

HOP the New View

Resilient design

Understanding the humans in the system

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THE HOP MENTOR

Participants

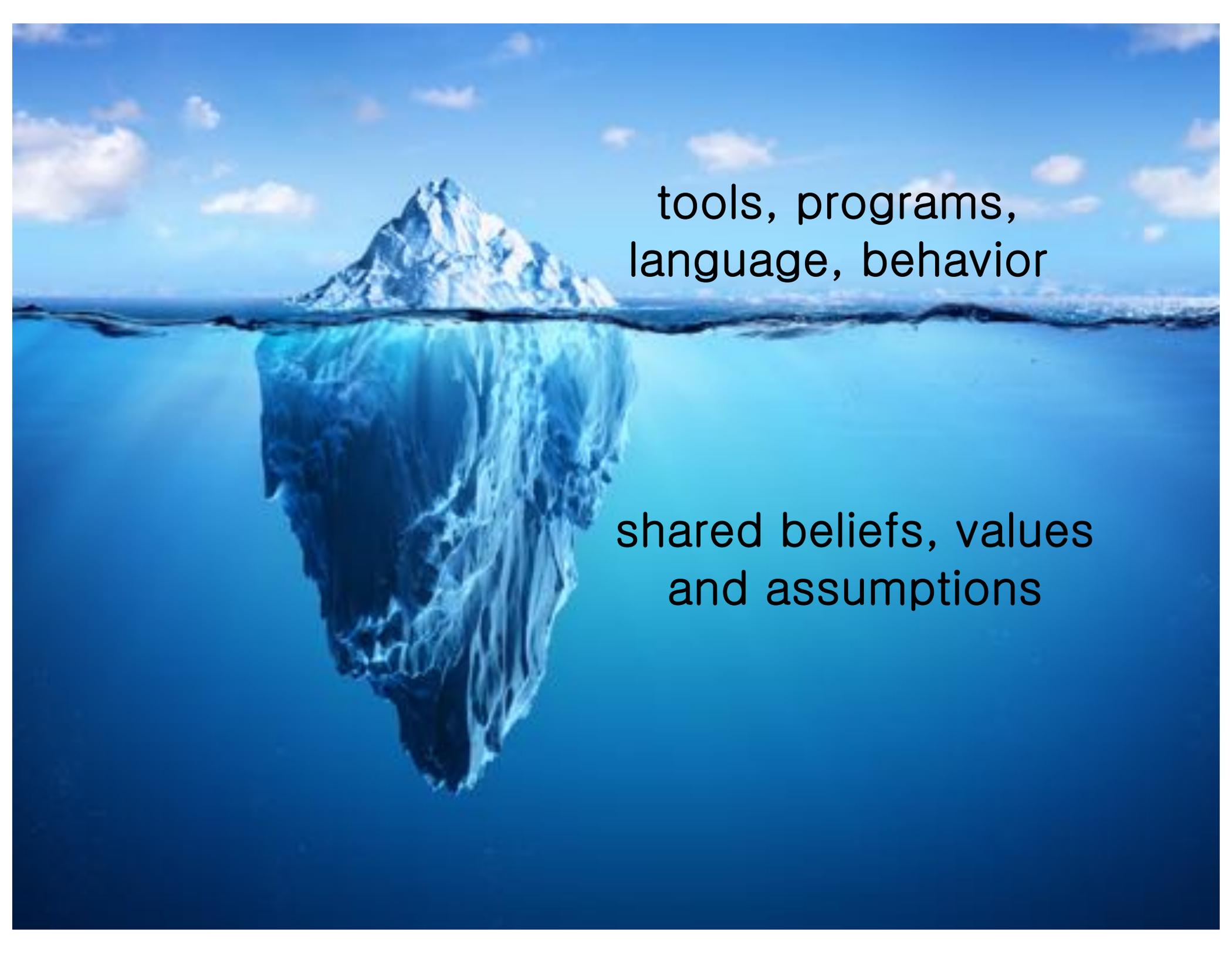
Have you been exposed to HOP concepts before?

What do you hope to gain from this session?

HOP is not a program...

...it is an operating philosophy.





tools, programs,
language, behavior

shared beliefs, values
and assumptions

5 HOP Principles

1. People Make Mistakes
2. Blame Fixes Nothing
3. Context Drives Behavior
4. Learning is Vital
5. How We React Matters



Our HOP journey...

...learning about my
assumptions

Questions
normally
asked...





What we didn't know...

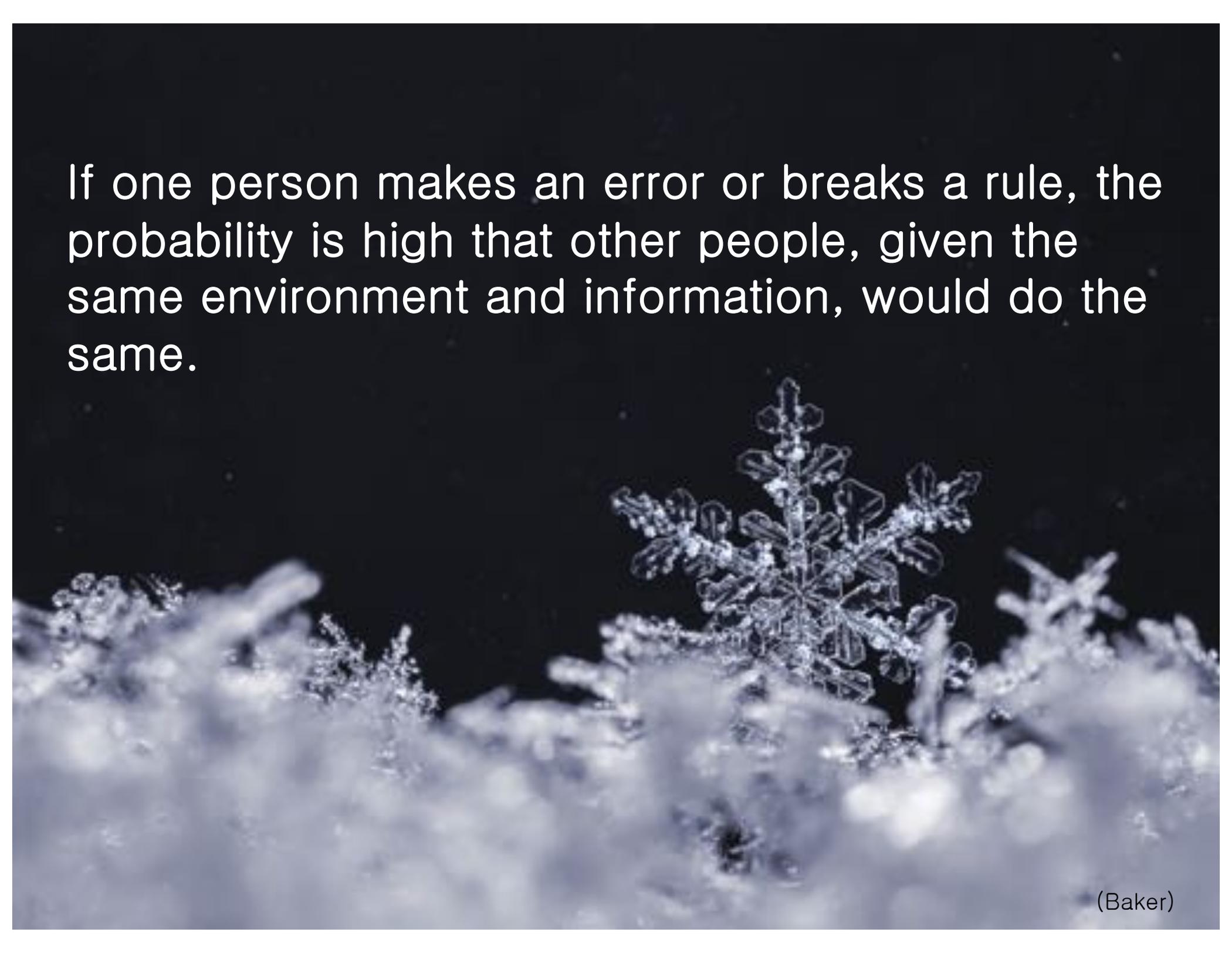
Assumption: the worker is the problem



To move beyond seeing the worker as the problem, I needed to learn a bit about what it means to be human...

1) People are not all that unique

If one person makes an error or breaks a rule, the probability is high that other people, given the same environment and information, would do the same.



(Baker)

