Pre-Accident Investigations:
Better Questions

March 30, 2016 - NERC
Todd Conklin PhD
High Reliability and Human Performance

**Never
take a sleeping pill
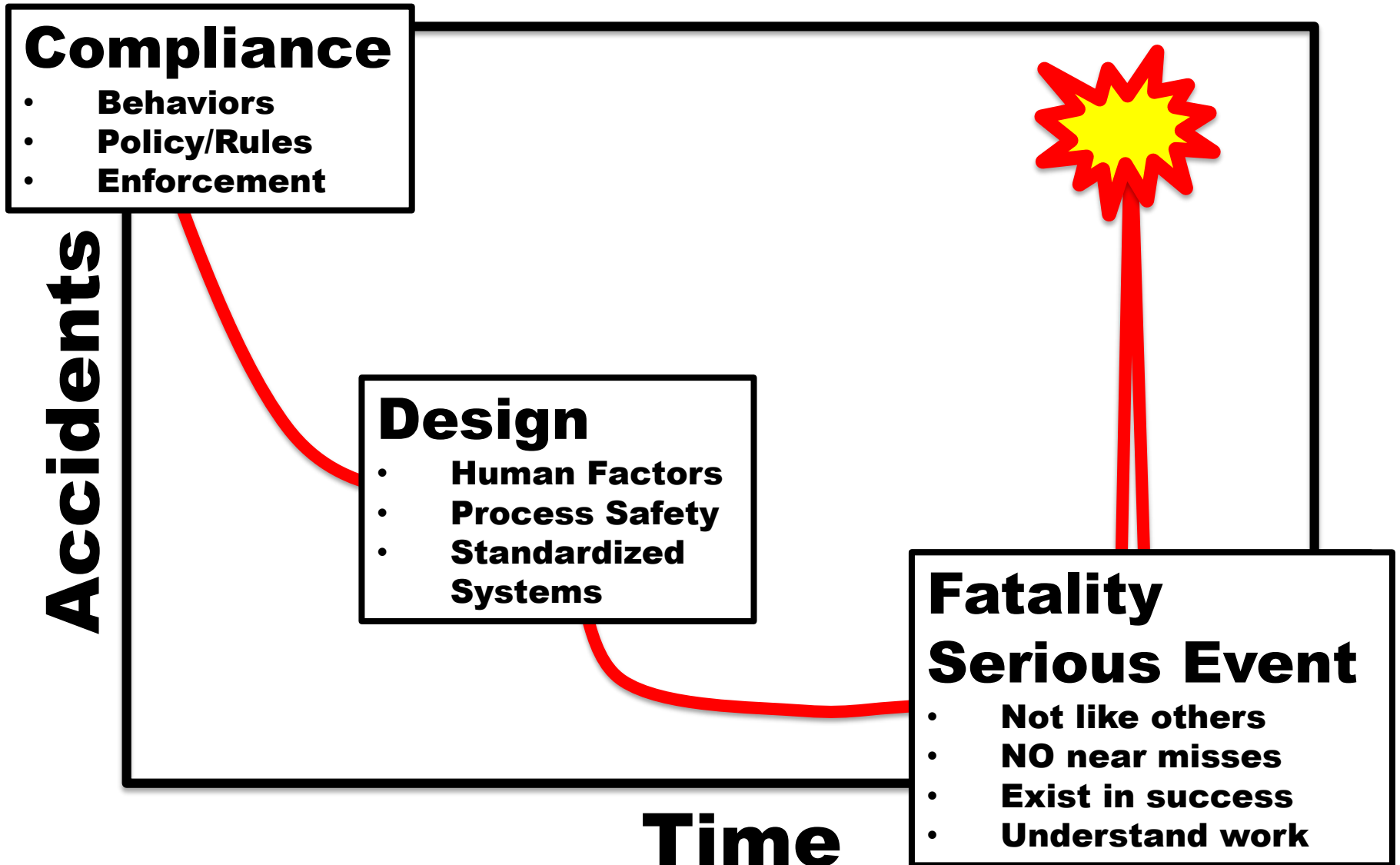And a laxative
at the same time.**

In any order...

Three Case Studies

3

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Direct Senior Leadership Quote...

"We drifted to a place where we started asking the Wrong questions."

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The Safety Journey So Far...

Accidents (vertical axis)

Time (horizontal axis)

Compliance
- Behaviors
- Policy/Rules
- Enforcement

Design
- Human Factors
- Process Safety
- Standardized Systems

Fatality Serious Event
- Not like others
- NO near misses
- Exist in success
- Understand work

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Leadership's response to Events

MATTERS...

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Asking Leaders to be *Better Leaders* is not enough...

