

Safety on the Edge: Human Error

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SAFETY
ON
THE
EDGE



PRE-ACCIDENT INVESTIGATIONS

managing behaviour and systems in complex organizations

TODD CONKLIN

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The
Latest....**

**On
Amazon and other
Booksellers.**

Thanks

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

In any order...

**Safety is not
the absence of
accidents.**

**Safety is the
presence of
capacity.**

**Workers Are As
Safe As They Need To
Be,**

**Without Being Overly
Safe...**

**In Order To Get Their
Job Done.**

Until They're NOT..

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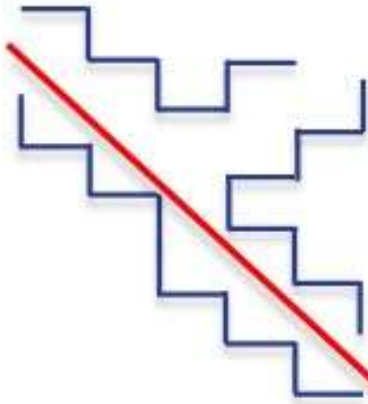
“ To understand failure...we must first understand our reaction to failure.”

– Sidney Dekker

* Human Performance

The Three Parts of Every Failure

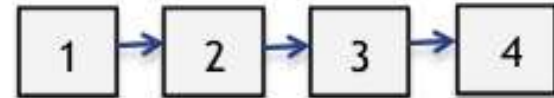
The Context



The Consequence



The Retrospective Understanding



Pre-Accident Investigations - Conklin 2012

3 Parts of an Accident

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Worker's Don't Cause Failures.

Worker's work in Complex Systems in which risk and creativity constantly travel in and out.

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**Workers are
People...**

Workers are

not **Machines.**

We Must understand
People and
Work Processes
In Parallel...

* Human Performance



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**Shift your
thinking from
“Why”**

to “How”

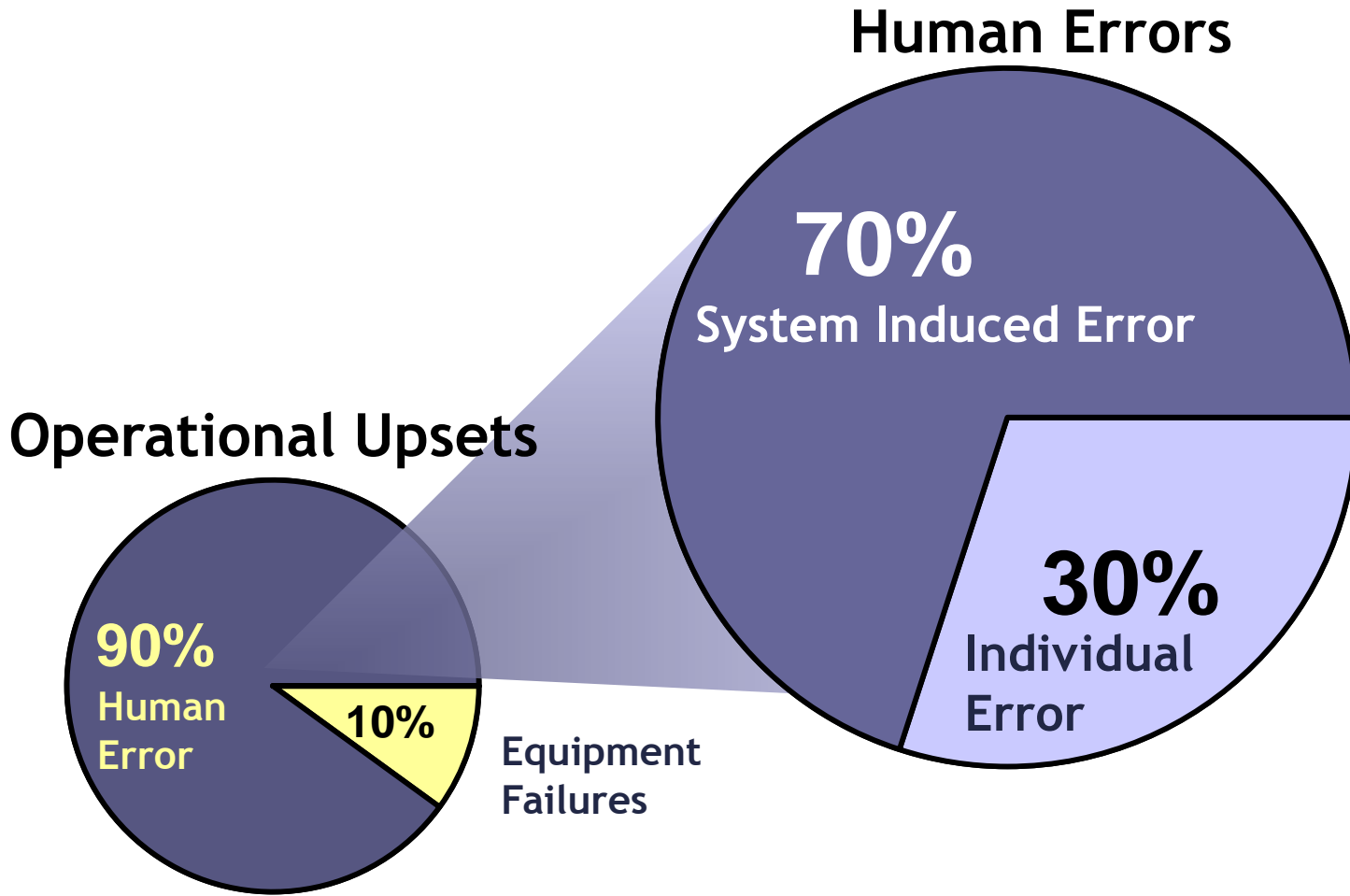
**Which moves
your thinking
from “Who”**

