBURG, WA

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



COGNITIVE
BIASES

- Automatic.
- Unconscious.
- Shape how human beings select and process information.

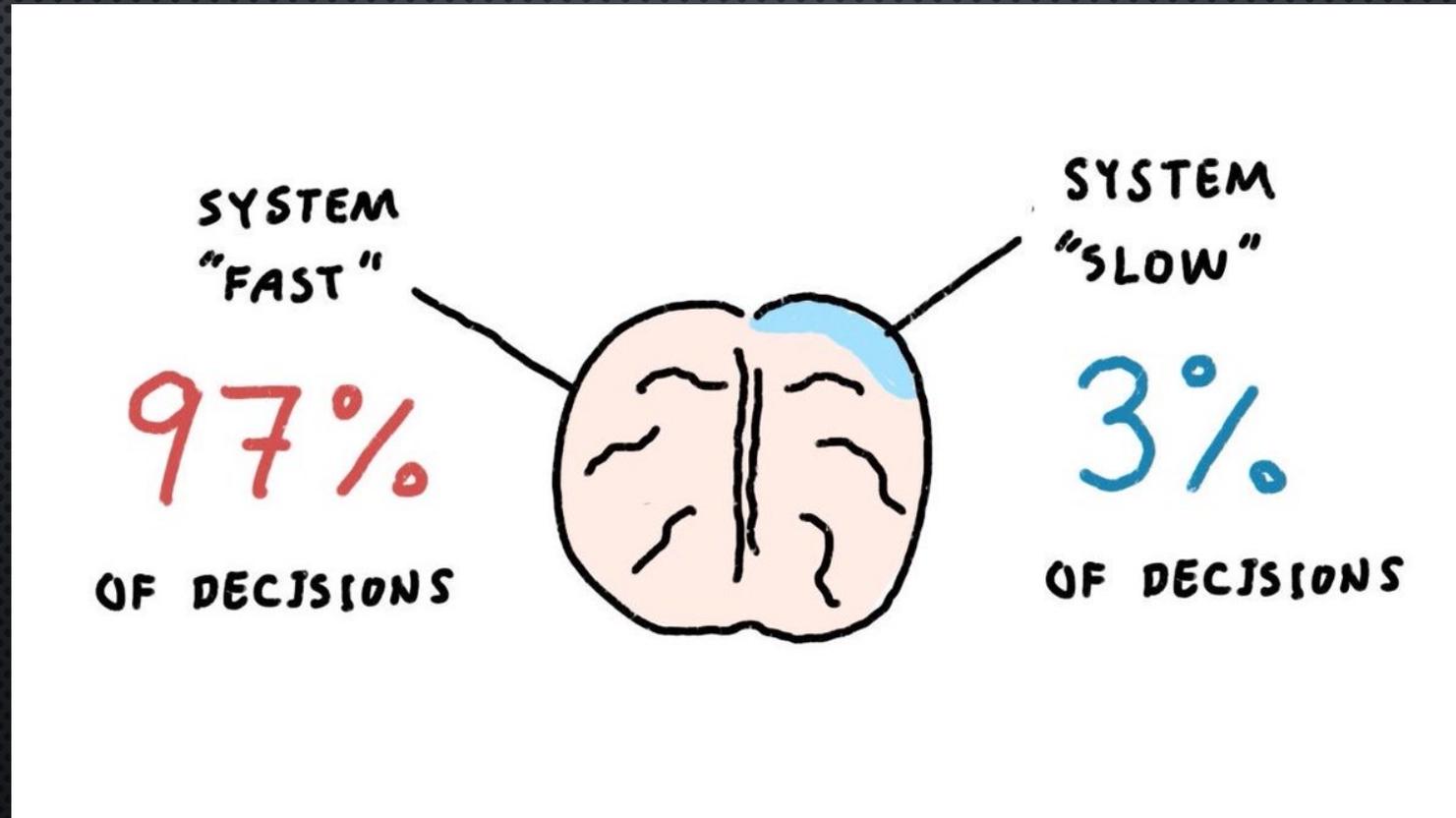


COGNITIVE
BIASES

- 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



COGNITIVE BIAS CHEAT SHEET

BECAUSE THINKING IS HARD



1 TOO MUCH INFO

SO ONLY NOTICE...

- CHANGES
- BIZARRENES
- REPETITION
- CONFIRMATION



2 NOT ENOUGH MEANING

SO FILL IN GAPS WITH...

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



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



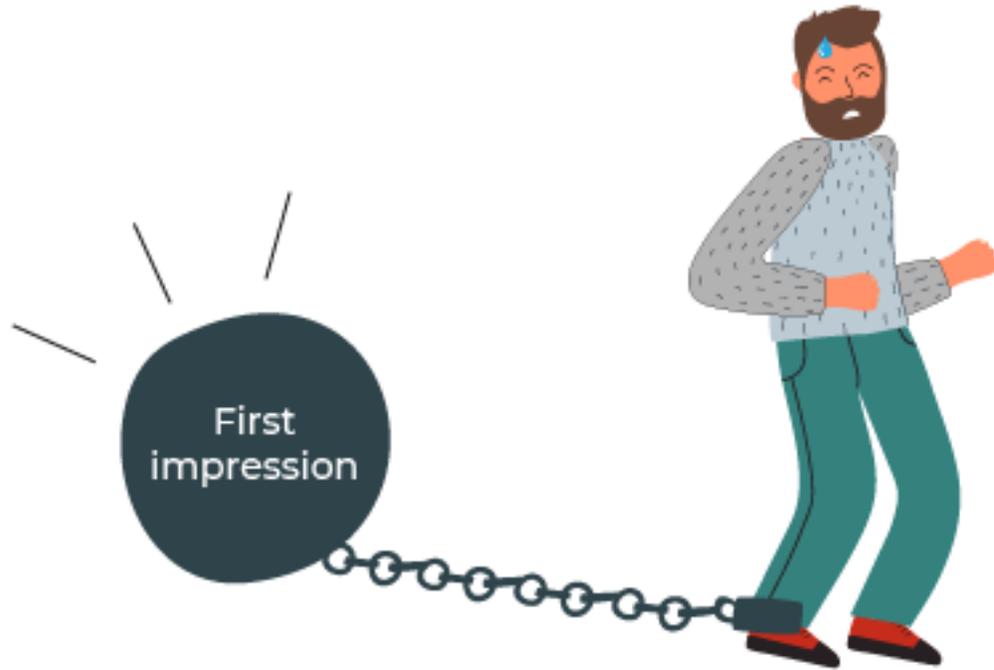
4 NOT ENOUGH MEMORY

SO SAVE SPACE BY...

- EDITING MEMORIES DOWN
- GENERALIZING
- KEEPING AN EXAMPLE
- USING EXTERNAL MEMORY

BY @BUSTER
[HTTP://BIT.LY/THINKING-IS-HARD](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

WYLFYFY

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)