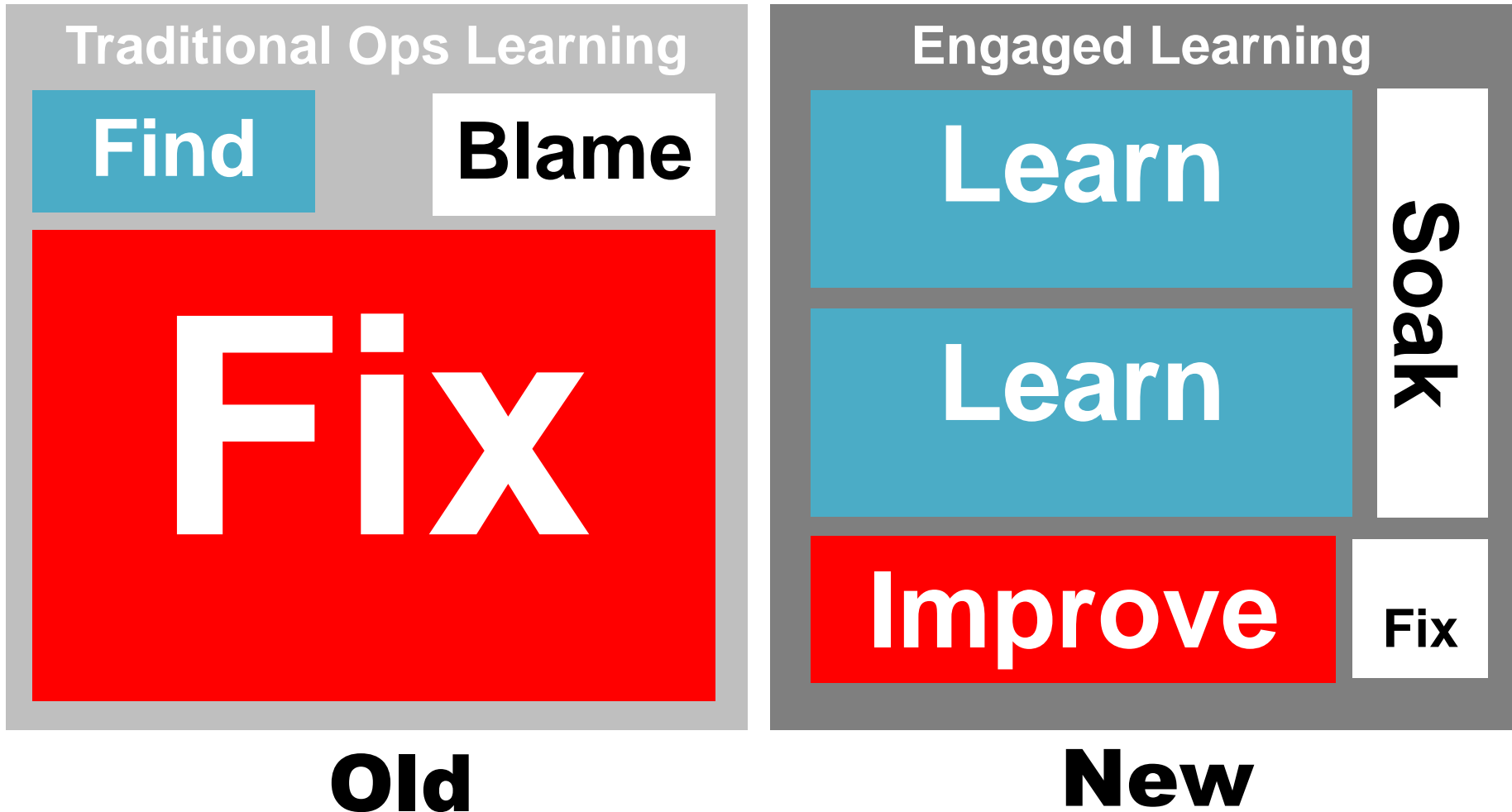# We must develop leadership systems to support reliable performance

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The Role of the Leader is to provide the initial "force" towards **understanding systems - first**... Not finding people to blame

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A Great **Shift** in Operational Learning

Traditional Ops Learning

Find **Blame**

Fix

Old

Engaged Learning

Learn

Learn

Soak

Improve **Fix**

New

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Redefinition of Operational Success.

An important consequence of the defining safety by operations that go wrong is the lack of importance of operations that go right.

If nothing happens – nothing is wrong.

Safety is not the absence of Accidents.