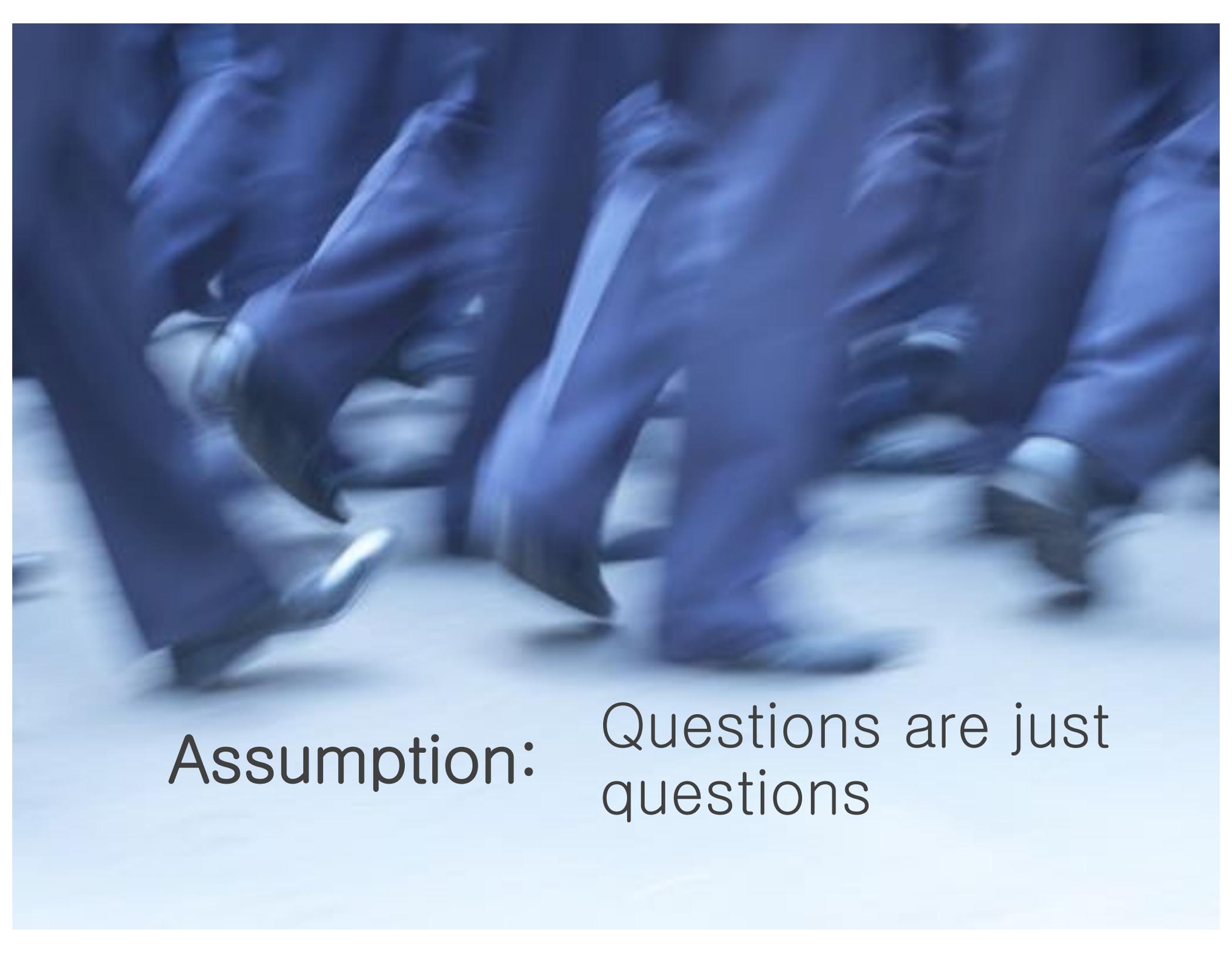
2) We are all the same
amount of “lazy”



We drift towards short-cuts...

...because we are hard wired
for energy conservation

(Baker)



Assumption:

Questions are just questions

Questions are fateful.

A significant difference in solution sets...

Traditional View

- Stand down about road rules
- Send employee to HR

New View

- Change intersection from 4 way stops to 2-way stops
- Put in globe mirrors

How I viewed the driver
affected my questions...

... my questions affected our
solutions...

...and our solutions affected the
probability of other people
being hurt

Management's response
to events matter...

The shift in thinking...

Traditional View

Focused on trying to “fix” the worker

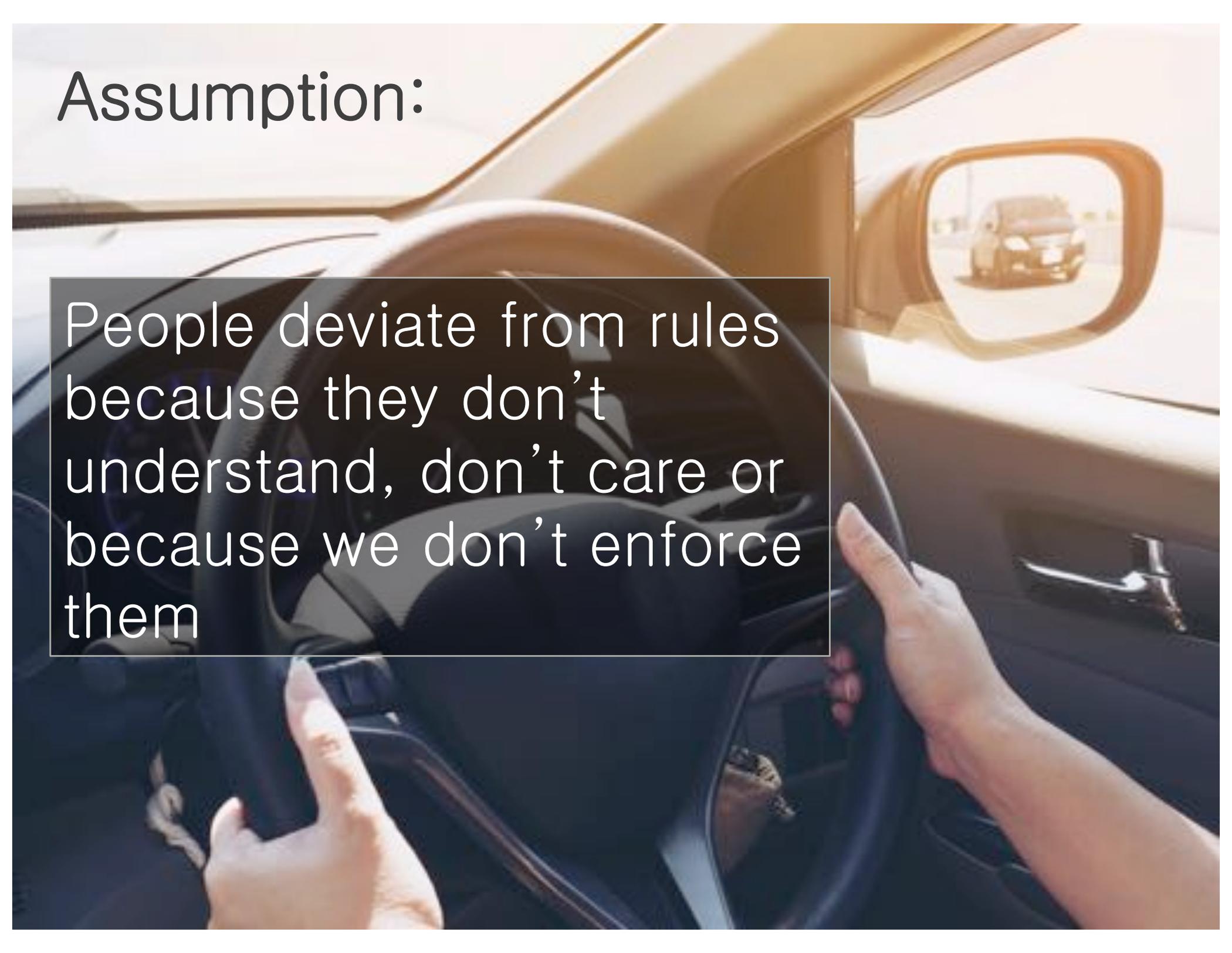
New View

Focuses on creating system improvements. Recognizes the worker is not the “problem.” Behavior that upon first glance seems like a “flagrant violation” is almost always a logical adaptation that most other people would make if put in a similar environment.



Assumption:

People deviate from rules because they don't understand, don't care or because we don't enforce them



If a rule broken is by a larger subset of the population
it is a

SYSTEM PROBLEM

Cost of entry to follow rule is too high

Process barrier

It is not possible to
“get work done” and
follow rule

Evaluate real risk with operational expertise

Change rule or process

Risk mismatch

Overly conservative rule
for low risk

Make the
right way
the easy
way

Assume
non-
compliance
and design
accordingly

Energy Sink

Not a valued social norm:
risk perceived as low,
effort to comply is high

Evaluate real risk with operational expertise

Culture
change
campaign

Forward
Accountability

Rearward
Accountability

Treated as an individual problem?

Response is normally subversive

The shift in thinking...

Traditional View

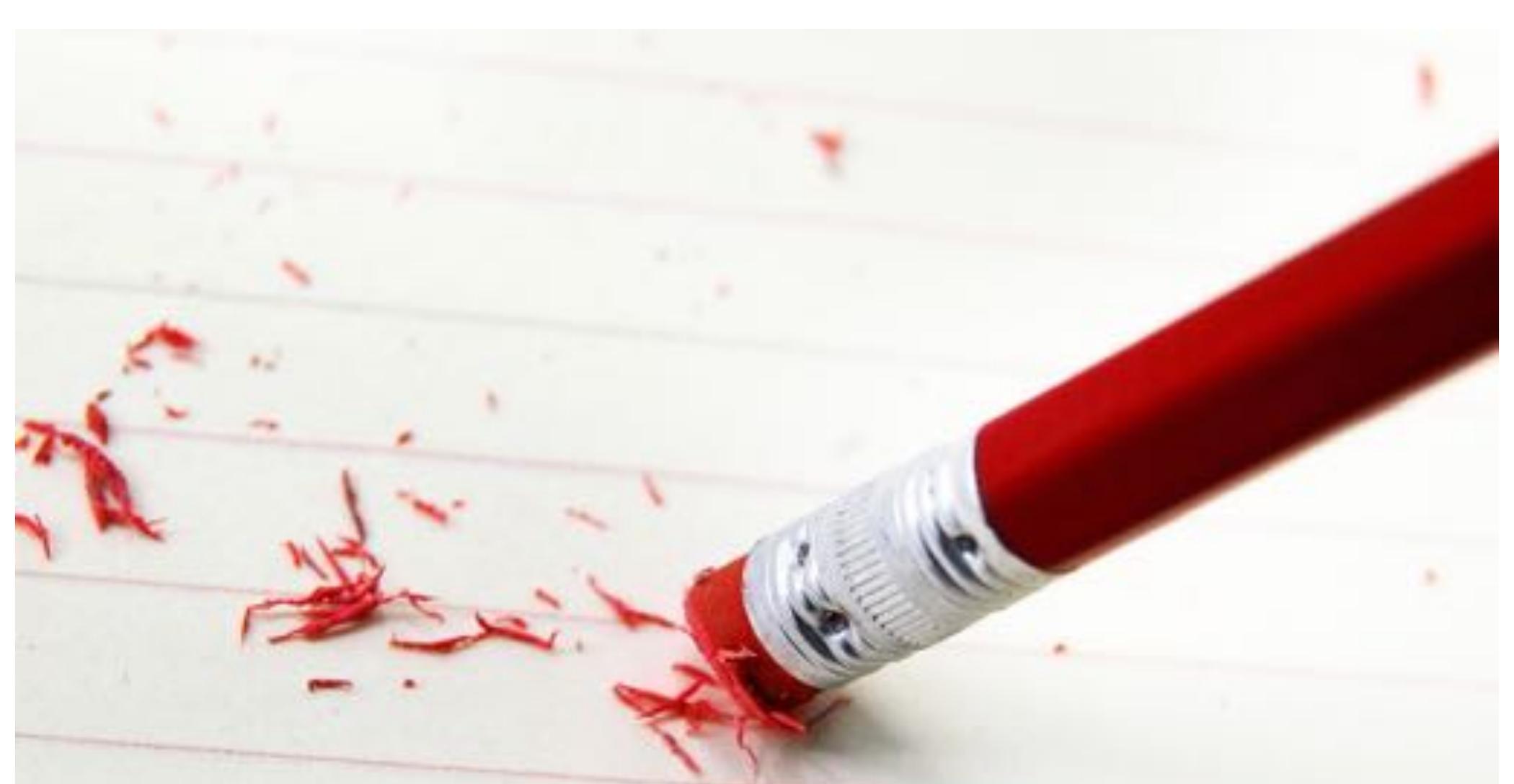
Reacted to most deviations the same way

New View

Recognizes the difference between forward accountability and rearward accountability. Seeks responses to failure that promote learning and improving to move beyond a compliance culture



Billy and the dock plate

A close-up photograph of a red pencil with a silver eraser tip, lying on a piece of white lined paper. The pencil is positioned diagonally from the bottom right towards the center. The eraser tip is surrounded by a pile of red pencil shavings. The background shows the horizontal lines of the paper.