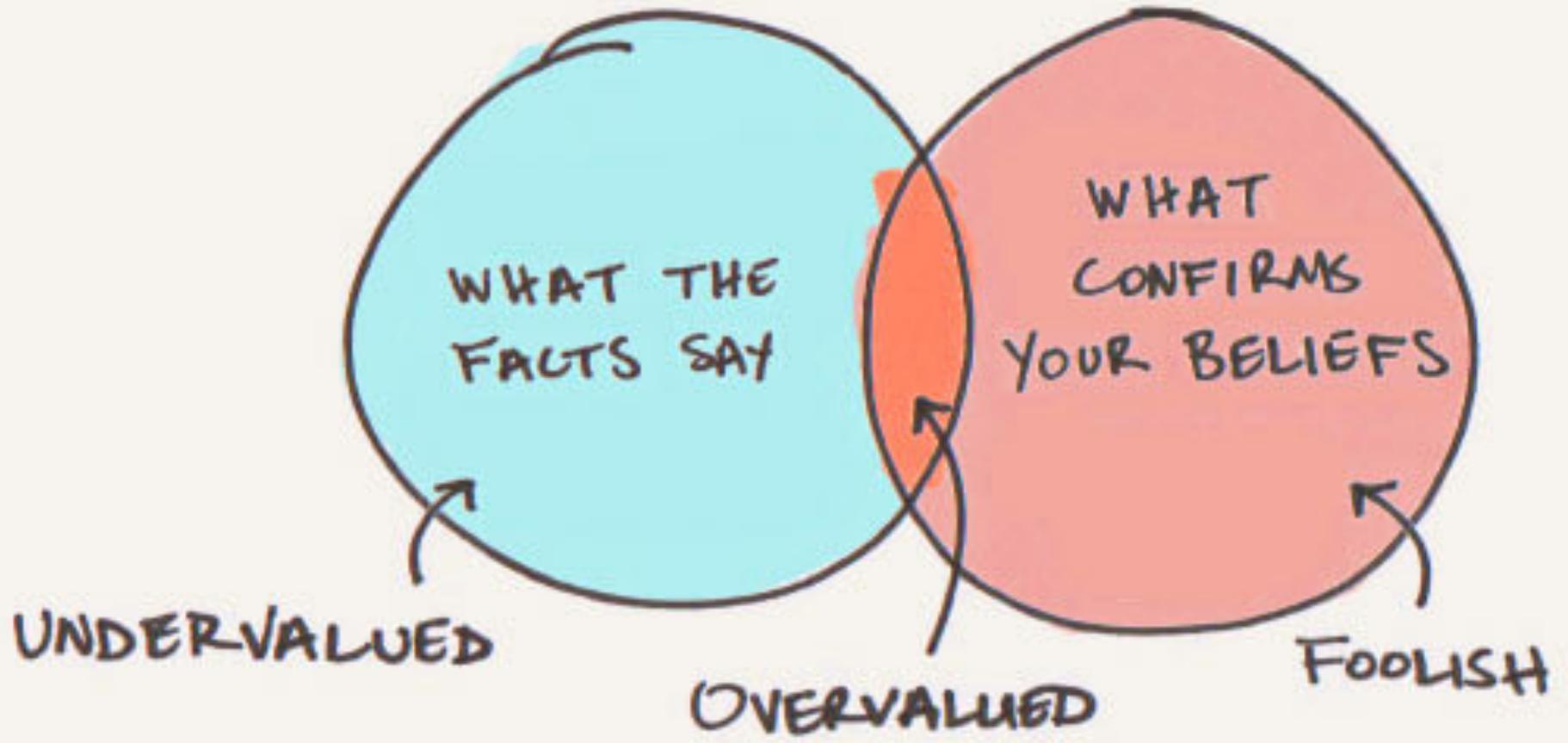
(HOLLNAGEL, 2009)

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

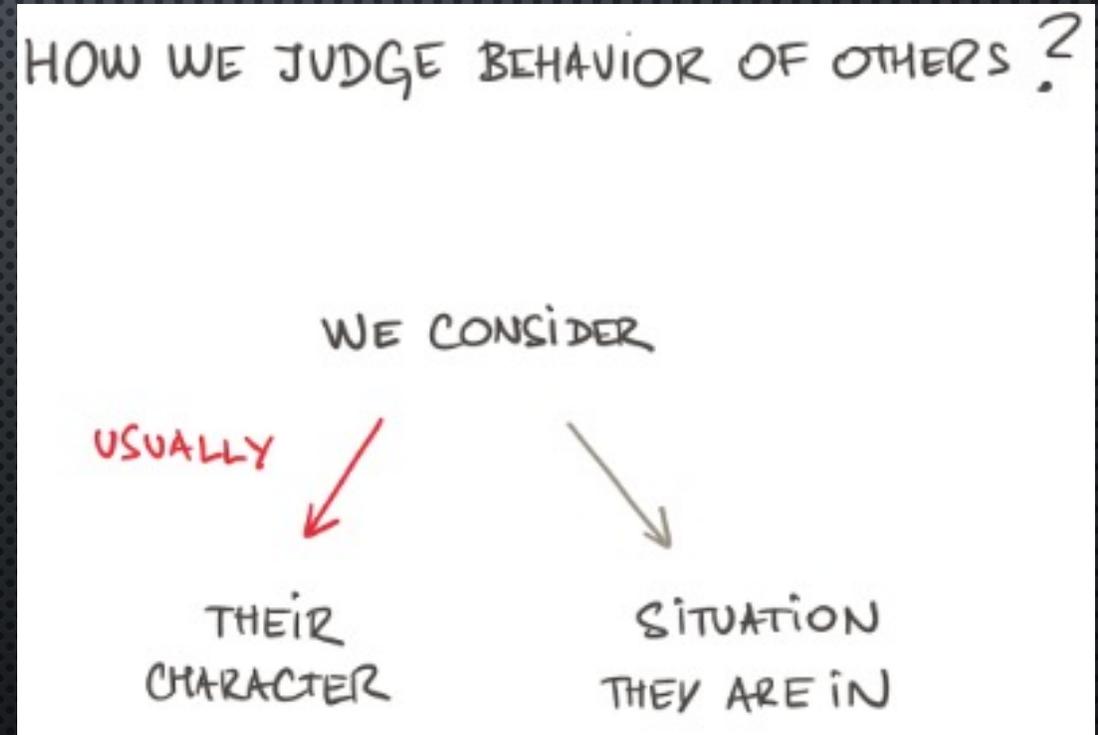
THIS LEADS TO.....

THE CONFIRMATION BIAS



FUNDAMENTAL ATTRIBUTION ERROR

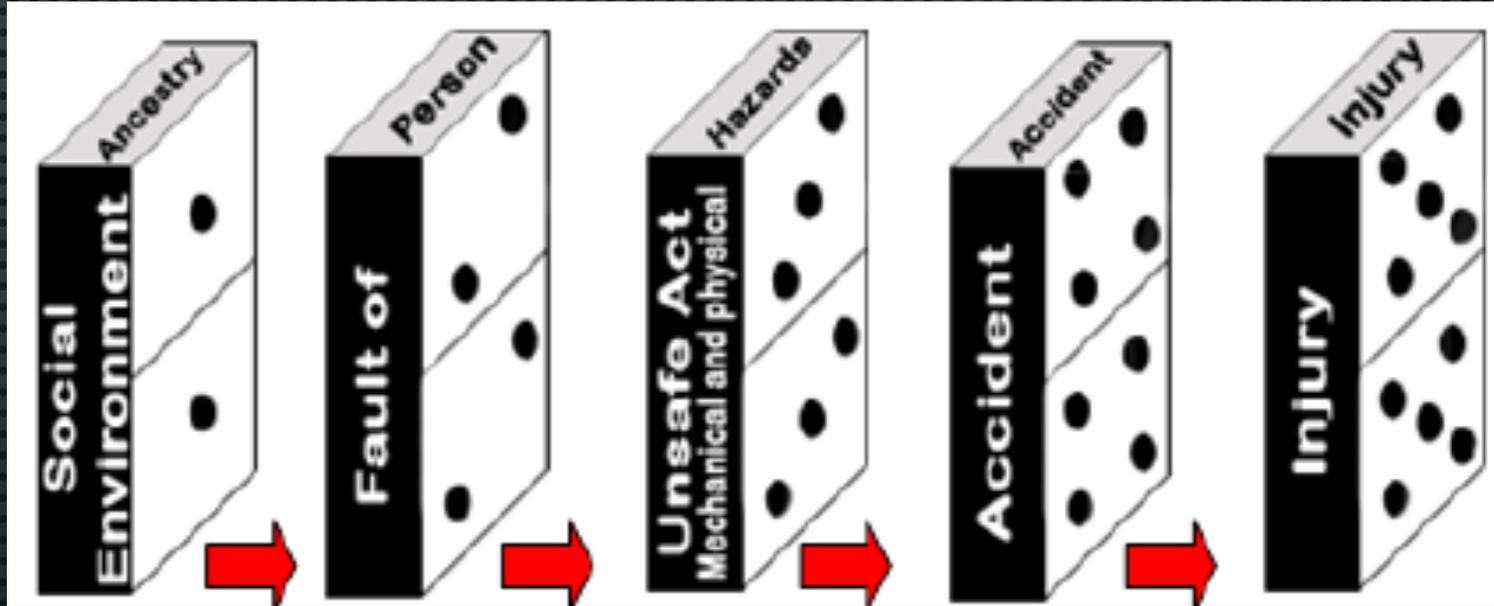
EXPLAINING OTHERS' BEHAVIORS
IN TERMS OF THEIR PERSONALITIES
RATHER THAN THEIR SITUATIONS