to “What”

Human/System Performance

1. People Make Errors
2. Complexity is everywhere
3. We must deliberately learn
4. Constantly create capacity

1 **Workers are
Fallible, even
the best make
mistakes...**



Origin of Human Error

Human Error Expertise Identification Exercise

How many times does the uppercase or lowercase letter “F” appear in the following sentence?

Finished **f**iles are the re-
sult **o**f years **o**f scientific
study combined with the
experience **o**f many years.

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

-Edward de Bono PhD

*** Limitations of
Human Nature**

Error is not a choice.

Mistakes



Violations

Error is not

always bad...

But it is always

normal...

**Workers
Are Masters of
Complex Adaptive
Behavior...**



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**“Operators will
operate
whatever sh*t
we give
them...”**

...and they get good at it.

Clearly **Safe**
to do Work

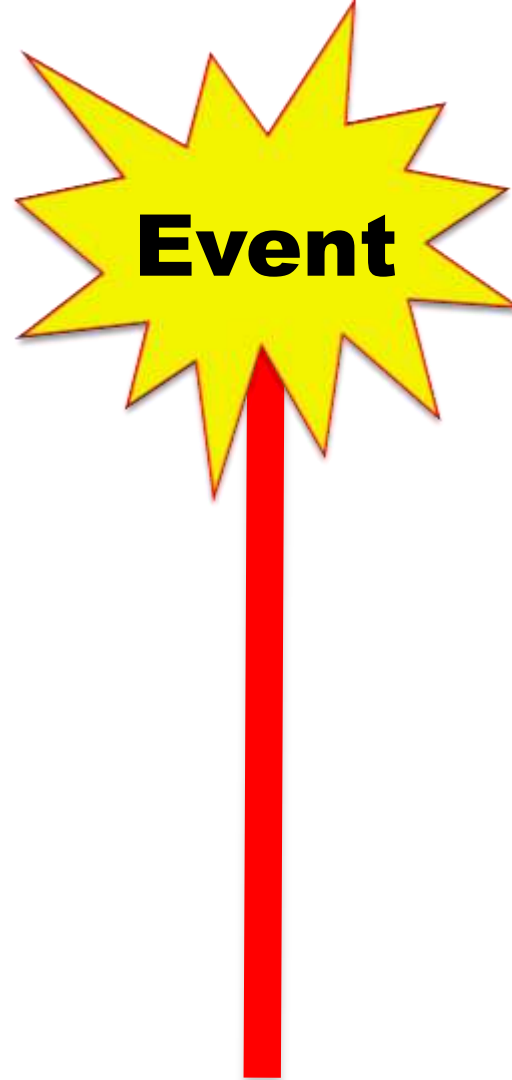
The **Gray** Area:
Uncertain
interpretation
of Safe work

