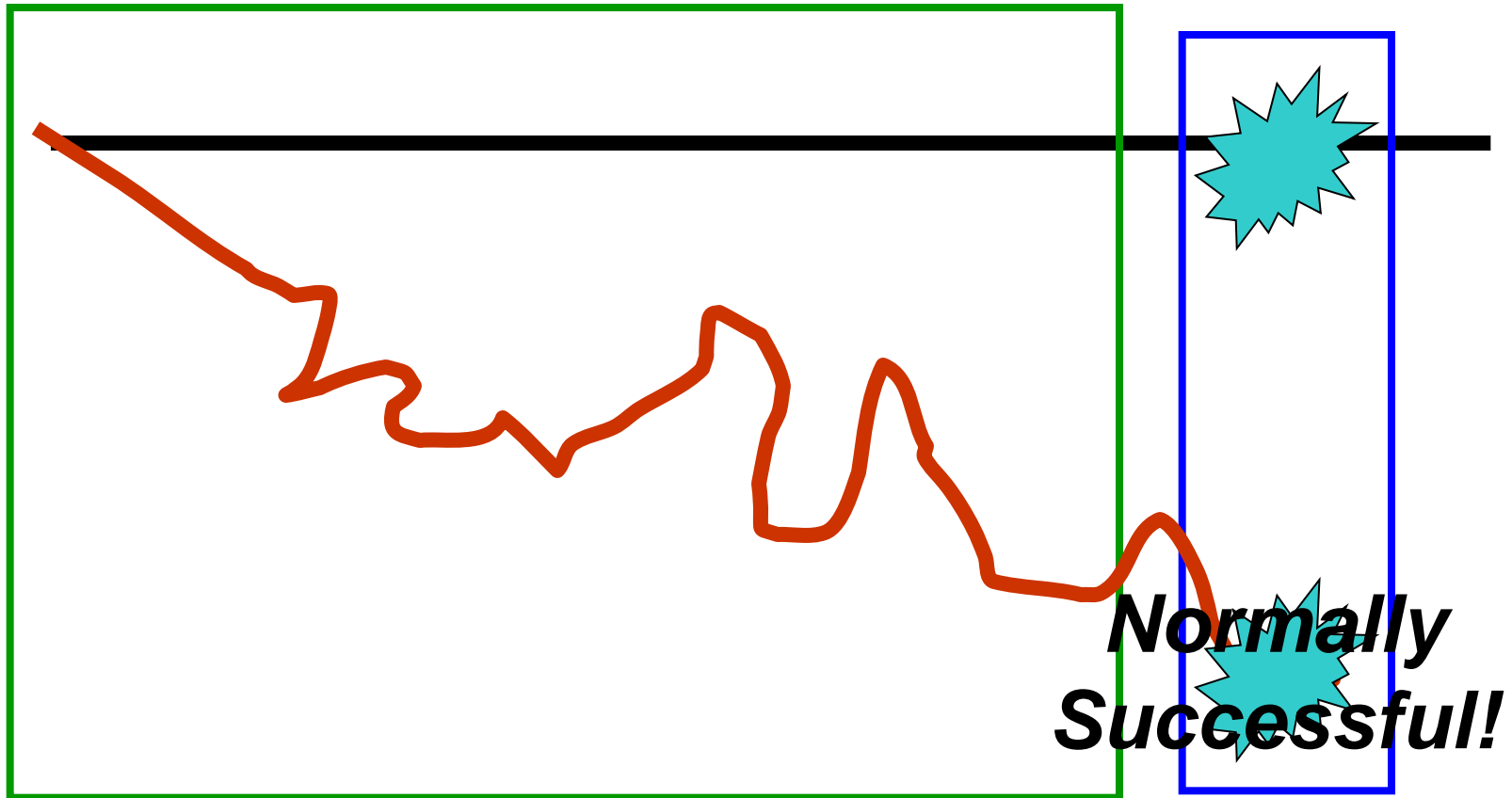

IAEA

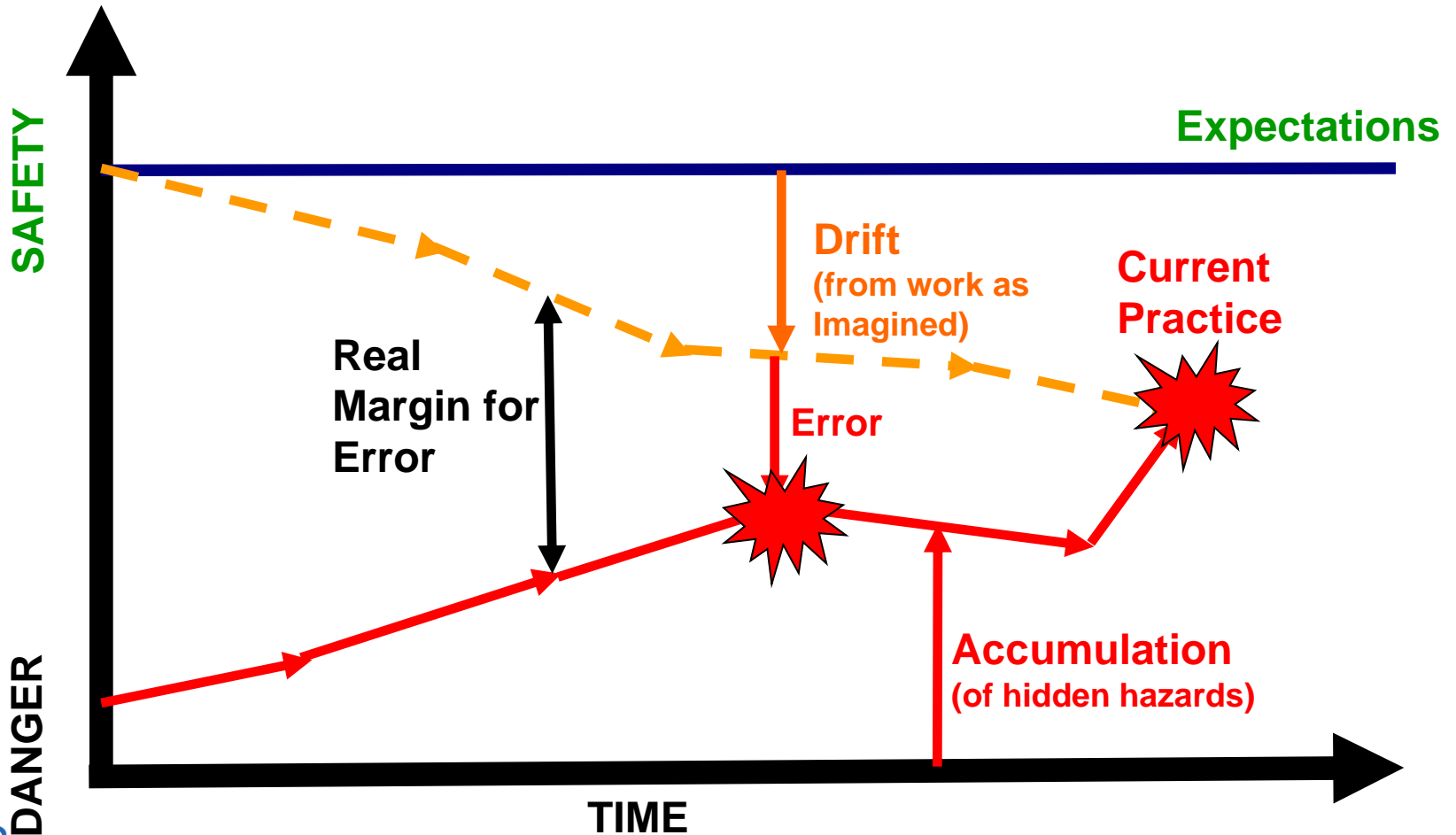
Safety Culture Introduction

“The Dot Talk”

Work as Imagined Vs. Work in Practice



Drift and Accumulation*



Hmmmm.....

Two Ways To Understand Laboratory Safety Programs...

System Optimism – Need for Control

Things go right because:

- Systems are well designed and maintained,
- Designers can foresee and anticipate every contingency
- Procedures are complete and correct
- People behave as they are expected to — as they are taught

Therefore, humans are a **liability** and performance variability is a **threat**.

System Realism

Things go right because people:

- Learn to overcome design flaws and functional glitches
- Adapt their performance to meet demands
- Interpret and apply procedures to match conditions
- Can detect and correct when things go wrong

Therefore, humans are an **asset** without which the proper functioning of the systems would be impossible.

To deviate is also human ...

- People are outcome-based and value immediate and certain results
- They make decisions to achieve the desired results
- As they try to do more with less, they drift away from expected behaviors

Accidents *as...*

Unexpected Combinations of Normal Variability

- We must strive to understand that accidents don't happen because people gamble and lose.
- Accidents happen because
 - the person believes that what is about to happen is not possible...
 - or what is about to happen has no connection to what they are doing...
 - or, that the possibility of getting the intended outcome is well worth whatever risk there is.