FUNDAMENTAL ATTRIBUTION ERROR

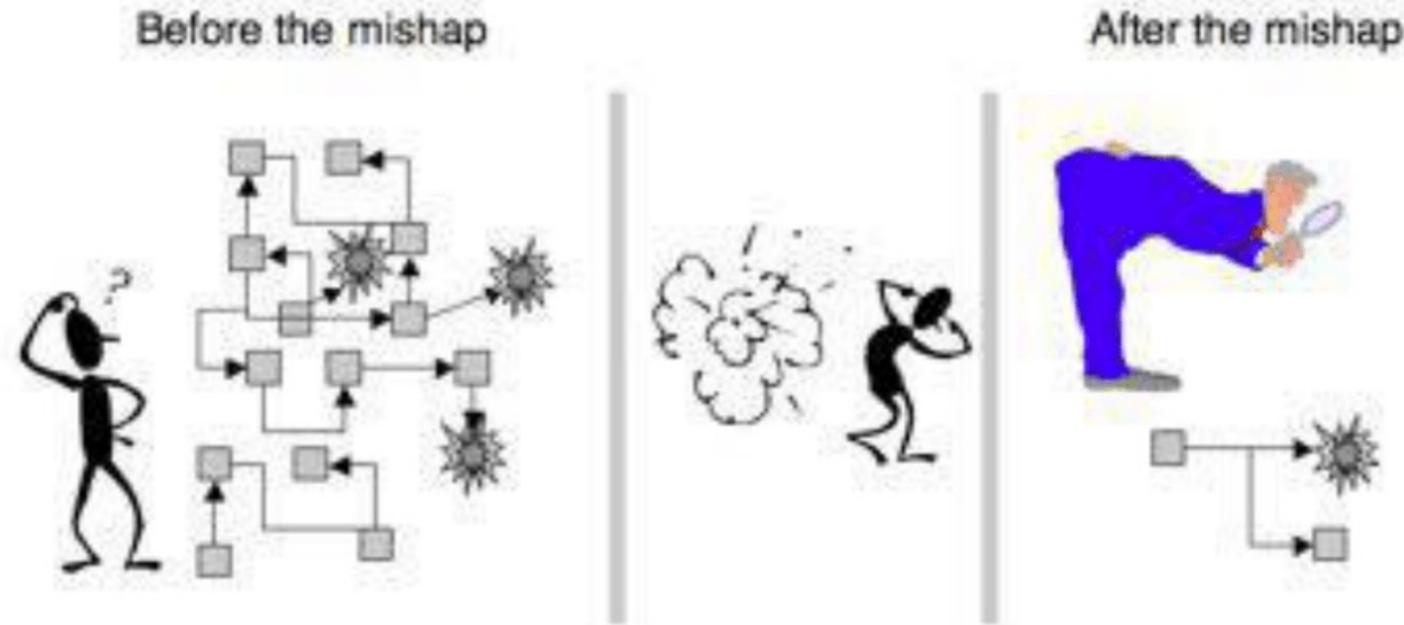
ESTIMATING THE INFLUENCE OF SITUATIONS ON BEHAVIOR

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



- HEINRICH

Hindsight Bias



Sidney Dekker, 2009

“HINDSIGHT IS
20/20”

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



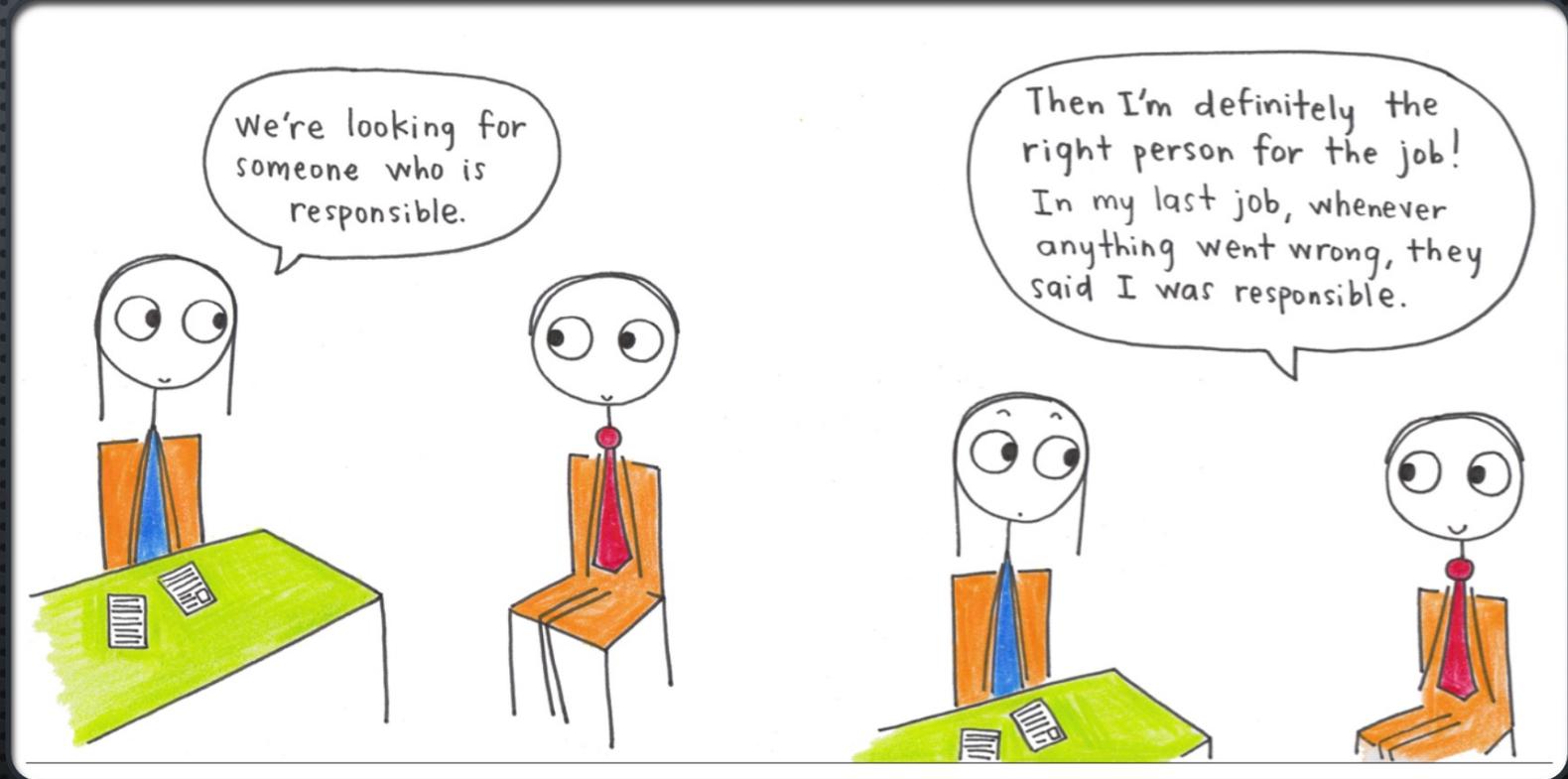
WHAT
INTRODUCES BIAS
IN
INVESTIGATIONS?

CHECKLISTS

- LEADS YOU DOWN A PATH OF WHERE TO LOOK
- MAY BE WORDED SUGGESTIVELY
- ESPECIALLY PROBLEMATIC WHEN PRESSURE TO COMPLETE AN INVESTIGATION RESULTS IN RUSHING THROUGH THEM

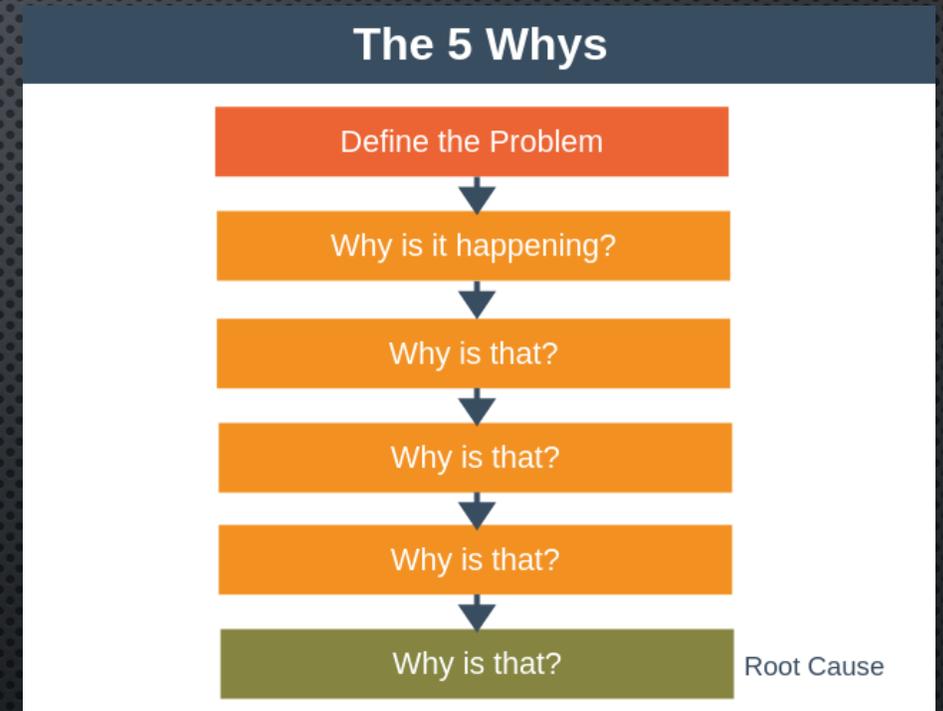
INTERVIEWS ARE VULNERABLE TO...