Clearly **Not Safe**
to do Work

* Workers Discover Safety While
Working...

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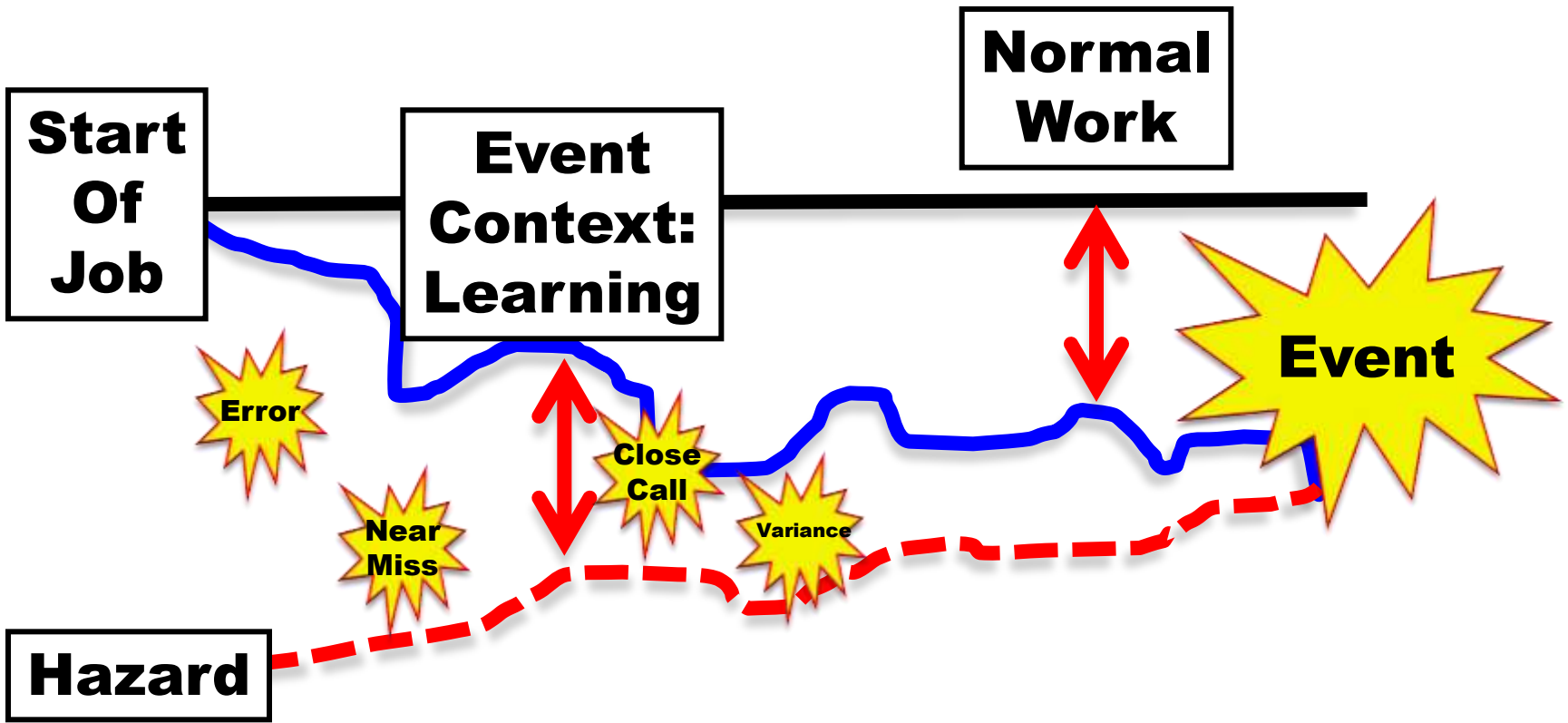


Clearly **Safe
to do Work**

Clearly **Not Safe
to do Work**



After the Event, Safety is Clear...