Assumption: errors are choices – if you try hard enough you won't make them

How many times does the letter “f” appear in the following sentence?

How many
did you find?

Finished files are
the result of years
of scientific study
combined with the
experience of
many years

“Mistakes arise directly from the way the mind handles information, not through stupidity or carelessness.”

– Dr. Edward de Bono

Error is not a
choice.

Mistakes



Violations

Error likely situations are predictable...



Error Trap

Condition that makes it easy (likely) to make an error



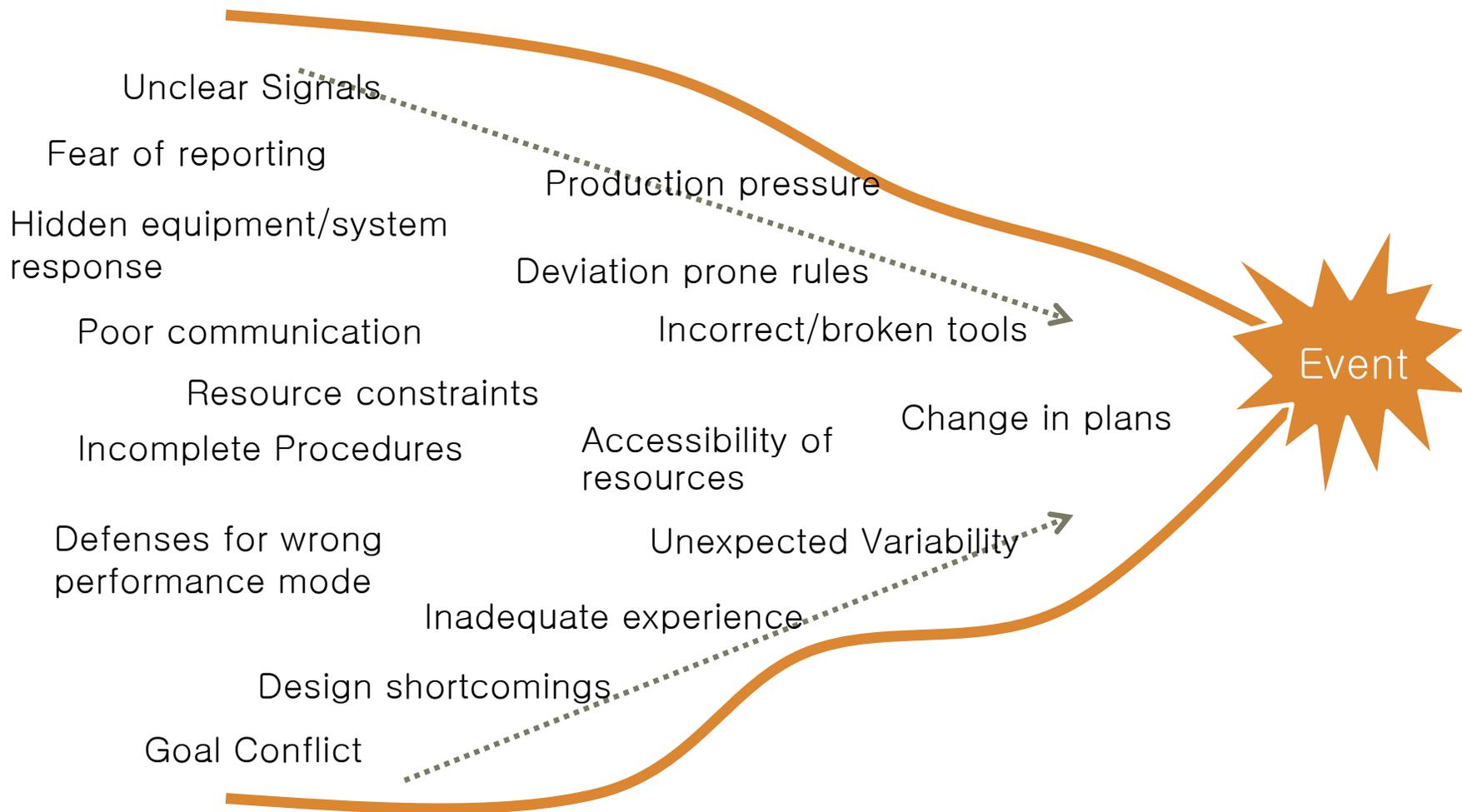
Provocative Error Trap

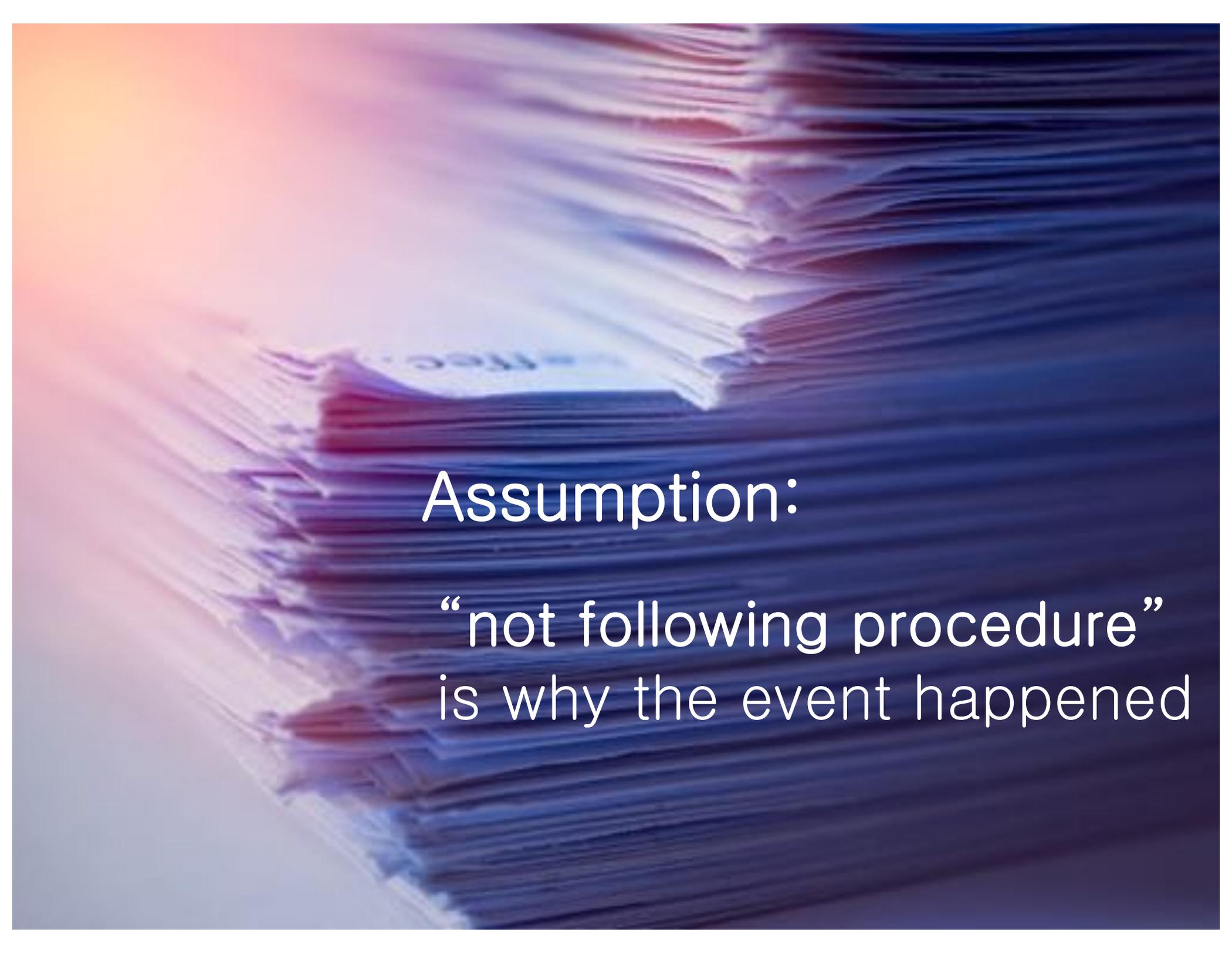
Easier to do wrong than right



Other error traps?

Common Error Traps



A stack of papers is shown from a low angle, creating a sense of depth. The papers are slightly blurred, and the background is a gradient of blue and purple. The text is overlaid on the stack.