- 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
- IGNORES COMPLEXITY IN AN EVENT



THE FIVE WHYS OR THE FIVE BLAMES?

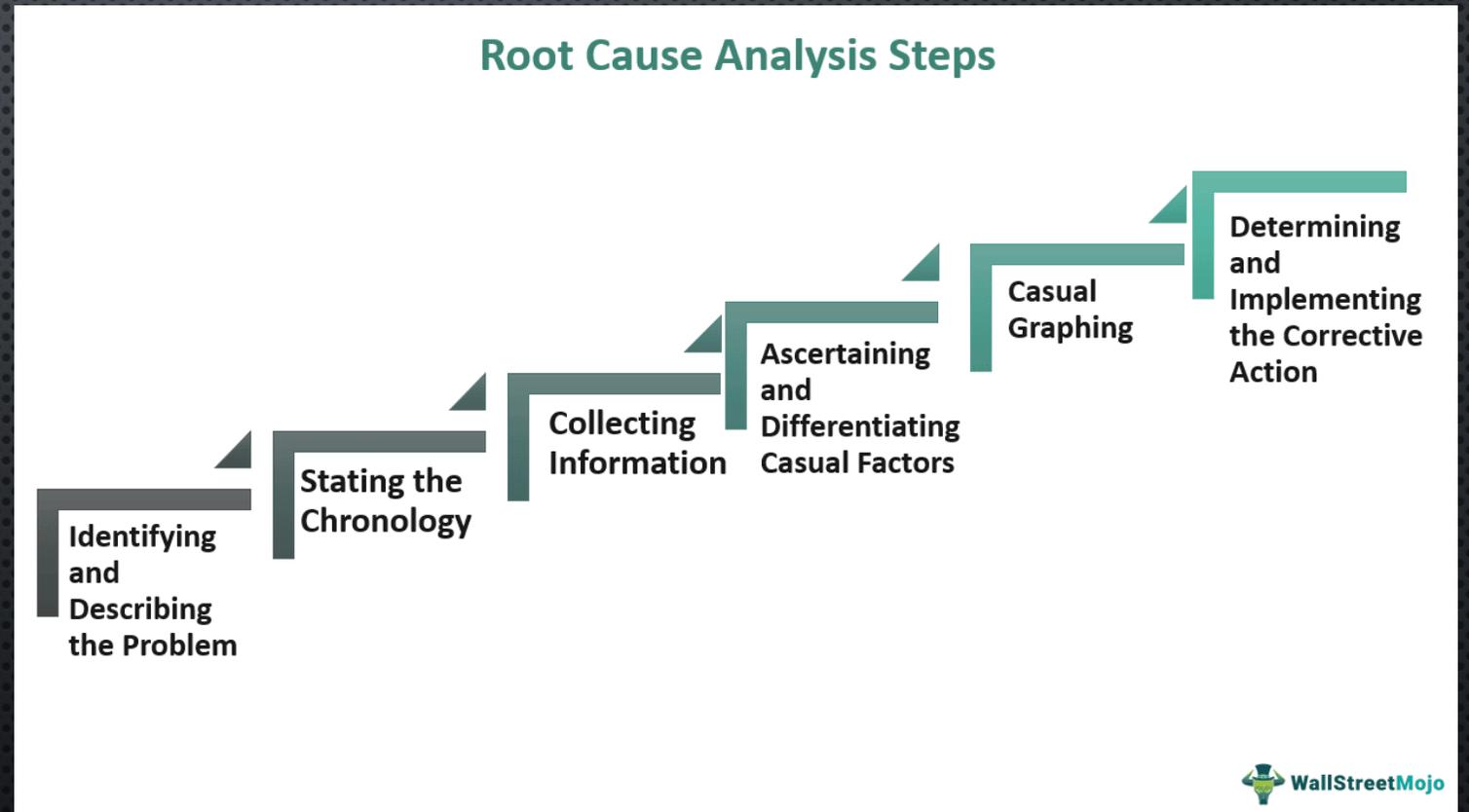
“WHY?”  “WHO?”



Root Cause Analysis

CAN EASILY TURN INTO
“RETROSPECTIVE
COVER OF ARSE”

Easily driven by
your starting
hypothesis
regarding the
problem being
explored



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
DO???

TRAINING

KNOWLEDGE OF COGNITIVE BIAS
CAN ENABLE AN INVESTIGATOR TO:

- QUESTION THEIR OWN THINKING
- BE ALERT TO SIGNS OF POTENTIALLY BIASED THINKING

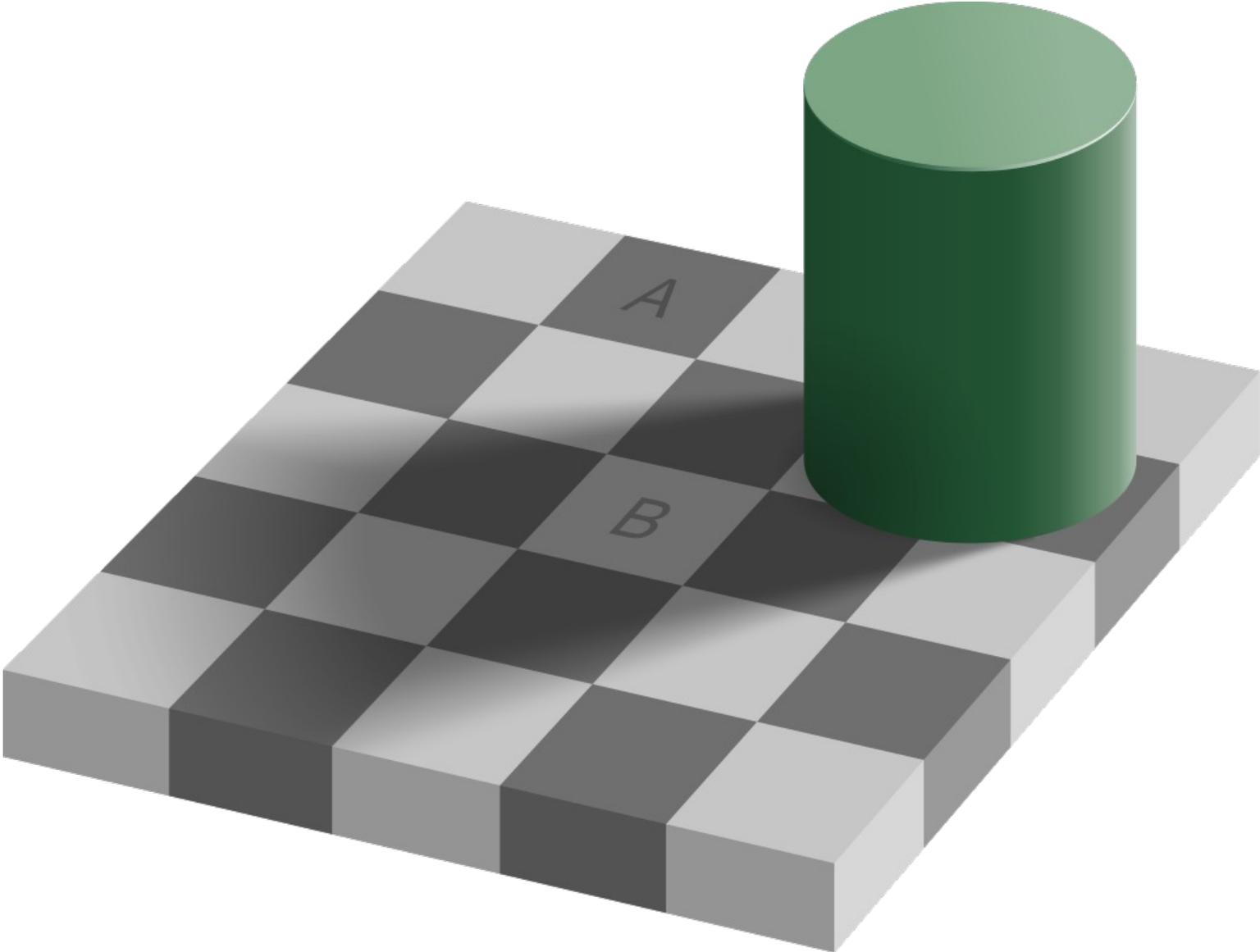
THE PARADOX

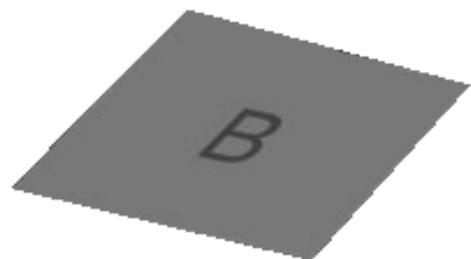
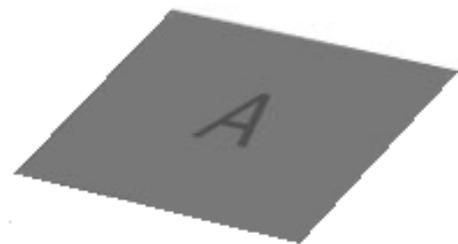
BUT.....

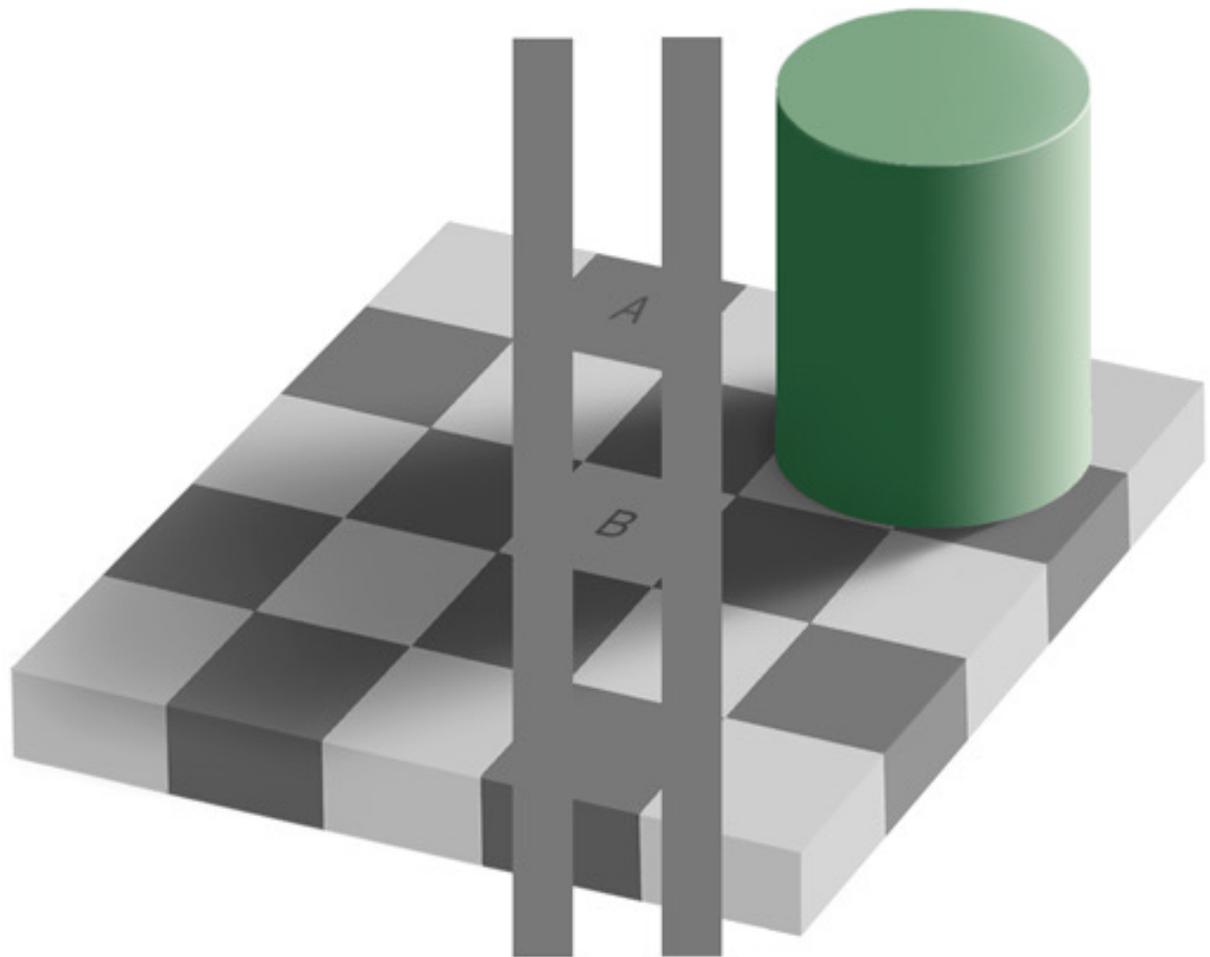
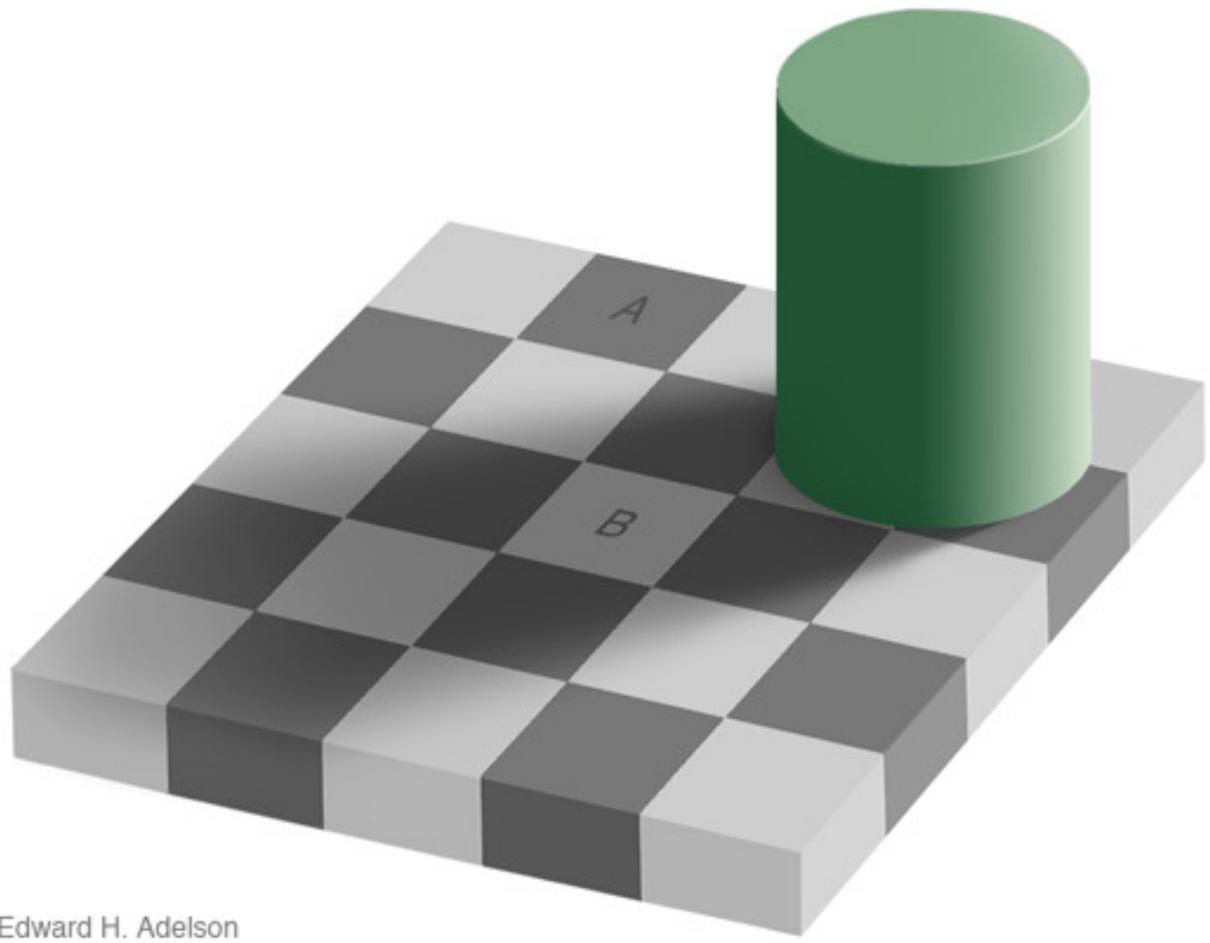
WE NOTICE COGNITIVE BIAS MUCH MORE IN OTHER PEOPLE THAN IN OURSELVES