Safety is the presence of Capacity.
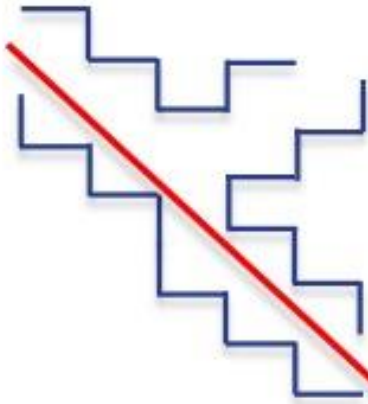
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Workers are as safe as they need to be, Without **being** too safe, in order to be **productive.**

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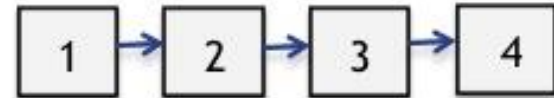# Until They're NOT..

The Three Parts of Every Failure

The Context

The Consequence

The Retrospective Understanding

1 → 2 → 3 → 4

Pre-Accident Investigations, Conklin 2013

3 Parts of an Event

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Worker's Don't **Cause** Failures.

Worker's **Trigger** Latent Conditions That Lie Dormant In Organizations Waiting for This Specific Moment In Time.

We desire
seductivel y
unambiguous
information about
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Shift your thinking from "Why" to "How"

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The Gray Area:
Uncertain interpretation of Safe work

Clearly Safe to do Work

Clearly Not Safe to do Work

Workers Discover Safety While Working…

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Clearly Safe to do Work
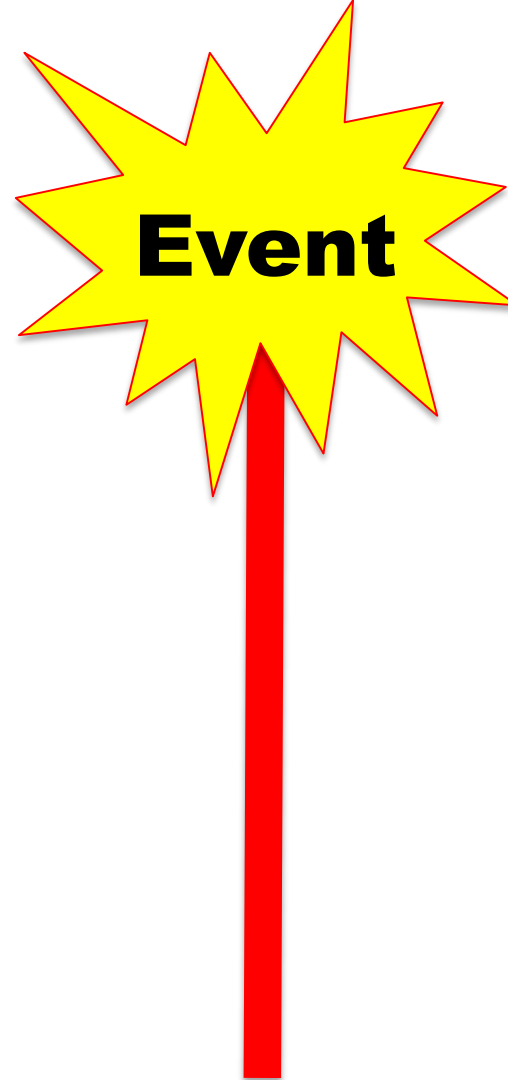
Event