Assumption:

“not following procedure”
is why the event happened

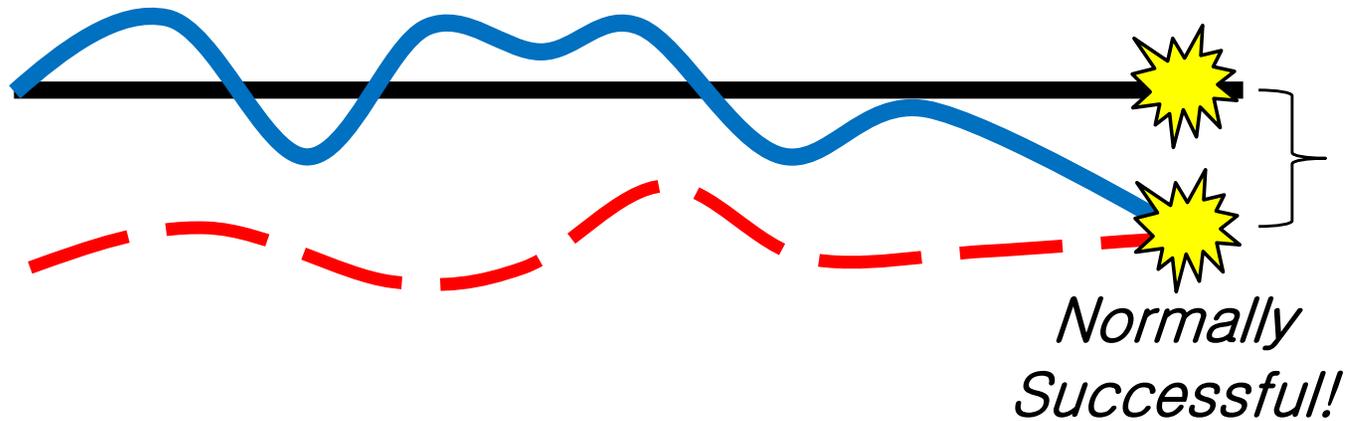


Procedures are
important...

But they are **not sufficient**
enough to create safety or quality

Our organizations have become
complex-webs of **procedures**
that are **incomplete and**
difficult. (Conklin)

Work as imagined vs Work in practice



(Conklin / Edwards)

Saying an event was caused by error or not following procedure is like saying an object fell due to gravity:

it's always true, it just doesn't tell us
anything.

(Conklin, 2017)



The shift in thinking...

Traditional View

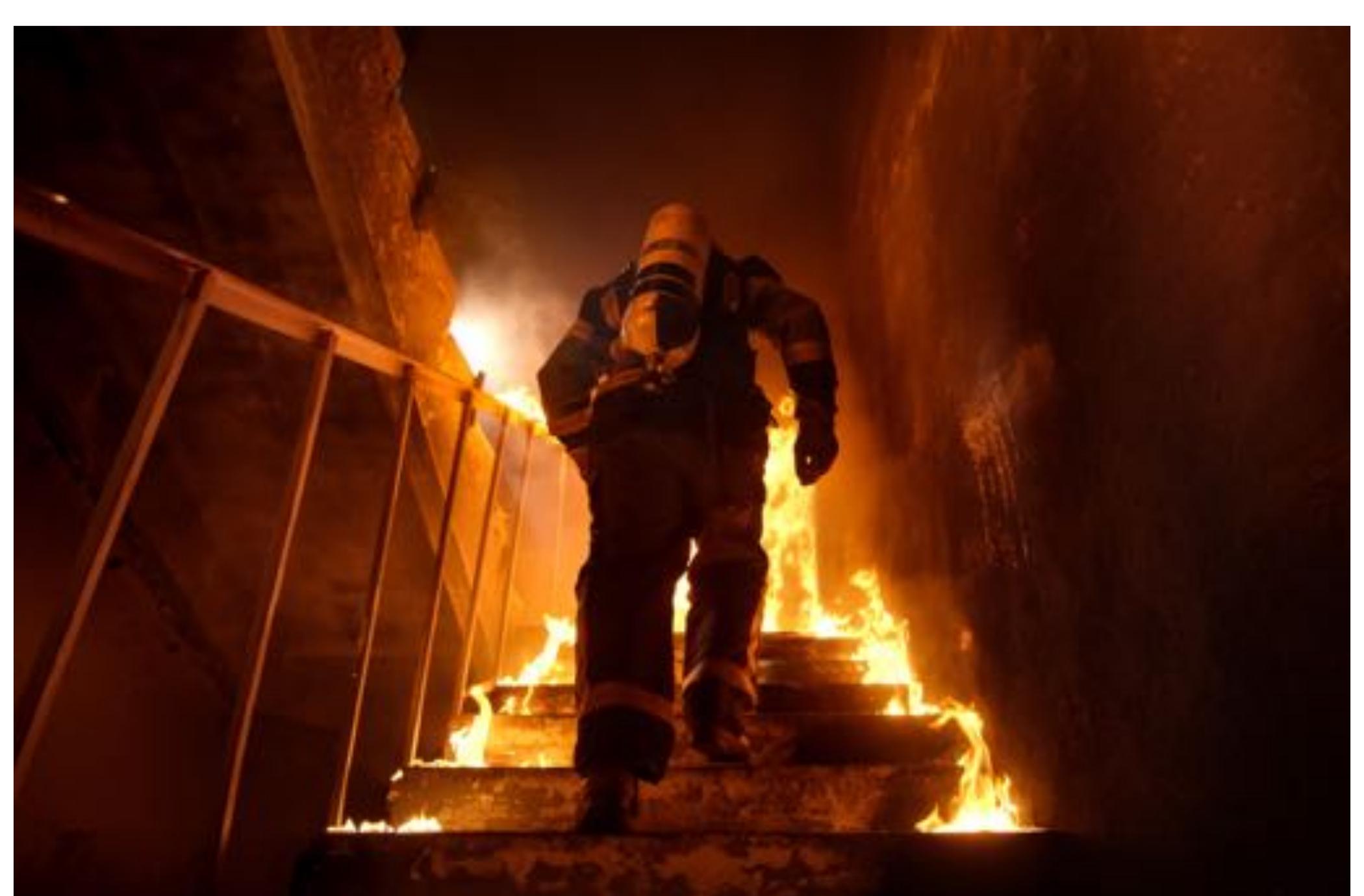
Sought to constrain behavior to a procedure to remain safe

New View

Recognizes workers complete/fill-in procedures to meet the variable conditions in real world and adaptations from written instruction are often necessary for success

Kenny the
alligator
wrestler





What about an injured firefighter?

Is complacency a choice?

Our biases can make us believe
people are “worse” than they
are...

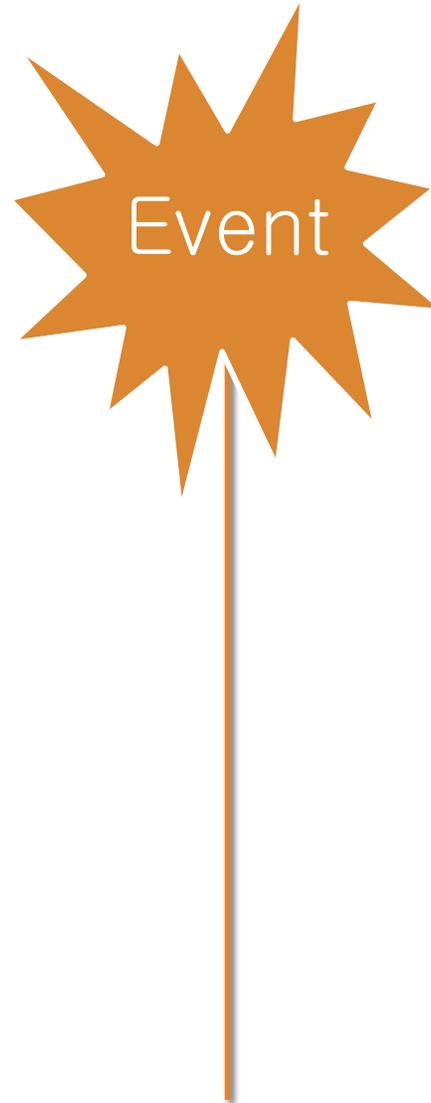
Assumption: they “should have known better”



**Feels
Overly
cautious**

The Gray Area
uncertain
interpretation of
work

**Feels
Too
risky**



Clearly the
“right way”

Clearly the
“wrong way”

It is only AFTER an event that safety
and quality become clear

(Conklin, 2012)

Fundamental
attribution error

The Challenge:

Not to let

Hindsight &

Fundamental Attribution Error

bias our judgment of the

pre-event context.



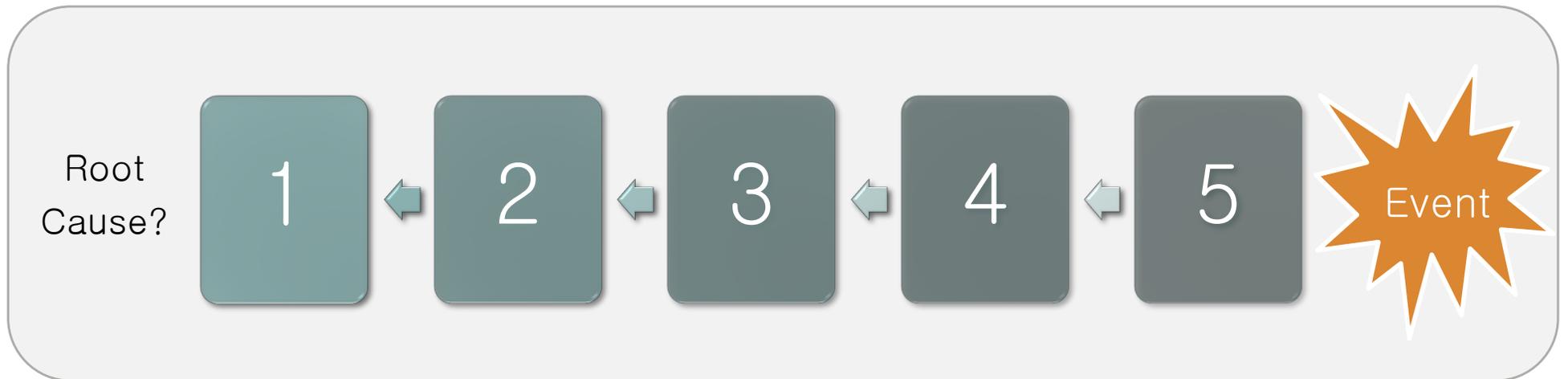
Tricycle near-miss

To get to better solutions,
I needed to learn a bit
about failure...