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

A COGNITIVE BIAS







Edward H. Adelson

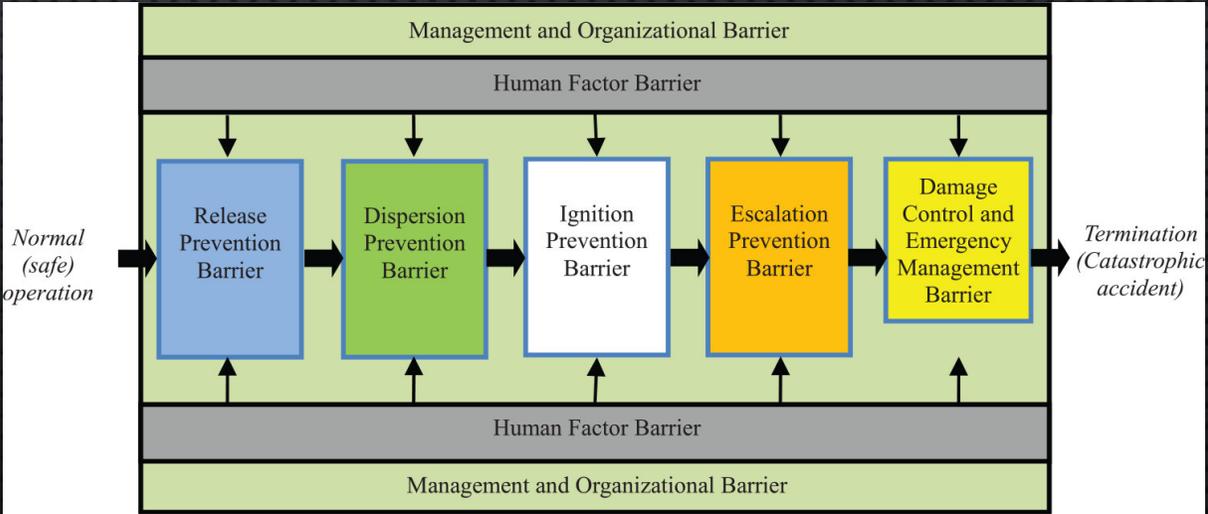
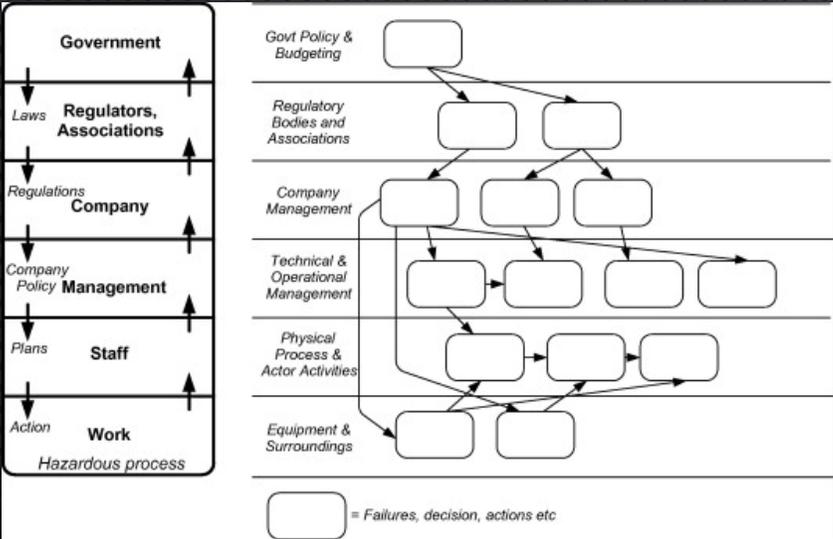
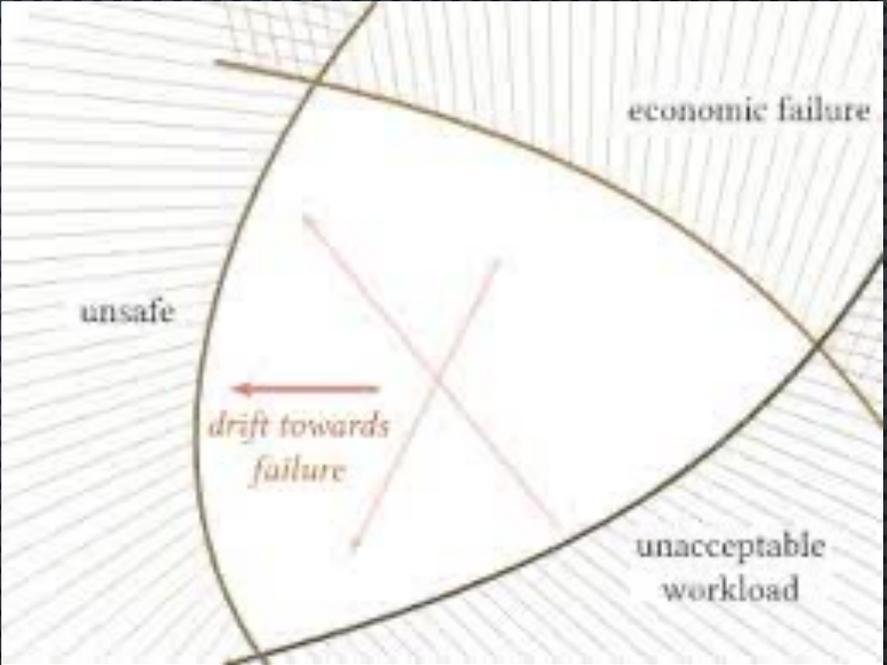
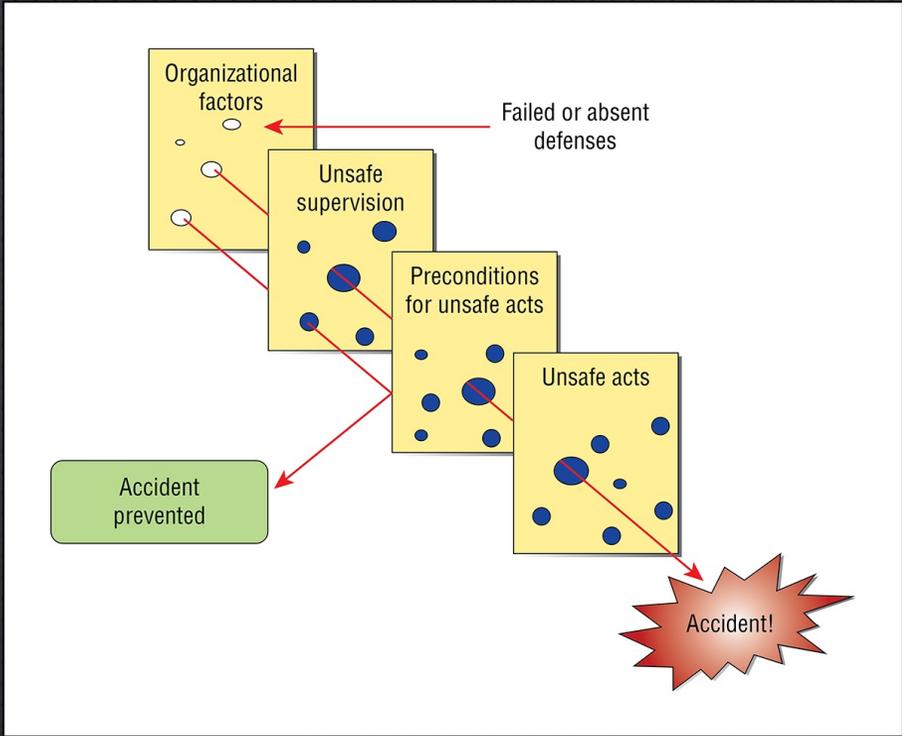
AWARENESS CAN'T FIX EVERYTHING