Learning Teams:

Drift and Accumulation

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**A reliable
organization tells the
story of an action
going wrong...not
waiting for an action
gone wrong.**

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2

**Complexity
is
everywhere**

**If you want to know
how work is done...**

Ask a worker.

**Workers fail when
they find themselves
in situations where it
is easy to get hurt
and hard to be safe.**

All Event

prevention

happens through

Learning

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**Knowing less
Does not make
You smarter...or safer.**

When you investigate an event
and the workers is not
involved... You're talking
about the worker.

When the worker is involved...
your talking **with** the worker.

The Problem

You cannot
Learn and
Perform at the
Same Time.

3

**We Must
Create a**

Space

for

Learning.

Behavior is the
**outcome of your
Organizational
System**

Error is a normal
product of your
Organization

Collectively
Tells you of
where the title
events
may happen.



Is the juice
worth the
squeeze?

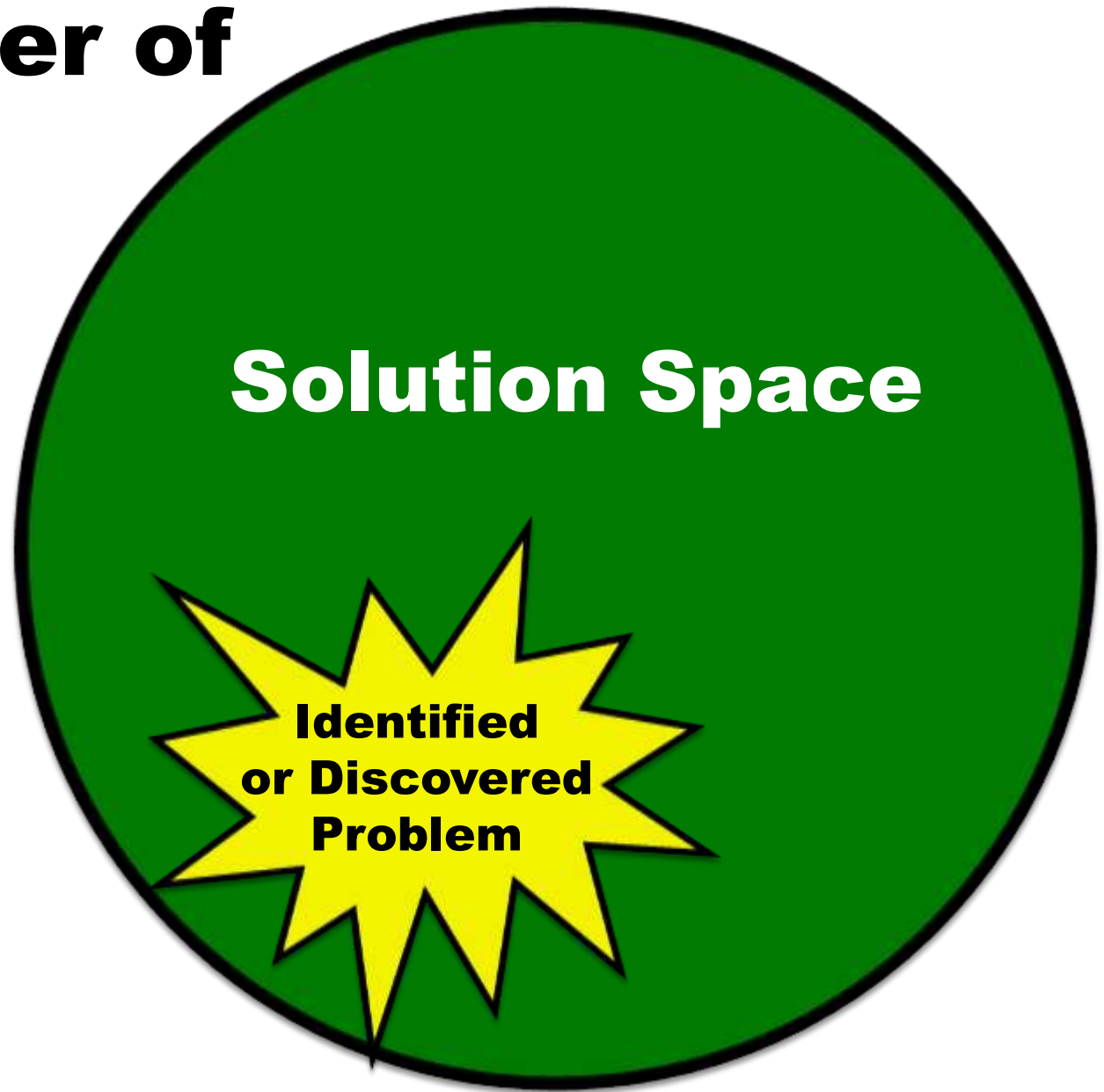
4

**Leave your
Workers
With the**

Capacity

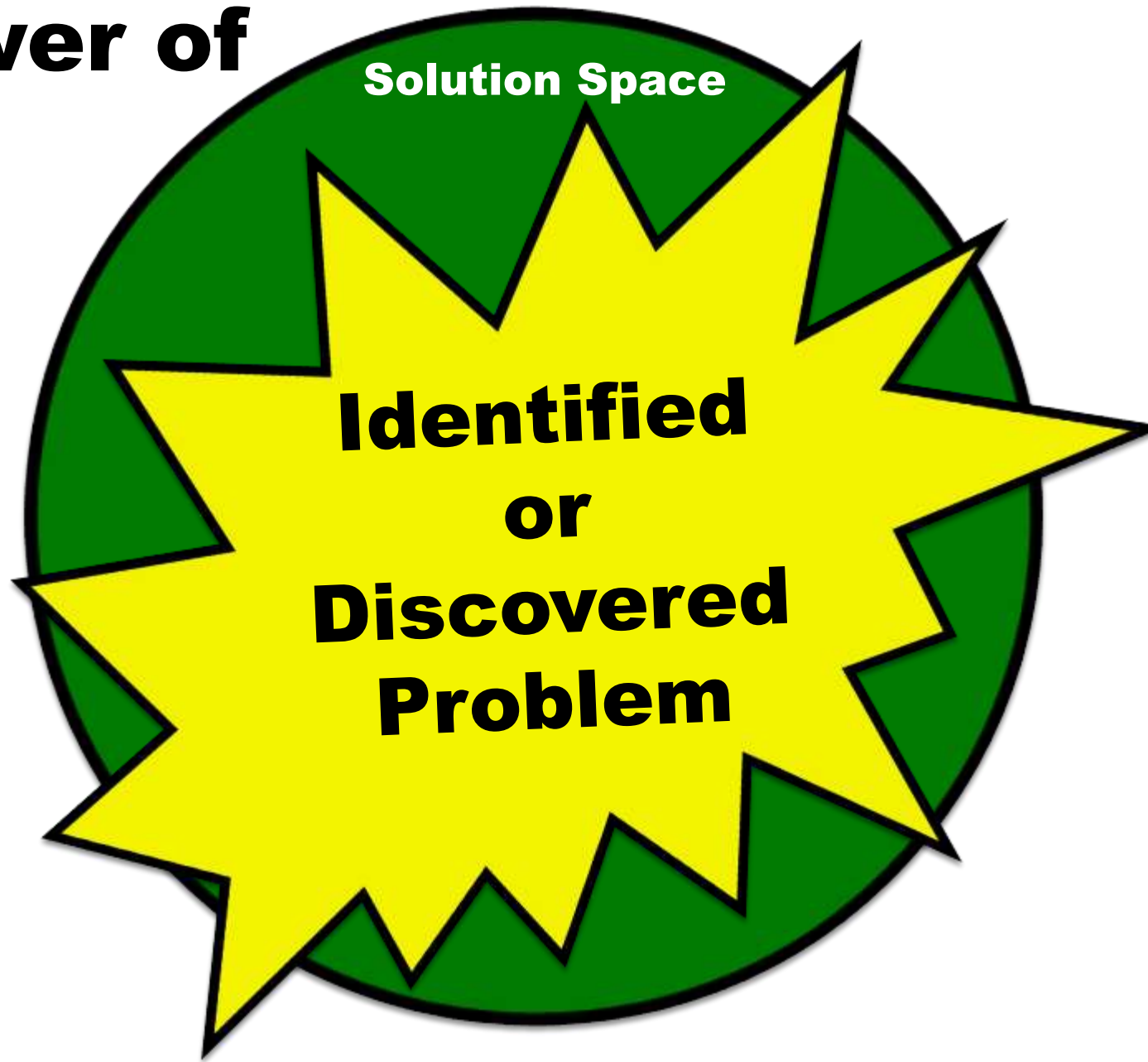
**to do create safety
In their work...**