Assumption:
There is a root cause

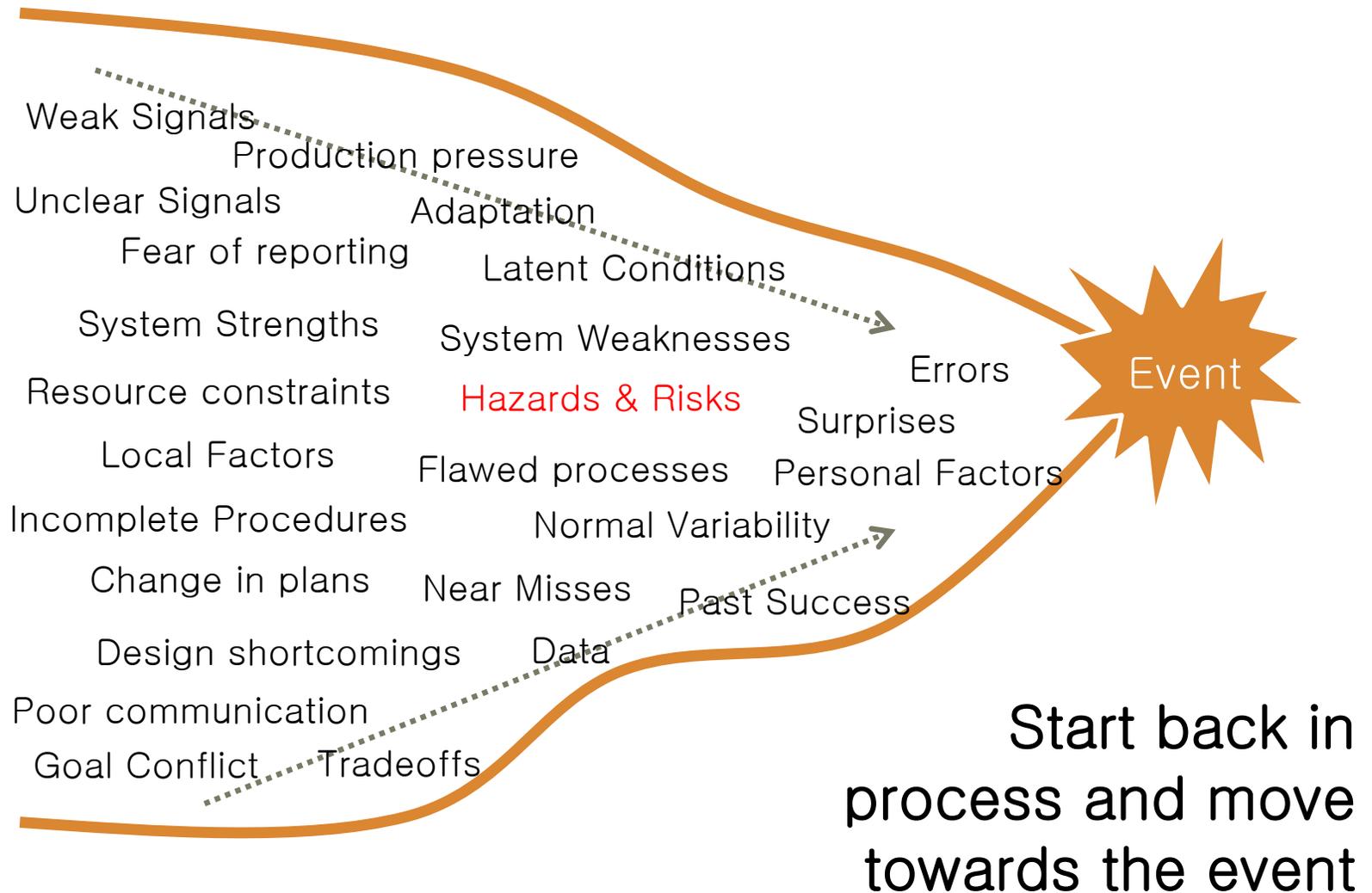


Our traditional approach: *look for root cause*

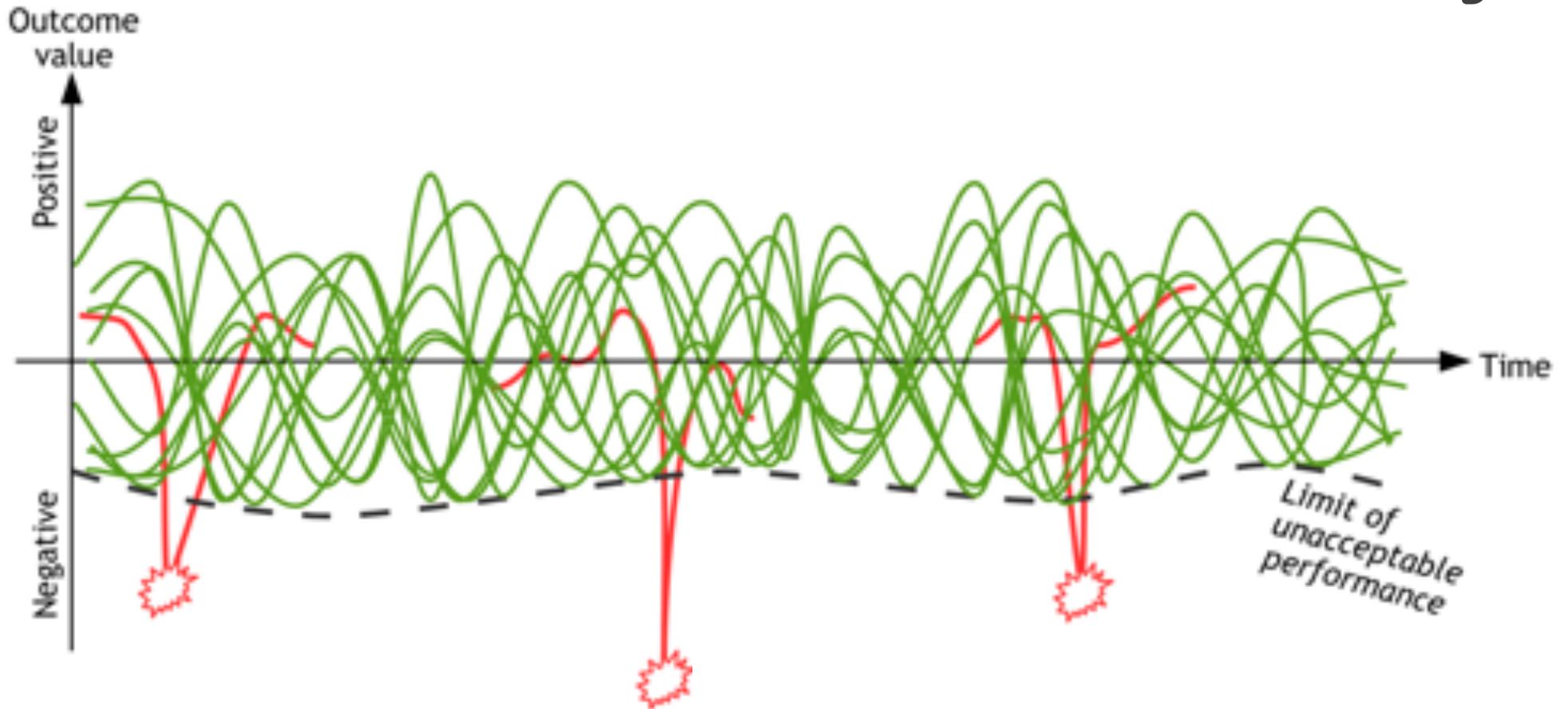


The problem is, the failure was **not linear**...
...and there is **never** one root cause.

Failure looks more like...



Failure is a combination of normal variability



(Hollnagel, 2018)

Question purpose...



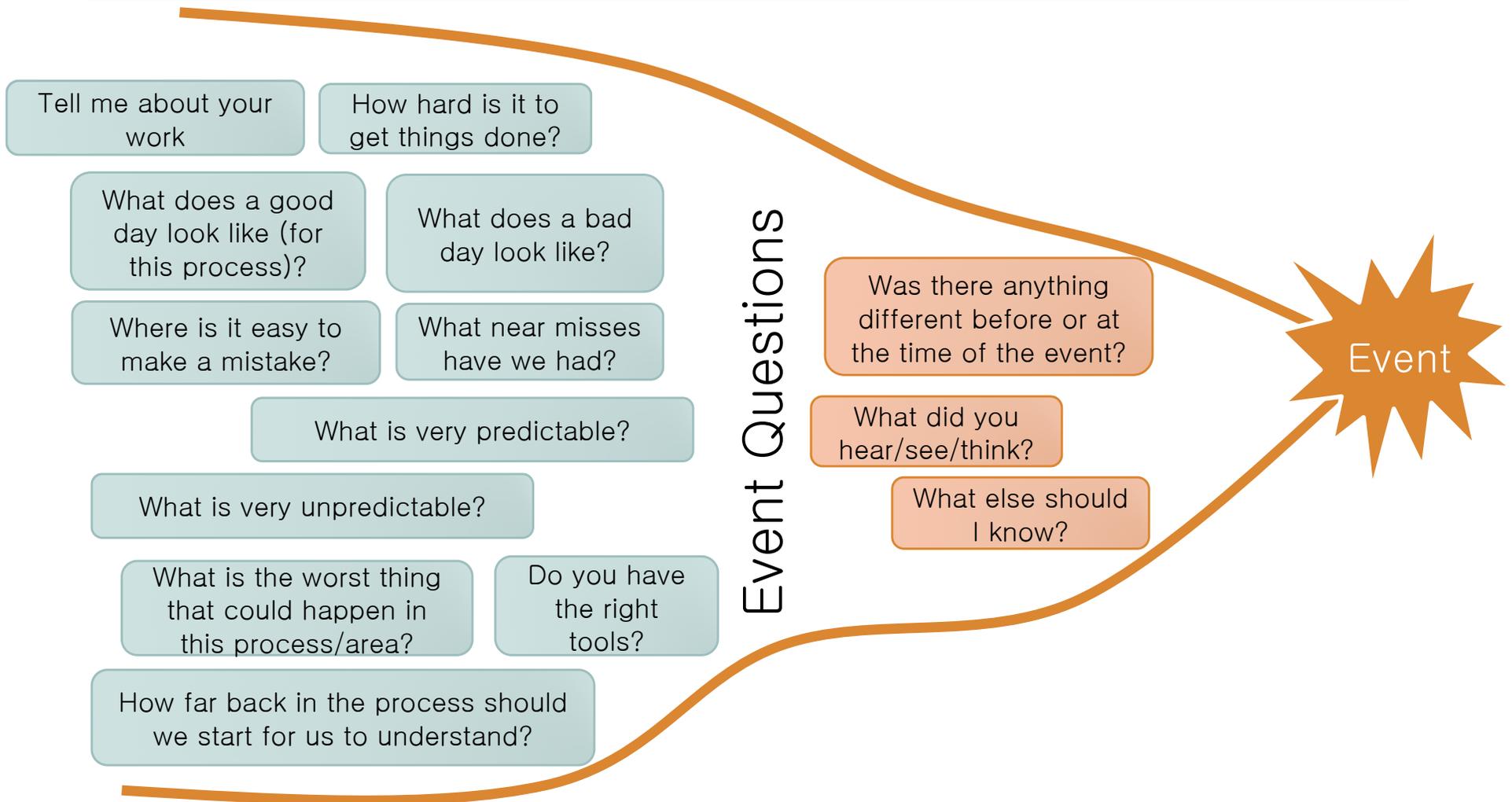
Question purpose...