Clearly Not Safe to do Work

After the Event, Safety is Clear…

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Start Of Job

Work Execution Improvement Area

Essential Safeguards Fatality Prevention Area

Hazard
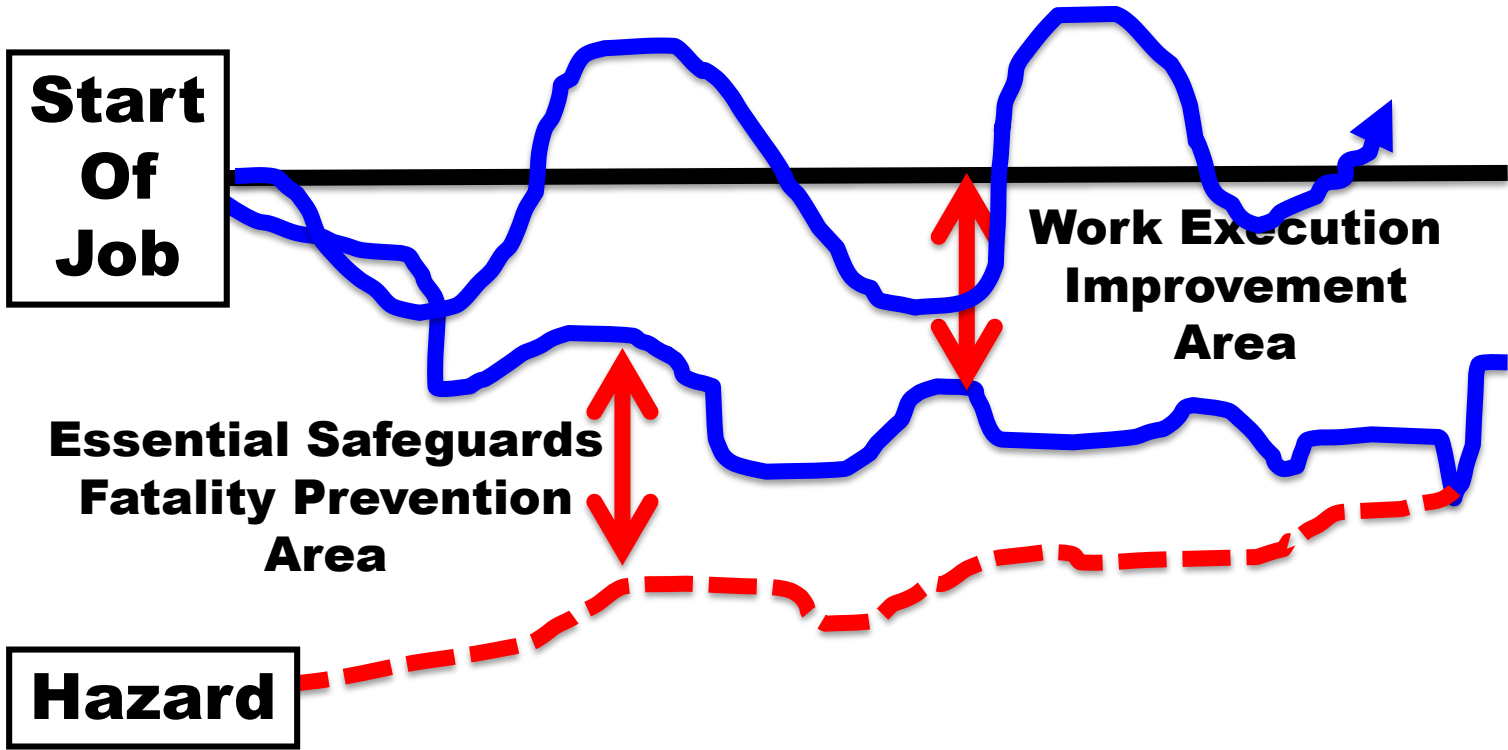
Safety Understood:
Drift and Accumulation

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Workers

Are Masters of the Blue Line...

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The Change In How We Must Think About **Workers**.

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The **Change** in How We Think about Workers

Historical

- Outsiders
  - not responsible
  - not smart
  - should stay in their place
- Uninformed
- Automatons
- Single issue
- Shallow knowledge
- Process Users
- Error-Proofed

New View

- Insiders
  - Very Responsible
  - Very smart
  - Idea generators
- Important Informants
- Creative/Adaptive
- Problem identifiers
- Problem fixers
- Profound process owners
- Fail Often, Safe, and Fast

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We must stop seeing **workers** as problems to be fixed. But, as **Solutions** to be harnessed.

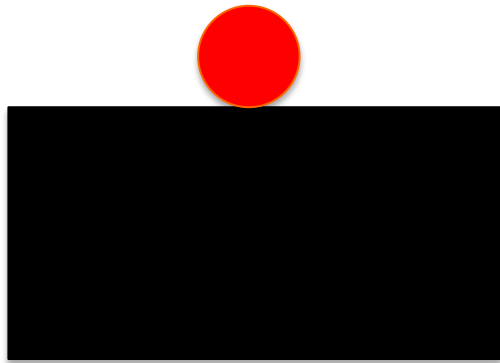Conklin

We don't design human error **out** of our work systems...

We design human error **in** to our work systems.
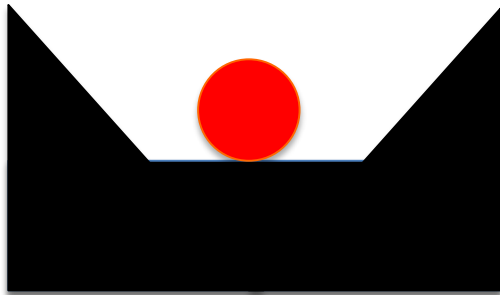
Systems must be designed for both error and violation.
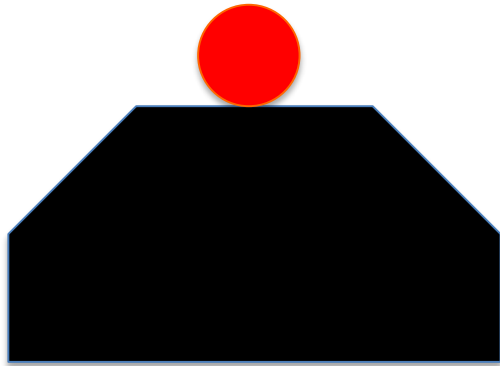
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Systems