The Power of Early Hazard ID



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The Power of Early Hazard ID



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Learn

before

Acting

Its **Easy**...

You can either

Blame and Punish

or

Learn and Improve

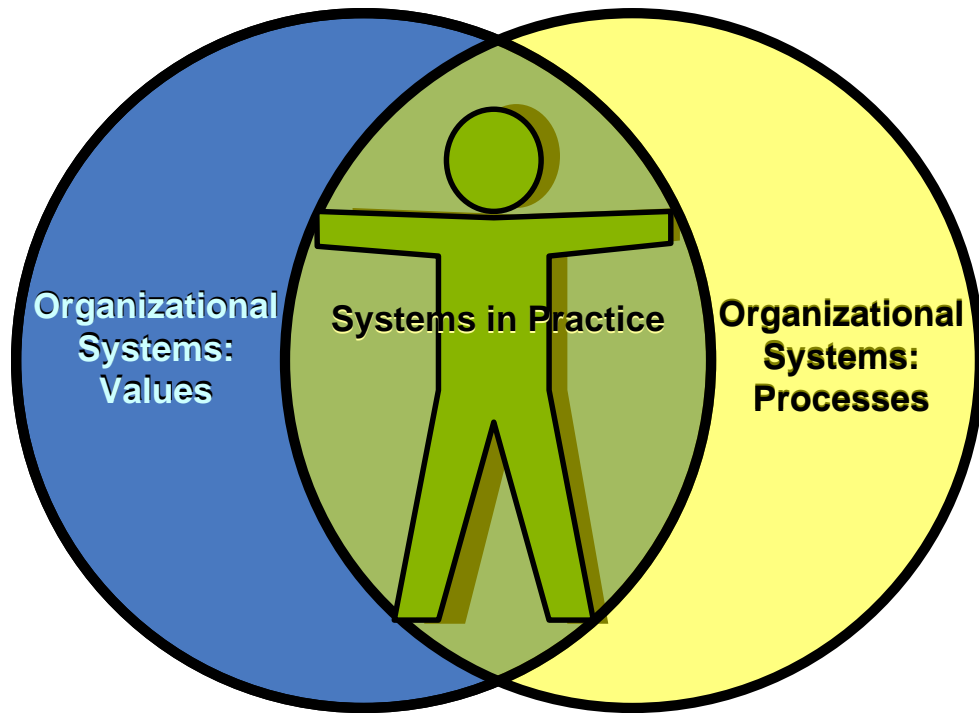
Safety is the
**ability for workers to
do work in a varying
and unpredictable
world.**

**Safety is not the
absence of
accidents.**

**Safety is the
presence of
capacity.**

Human/System

Performance



- * People will never perform better than what the organization will allow
- * If a system relies on people doing the right thing every time, it will fail
- * No working system remains in stasis

What you do is...

**Keep Failure From
Being Successful.**

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