Playing 20 questions
so we can “figure it out”....?

OR

Asking people
describe it for us
so we can LEARN?

Operational Learning Questions



The shift in thinking...

Traditional View

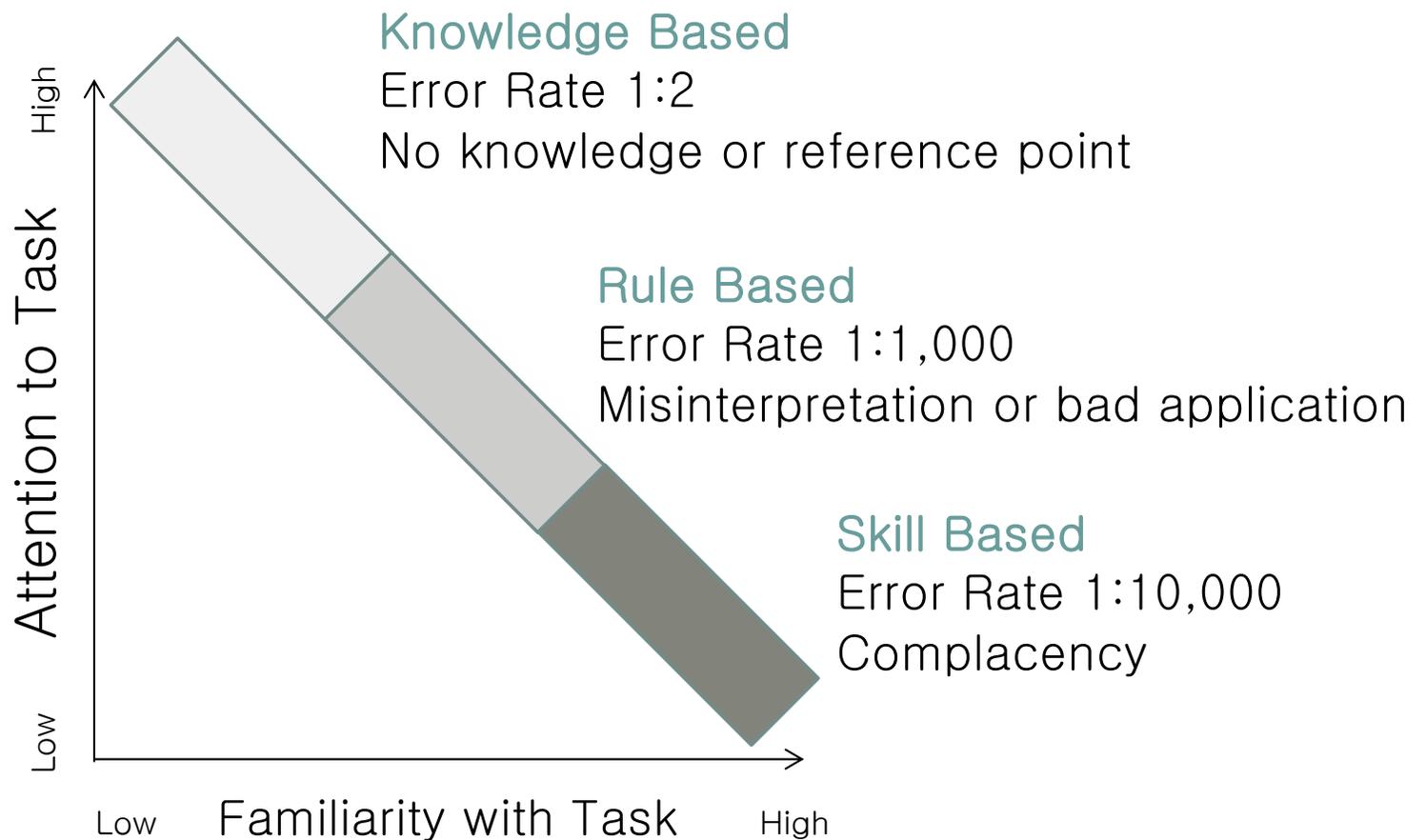
Sought monolithic
(linear, root
cause)
explanations for
events

New View

Recognizes failure is a combination
of normal variability and there is no
one root cause unless a system is
purely mechanical