Fragile: Non-Robust
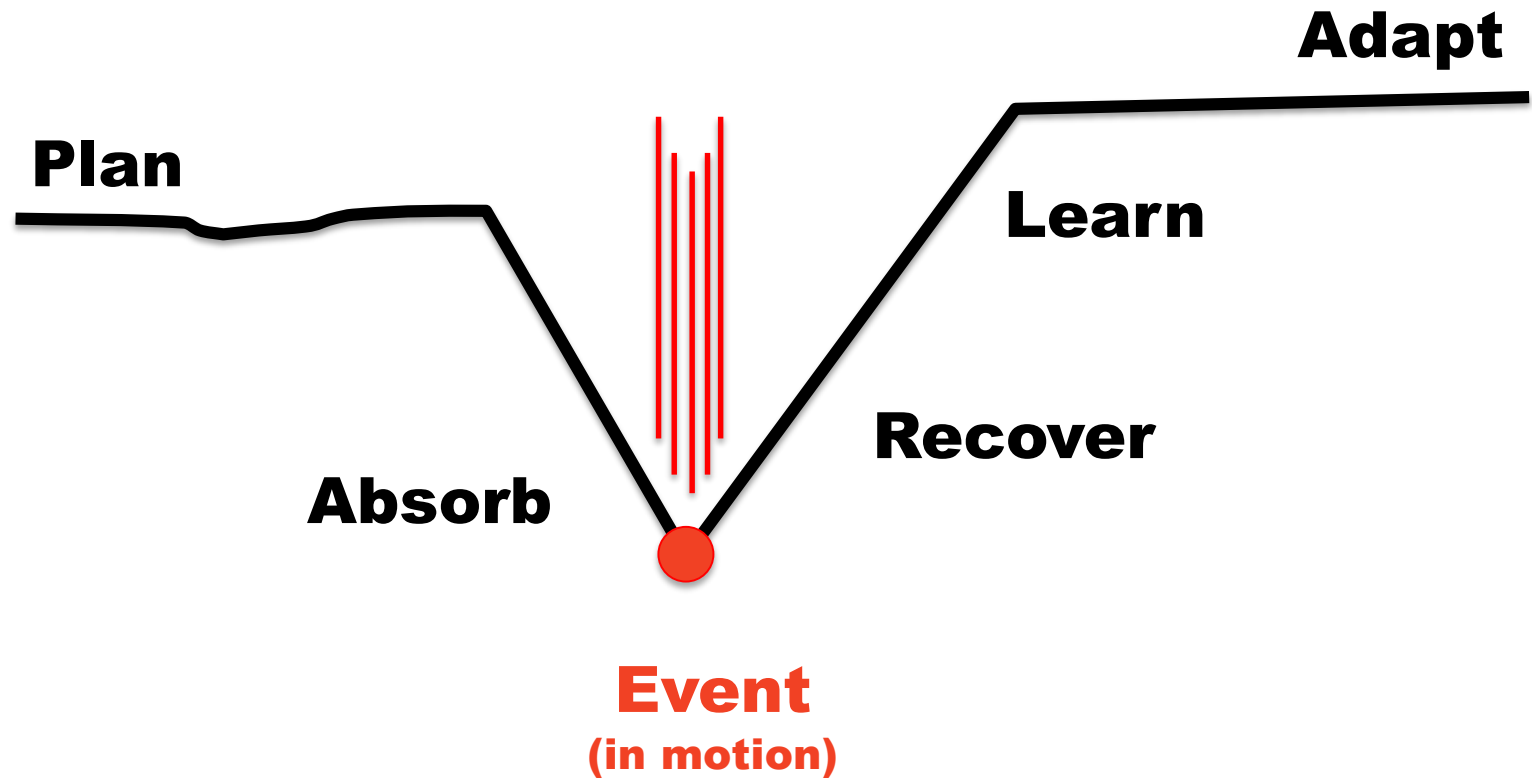
Stable: Non-Robust

Resilient: Robust

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Resilience

We can't really remove risk from our work...

So, we must build risk competency and failure capacity in our work systems and processes.