- 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

- [HTTPS://RISK-ENGINEERING.ORG/STATIC/PDF/SLIDES-SAFETY-MODELS.PDF](https://risk-engineering.org/static/pdf/slides-safety-models.pdf)
- [HTTPS://WWW.OHSBOK.ORG.AU/CHAPTER-32-MODELS-OF-CAUSATION-SAFETY/](https://www.ohsbok.org.au/chapter-32-models-of-causation-safety/)

BRACKETING

- USED IN QUALITATIVE RESEARCH
- MITIGATES POTENTIALLY DELETERIOUS EFFECTS OF PRECONCEPTIONS THAT MAY TAIN 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

BRACKETING

- USED IN QUALITATIVE RESEARCH
- ATTEMPTS TO SET ASIDE ONE'S OWN BELIEFS AND ASSUMPTIONS
- BRACKETING HELPS YOU RECOGNIZE—AND TEMPORARILY SUSPEND—YOUR PERSONAL JUDGMENTS AND BIASES WHILE CONDUCTING ANALYSIS

BRACKETING

USE BRACKETING:

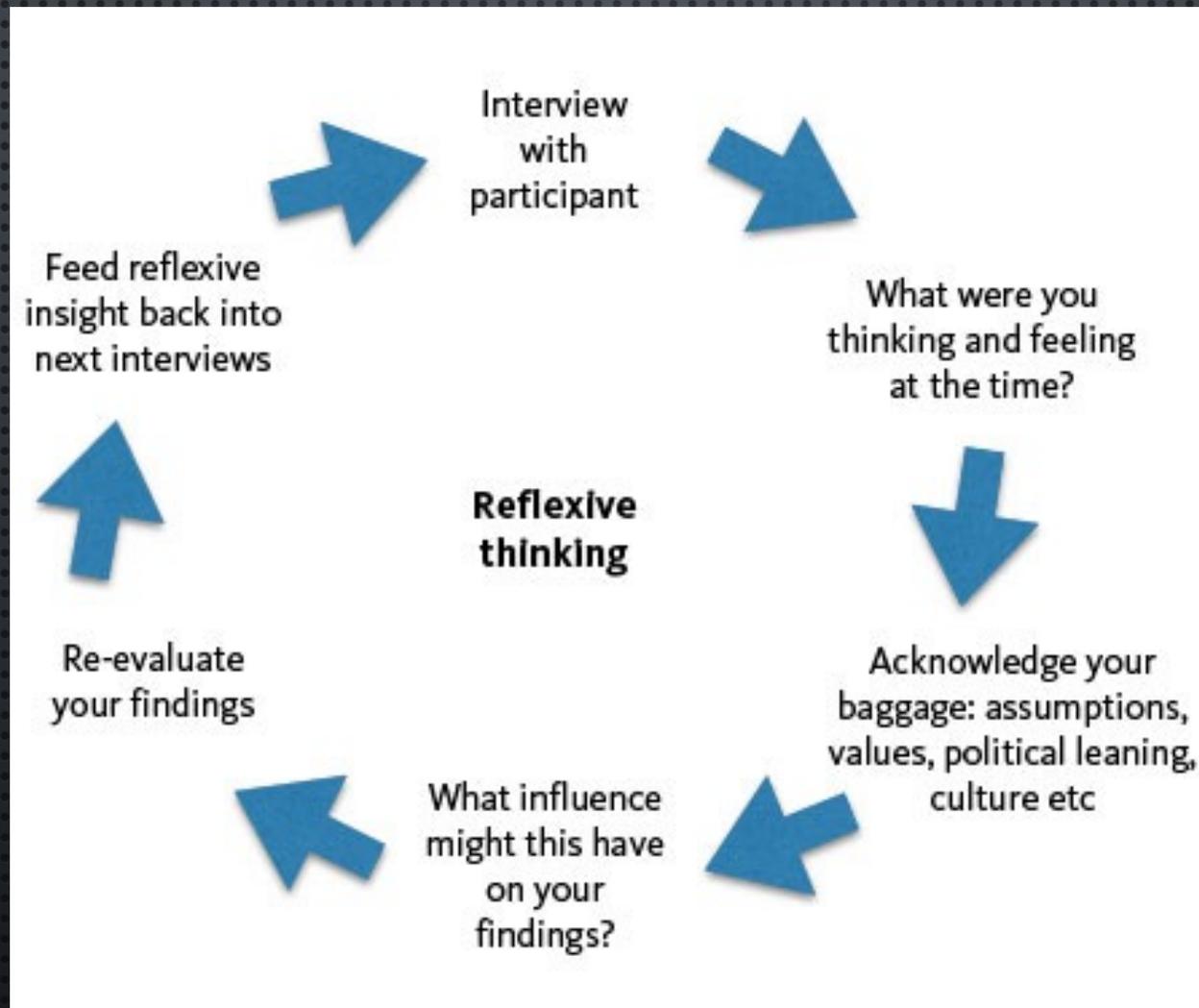
- EARLY IN YOUR INVESTIGATION PROCESS
- AS YOU PROCEED TO SUSPEND BIASES AND REFLECT ON THE SOCIAL, CULTURAL, AND HISTORICAL FORCES THAT SHAPE YOUR INTERPRETATION

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....



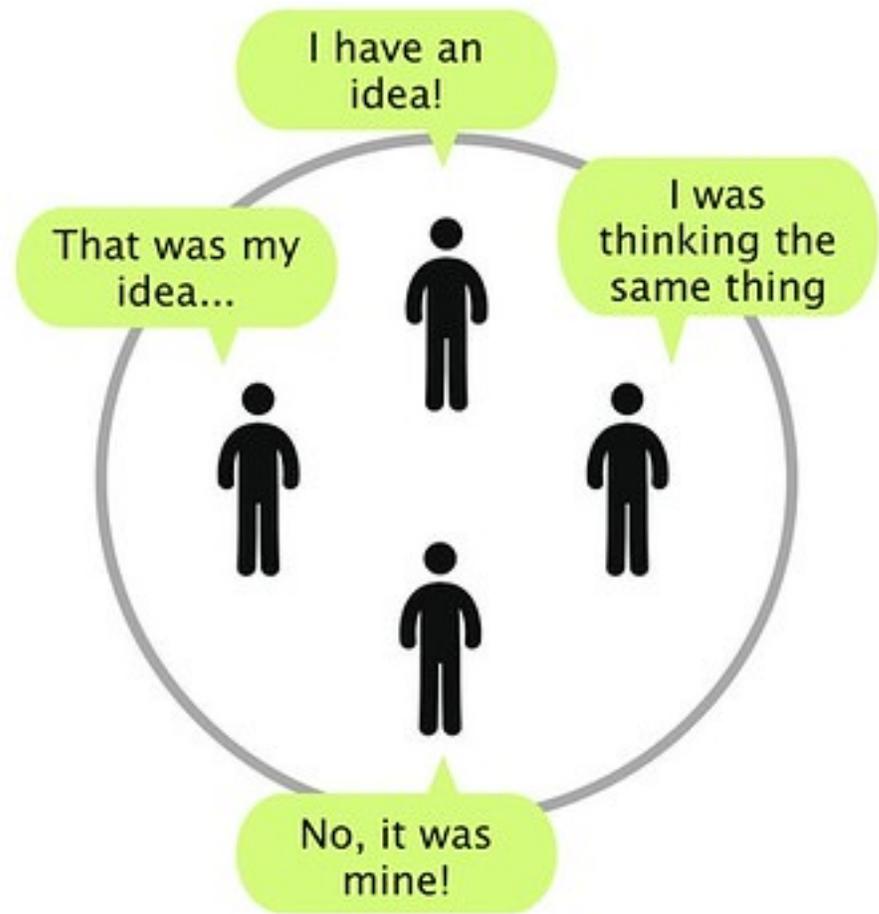
IN INTERVIEWS: DON'T ASSUME, ASK AND LISTEN