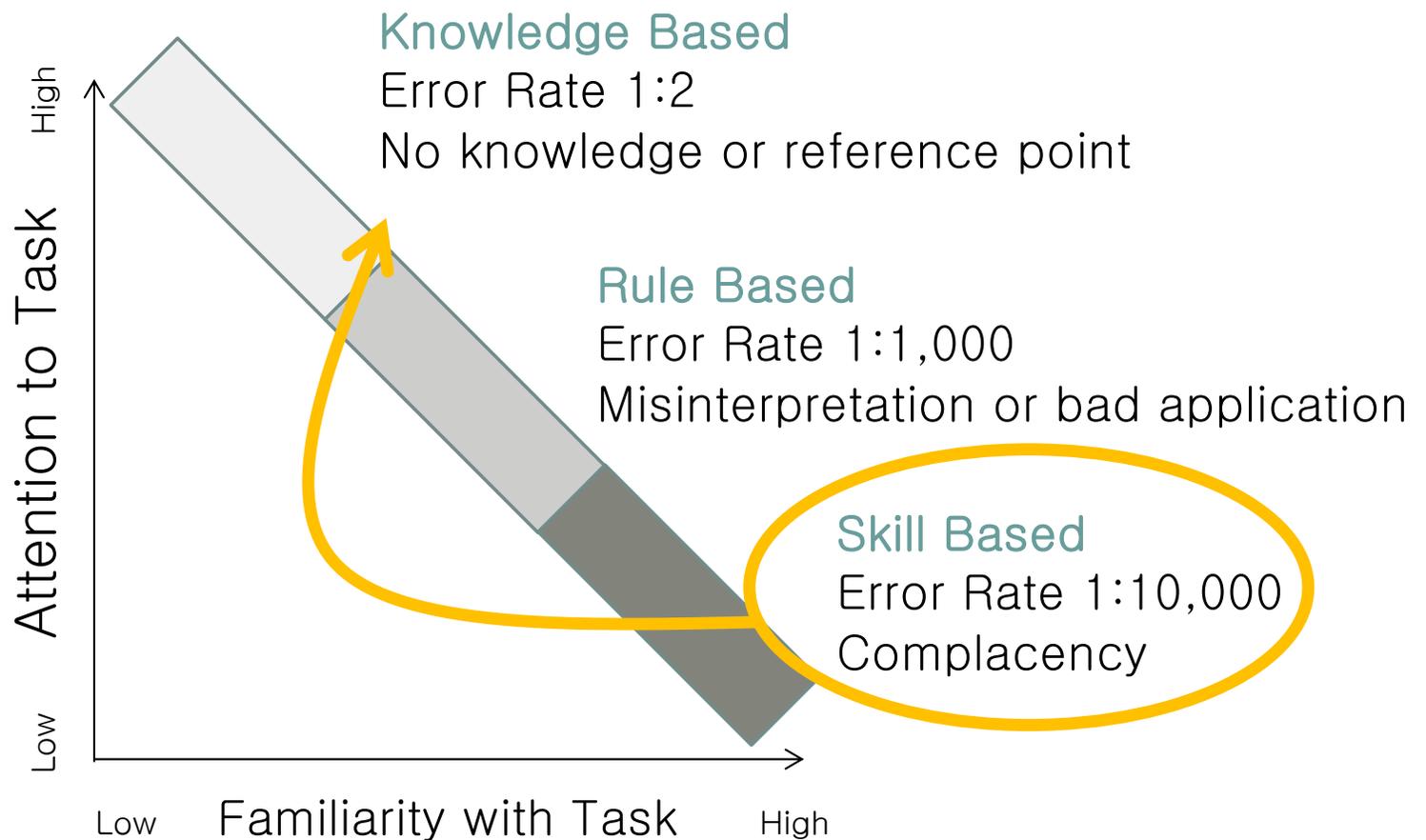


Performance Modes

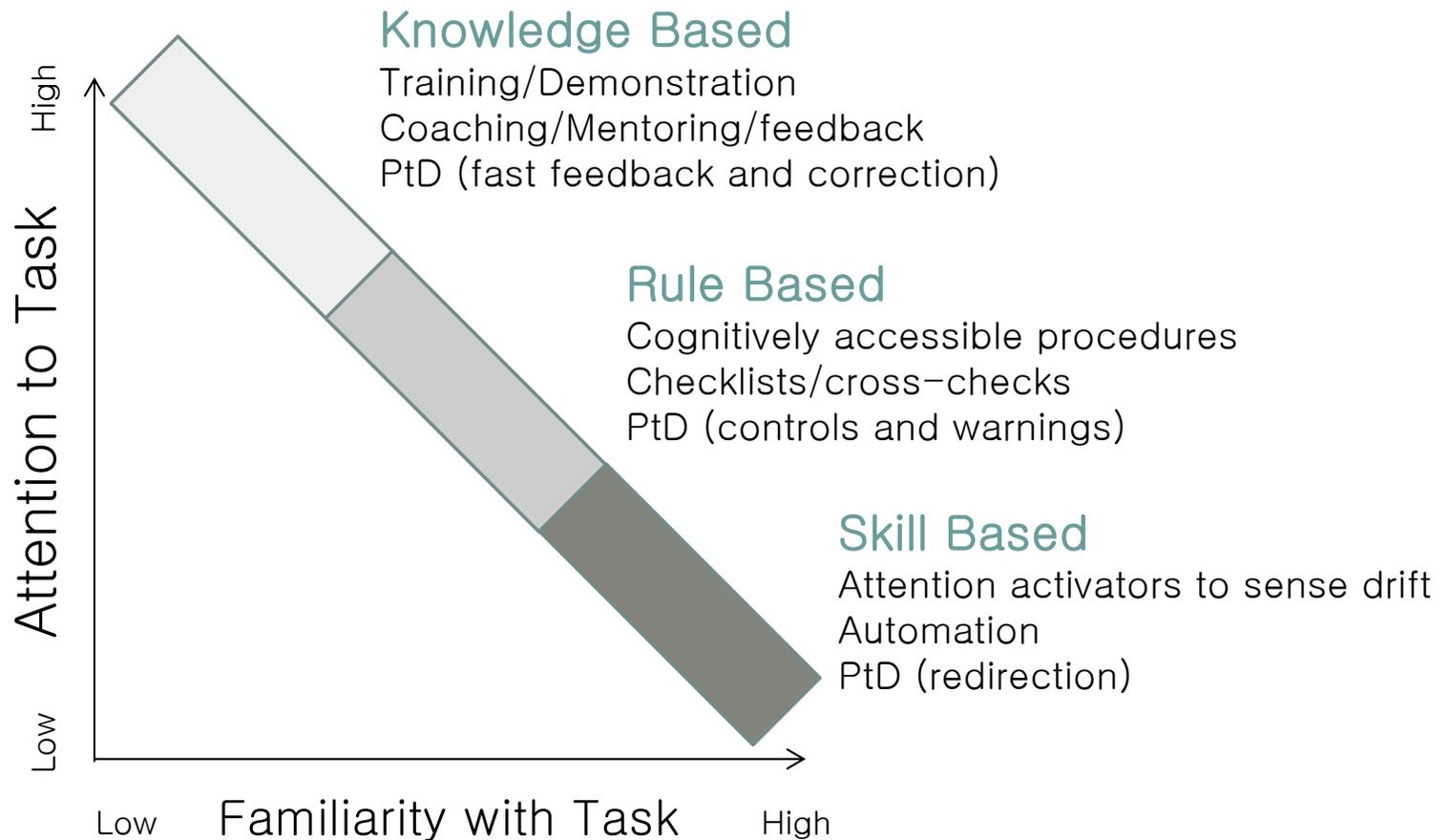




Performance Modes



Right Defense for the right mode



Defense by mode

Knowledge Based

Training/Demonstration

Coaching/Mentoring/feedback

PtD (fast feedback and correction)

Rule Based

Cognitively accessible procedures

Checklists/cross-checks

PtD (controls and warnings)

Skill Based

Attention activators to sense drift

Automation

PtD (redirection)



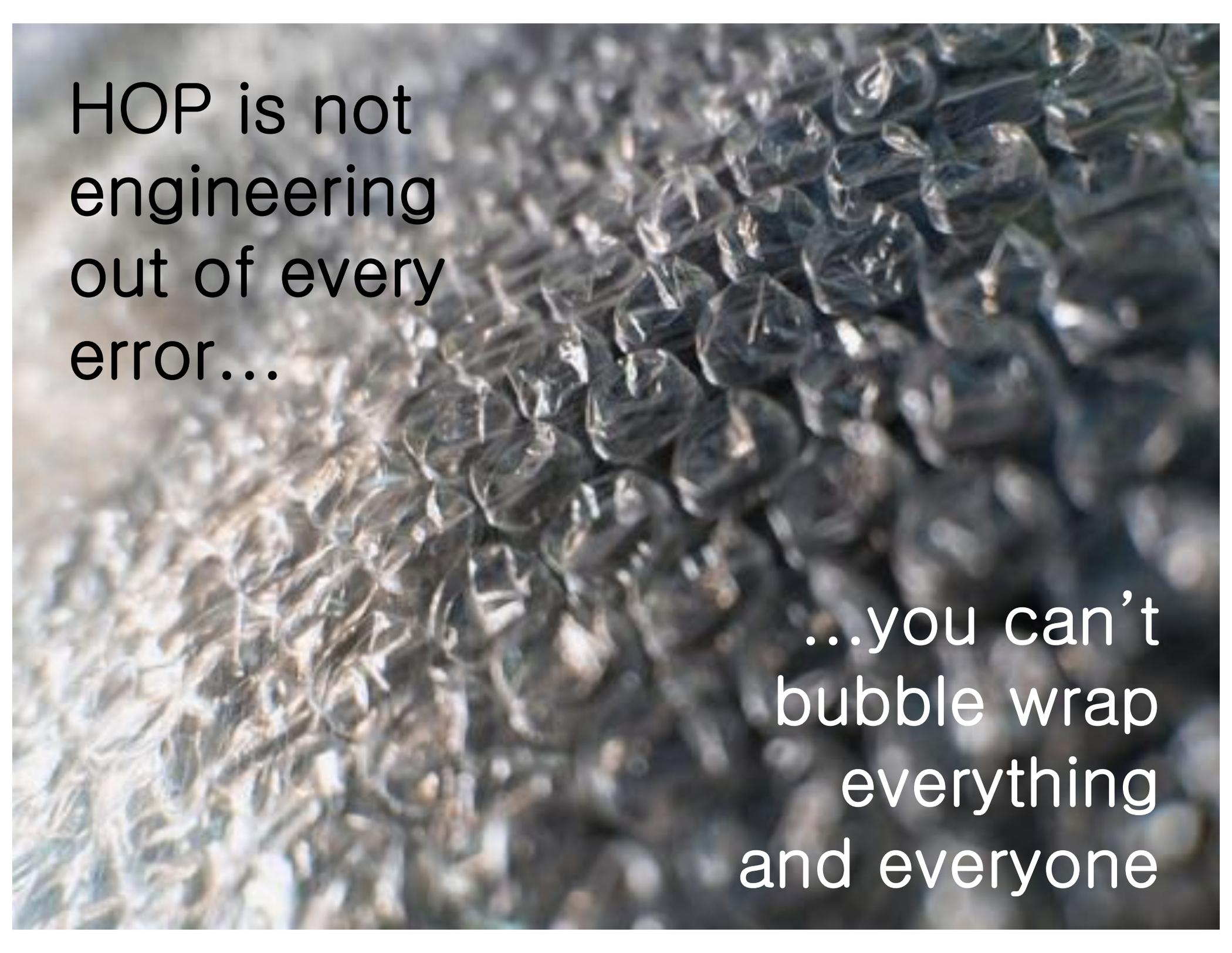
Hierarchy of Controls...

- Elimination
- Substitution
- Engineering Controls
- Administrative Controls
- PPE

More focused on ownership
and effectiveness



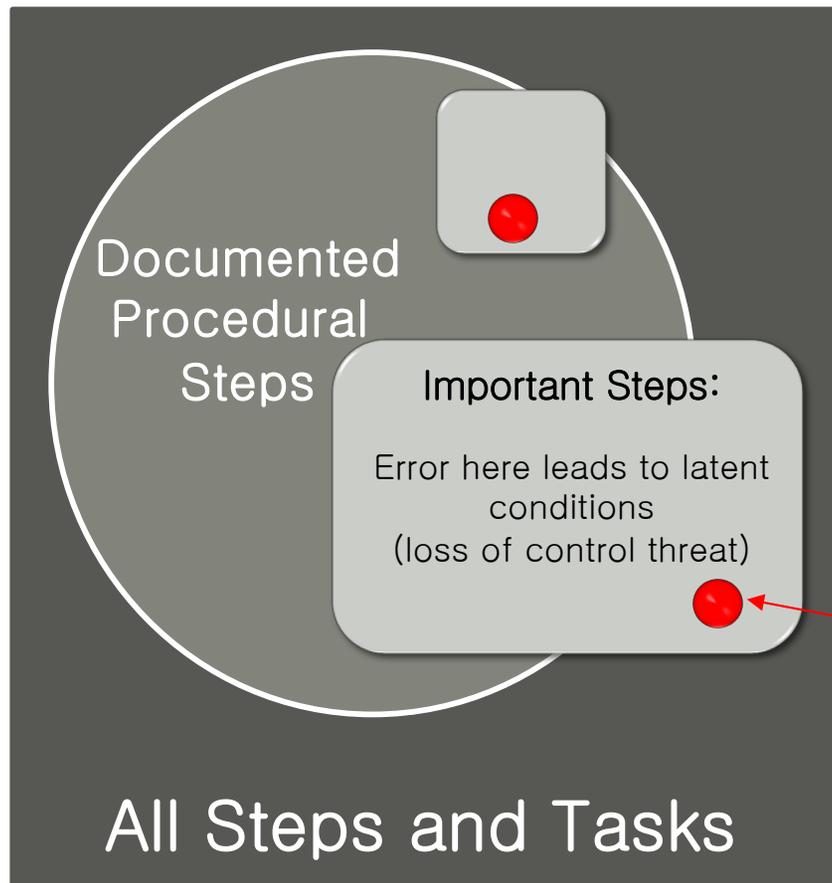




HOP is not
engineering
out of every
error...