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Resilience Model

Plan

Adapt

Learn

Recover

Absorb

Event
(in motion)

Linkov 2013

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Defense Capacity
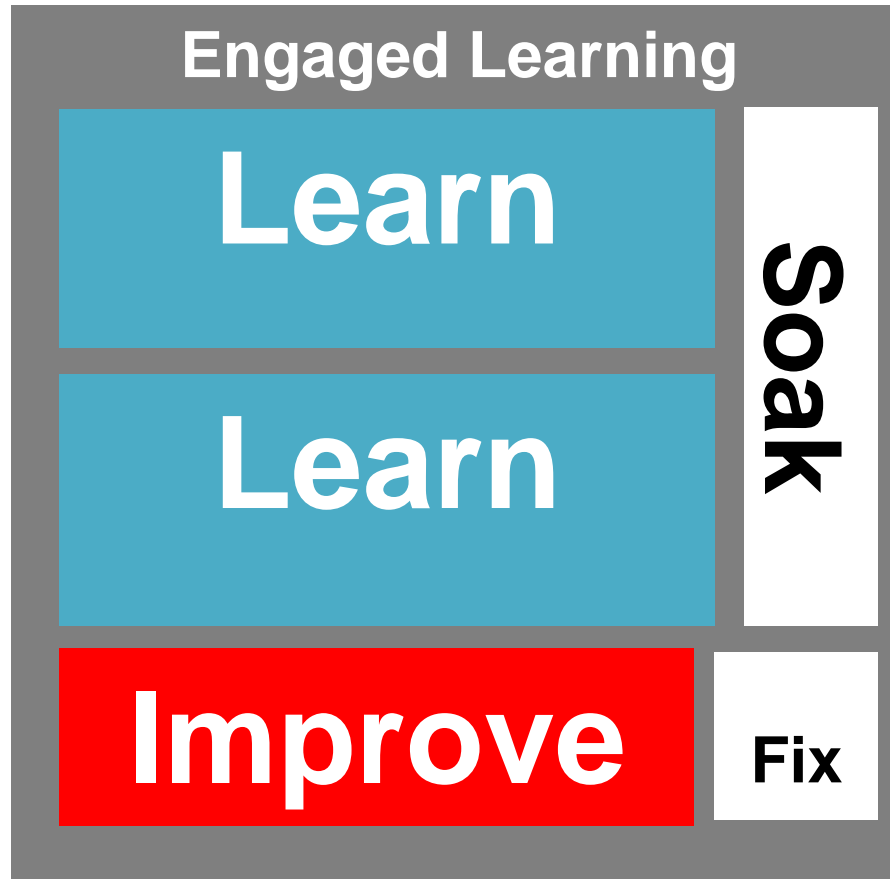
Start Of Job

Defense Capacity
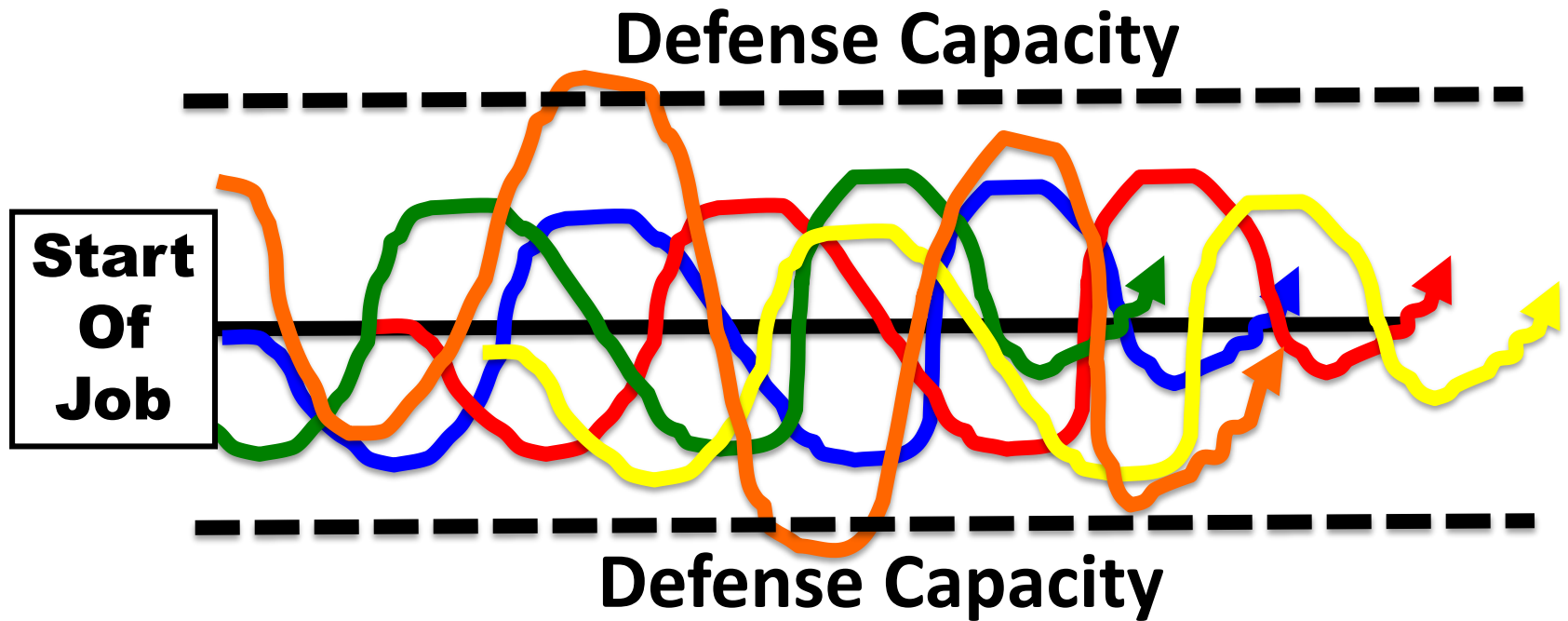
Safety Understood:
Defending Resilience