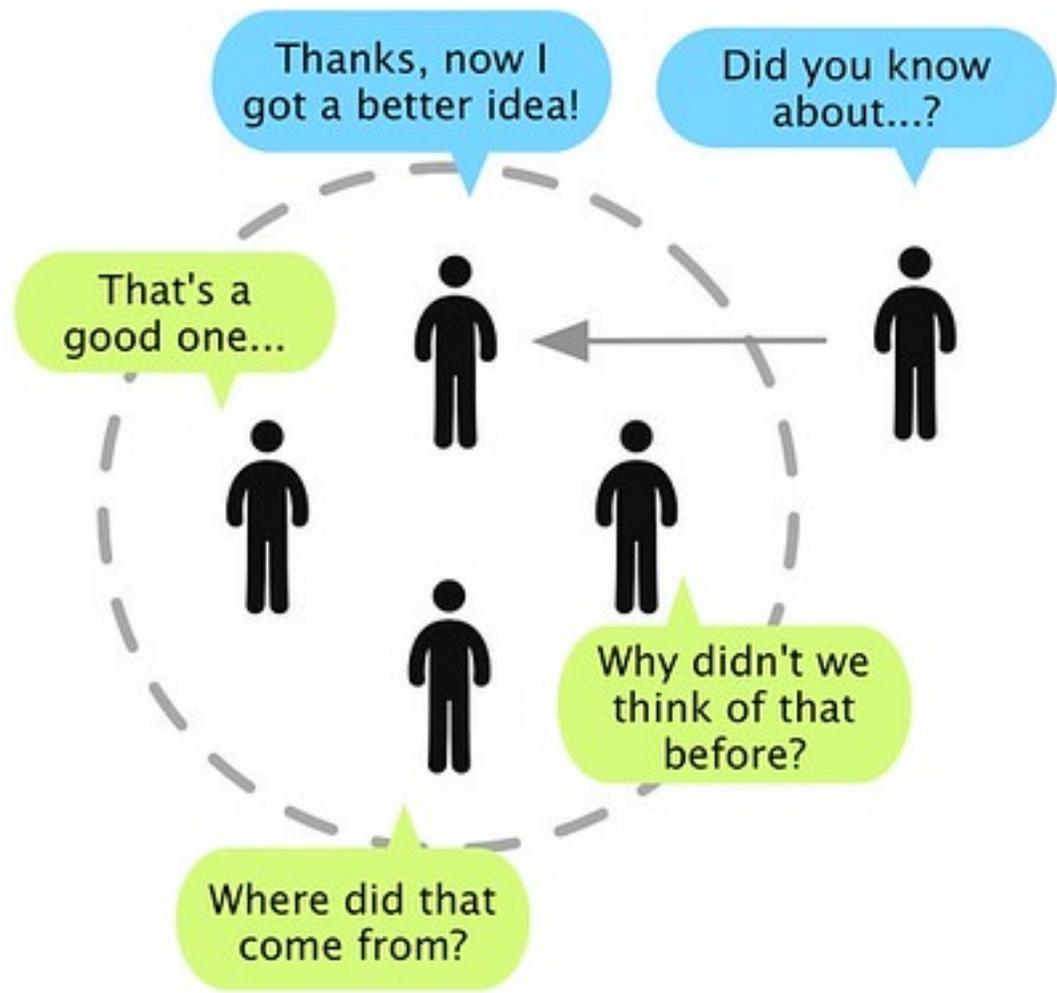
ASK “HOW?” NOT “WHY?”

- 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

Groupthink



Breaking groupthink



USE DIVERSE INVESTIGATION TEAMS

WHEN ALL **THINK** ALIKE,
THEN NO ONE IS THINKING

-WALTER LIPPMAN-



- 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.**



USE A DEVIL'S
ADVOCATE

“PEER REVIEW”

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.
Maddougall, 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

Challenge Assumptions



**Ask, 'What if the
Opposite were True?'**

Paul Sloane

BE YOUR OWN DEVIL'S
ADVOCATE

LIST OUT REASONS WHY YOUR
ORIGINAL HYPOTHESIS MIGHT
BE WRONG

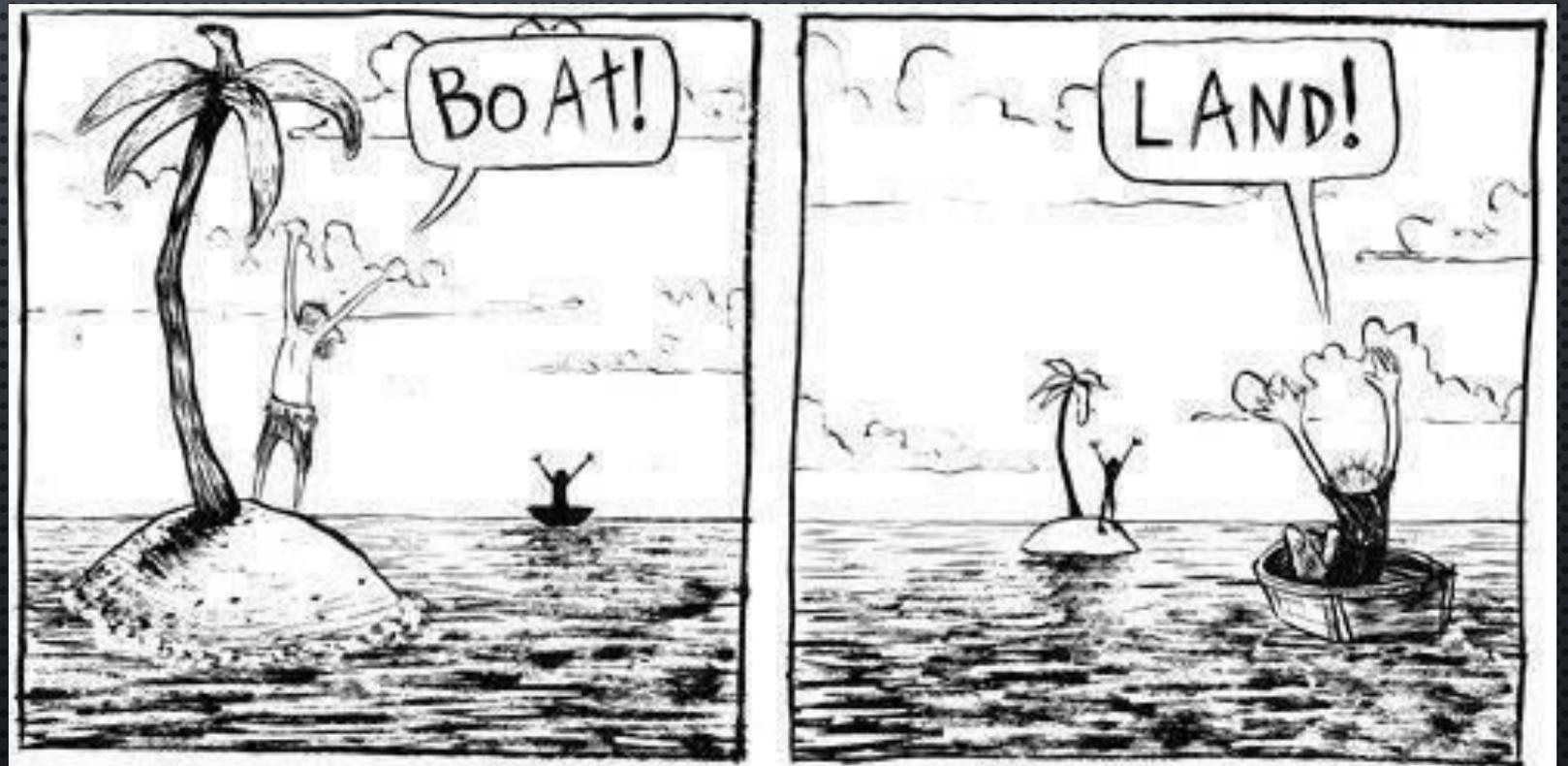
AVOIDING HINDSIGHT

- 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, ATEŞ ERDOĞAN, GEORGIA KEEN, KATHARINE LAWTON, LOUISE MCHUGH
- JOURNAL OF CONTEXTUAL BEHAVIORAL SCIENCE, 2015



CONNECT WITH ME!

JENNIFER SERNE ALLEN ON LINKEDIN