...you can't
bubble wrap
everything
and everyone

Non-recoverable error



Non-recoverable step:
Point of no return

Error in important steps
before **non-recoverable**
leads to unacceptable
consequences





Assumption:

good safety and quality performance is about controlling whether or not people make mistakes

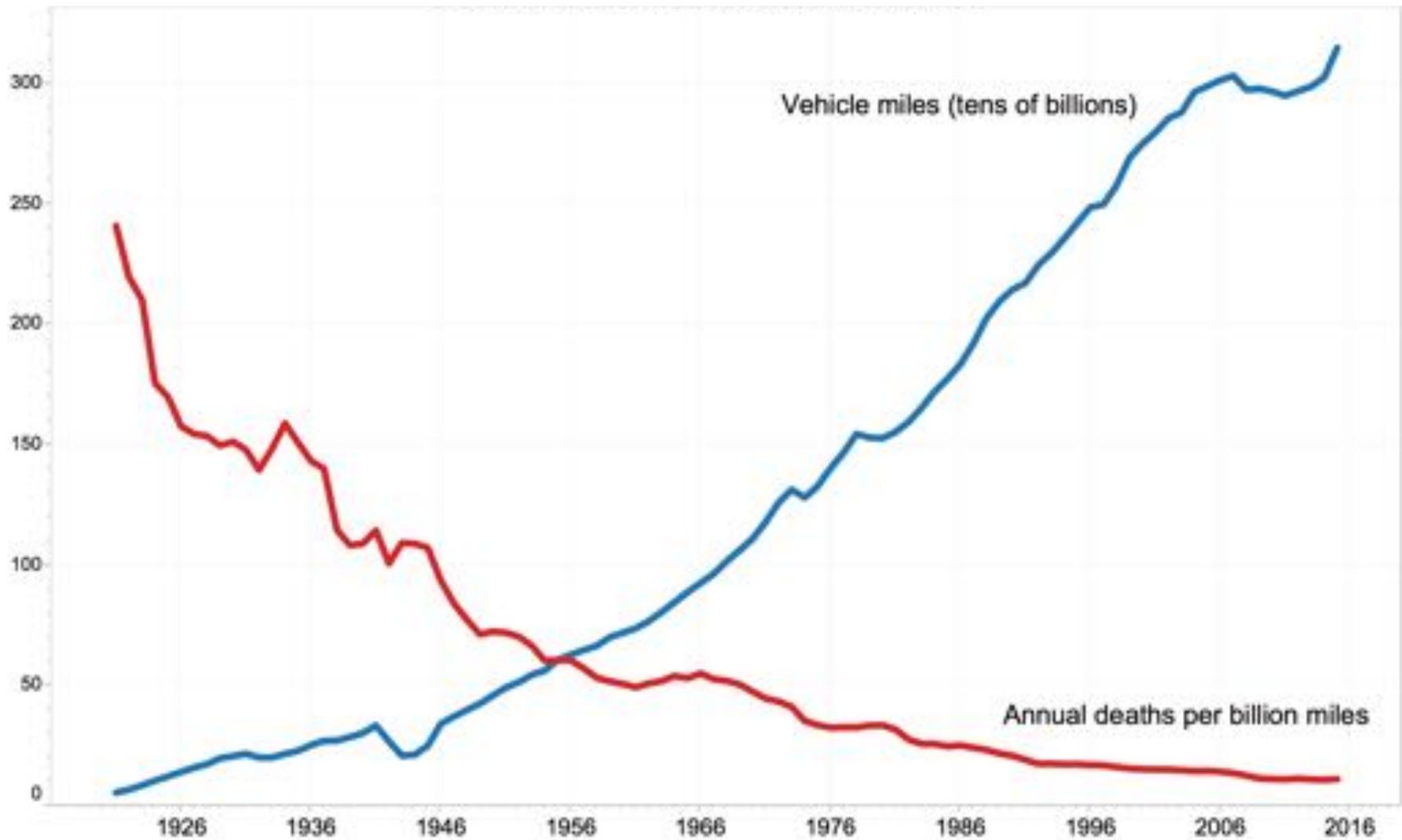
Great performance is not the
absence of errors...

...it's the presence of defenses

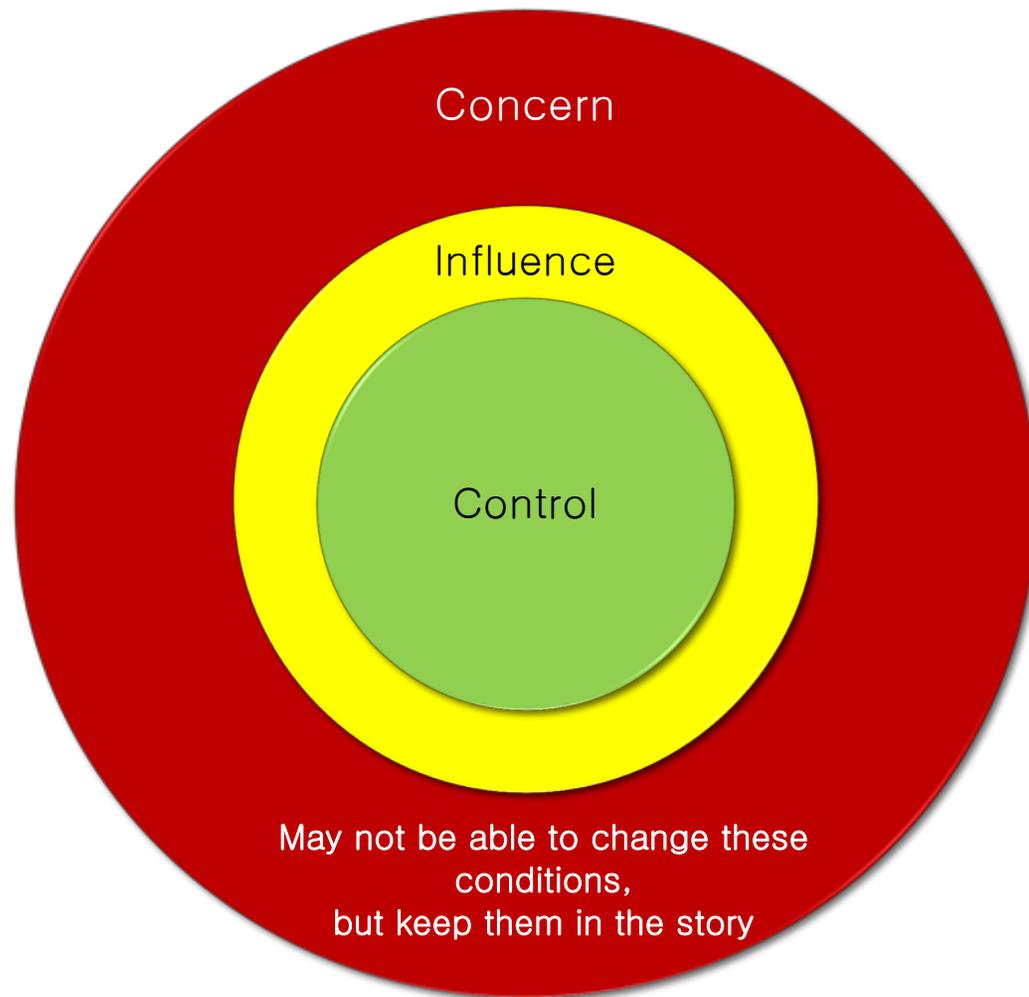
(Conklin, 2012)



US vehicle miles travels and proportionate fatality rates



Sphere of control





The shift in thinking...

Traditional View

All errors can be prevented

New View

Recognizes all errors cannot be predicted, and therefore not prevented. Instead we should strive to maintain systems that are resilient to error



The Facebook Fiasco

Improve the process?
Improve the person?

A close-up photograph of a hand placing a wooden block on top of a stack of other wooden blocks. The blocks are scattered on a white surface, possibly a desk, with a pencil and some papers visible in the background. The lighting is soft and natural, coming from a window on the left. A dark brown horizontal band is overlaid across the middle of the image, containing white text.

“You cannot manage
what you do not understand.”

(E. Jacques)





We really only have two options:

Option 1: **Blame and Get Even**

Option 2: **Learn and Get Better**

–Adapted from Conklin

The shift in thinking...

Traditional View

Sought monolithic (linear, root cause) explanations for events

Sought to constrain behavior to a procedure to remain safe

Focused on trying to “fix” the worker

All errors can be prevented

Reacted to most deviations the same way

Sought to improve safety through analyzing what failed

New View

Recognizes failure is a combination of normal variability and there is no one root cause (unless a system is purely mechanical)

Recognizes workers complete/fill-in procedures to meet the variable conditions in real world and adaptations from written instruction are often necessary for success

Focuses on creating system improvements. Recognizes the worker is not the “problem.” Behavior that upon first glance seems like a “flagrant violation” is almost always a logical adaptation that most other people would make if put in a similar environment.

Recognizes all errors cannot be predicted, and therefore not prevented. Instead we should strive to maintain systems that are resilient to error

Recognizes the difference between forward accountability and rearward accountability. Seeks responses to failure that promote learning and improving to move beyond a compliance culture

Recognizes the key information needed to improve safety
resilience exists in understanding normal work

It's important to remember...

The worker is not the problem
to be solved...

...the worker is the problem
solver

(Dekker)

“...blame is the enemy of understanding.”

(Andrew Hopkins)

When we believe we know the
answer...

...we stop asking questions
...we stop listening
...we stop learning

(Baker/Edwards)

The power to ask the right questions...

...comes from acknowledging that you don't know the right answer.

(Baker/Edwards)

“I have never been especially impressed by the heroics of people convinced they are about to change the world. I am more awed by those who struggle to make one small difference.”

(Ellen Goodman)

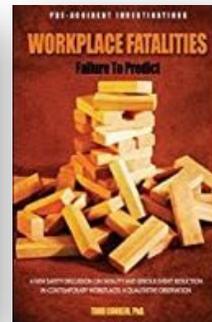
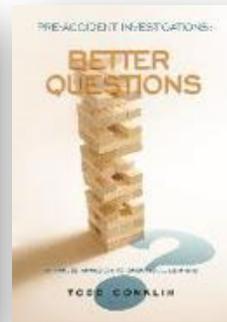
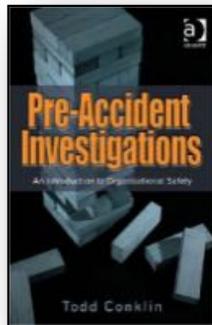


Resources

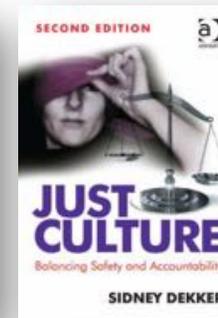
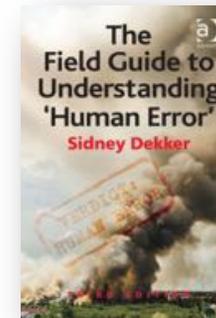
Andrea Baker

www.thehopmentor.com

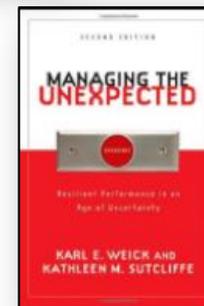
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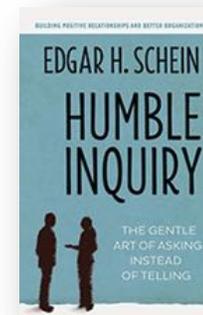
Todd Conklin, PhD



Sidney Dekker, PhD



Weick & Sutcliffe



Edgar Schein, PhD