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Your Organization

must be an operation that is resilient enough to fail and recover...over and over and over and over and over and over and over and over and over and over and...

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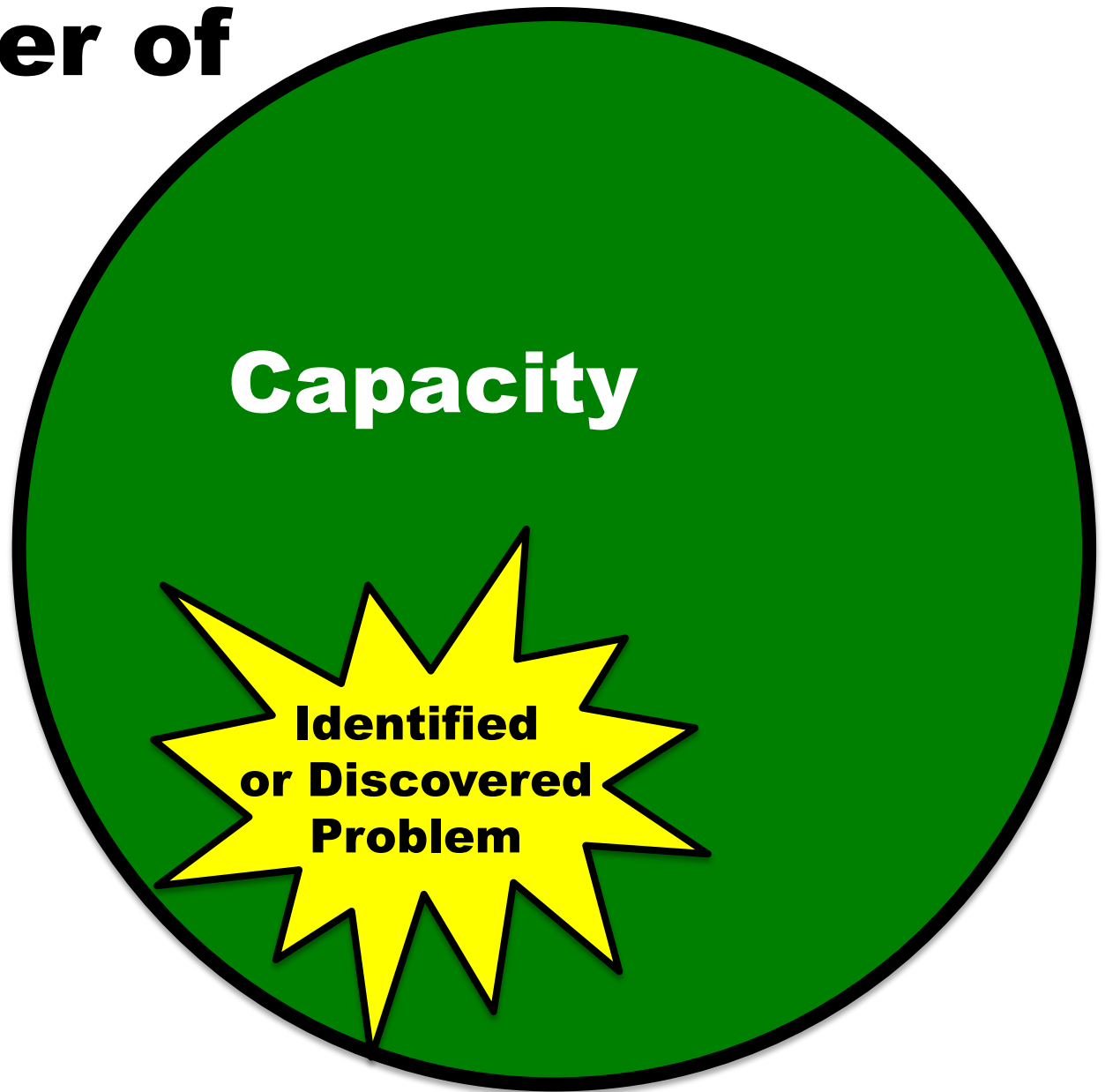# A Great **Shift** in Operational Learning

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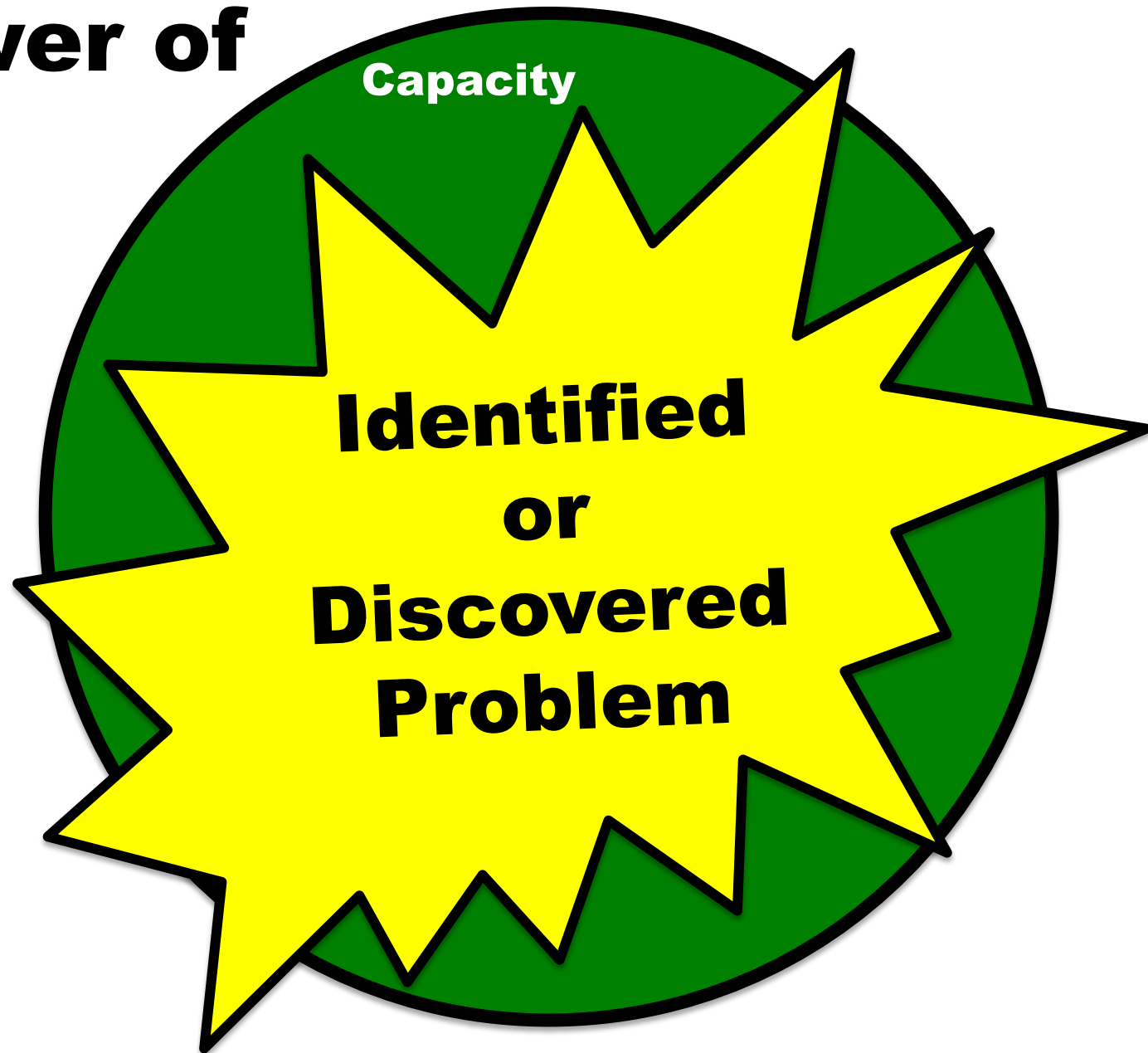Is the juice worth the squeeze?

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Leaders...

- Be Fixated on non-recoverable, high-consequence failures
- Recognize expertise in the organization and include them in learning
- Make the complex – transparent
- View safety as the presence of safeguards and not the absence of incidents.

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The Power of Early ID

Capacity

Identified or Discovered Problem

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The Power of Early ID

Capacity

Identified or Discovered Problem

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PreAccident Podcast