Erik Hollnagel

Resilience

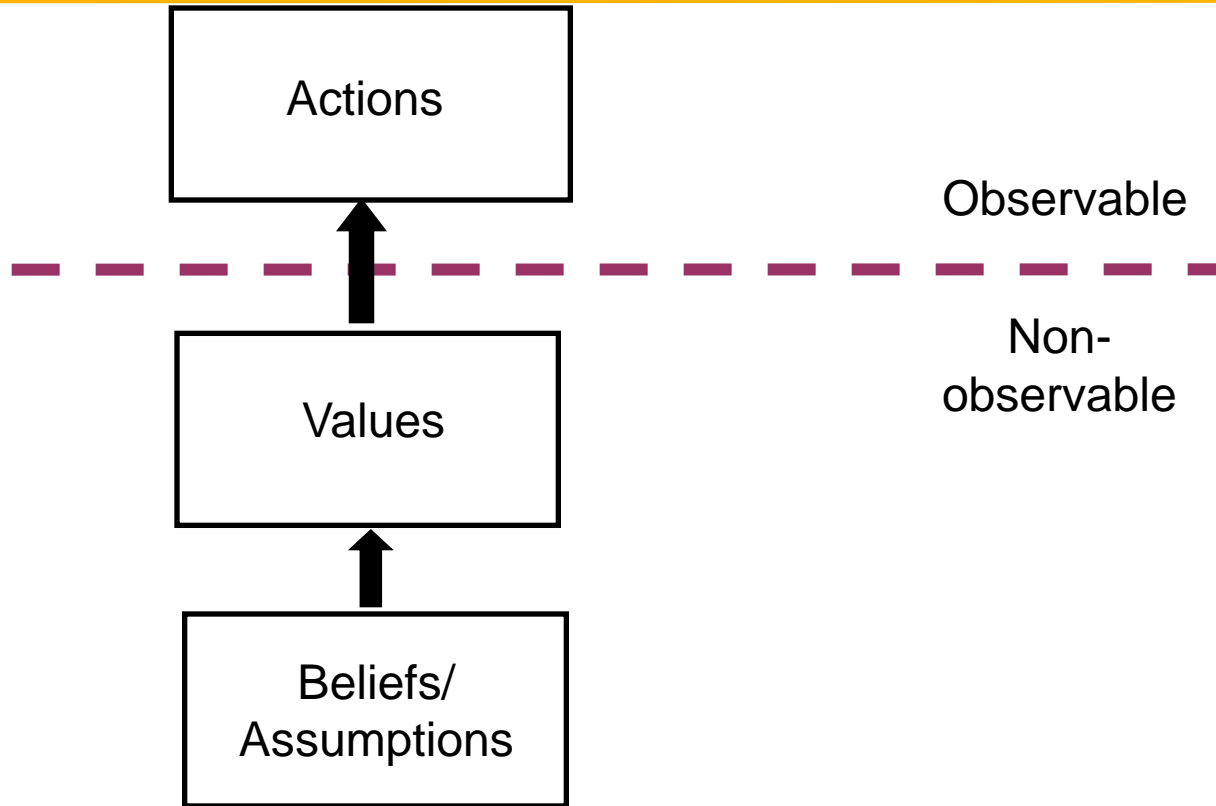
Resilience: The worker (or organization's) ability to adjust its functioning to sustain operations during unexpected conditions and in the face of escalating demands, disturbances, and unforeseen circumstances...

Engineering for Resilience – the tools that promote resilience that: anticipate, monitor, respond, learn

On Culture

What is Culture?

Schein Model



Culture is to an Organization what Memory is to Individuals

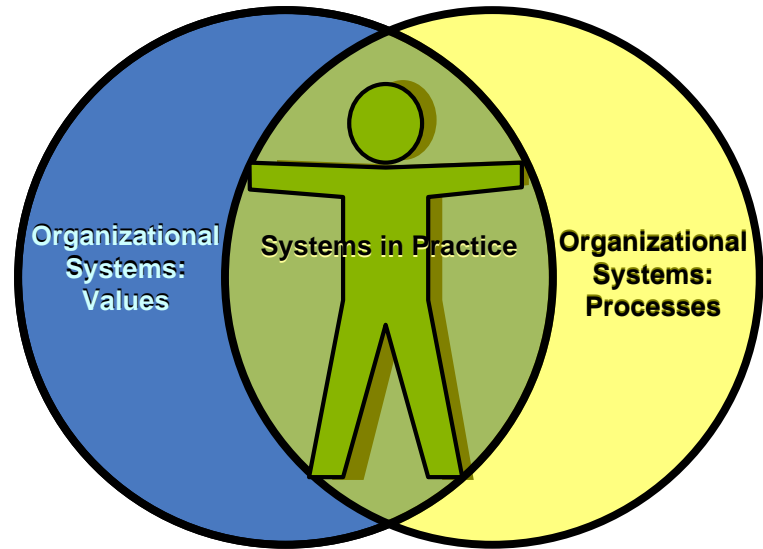
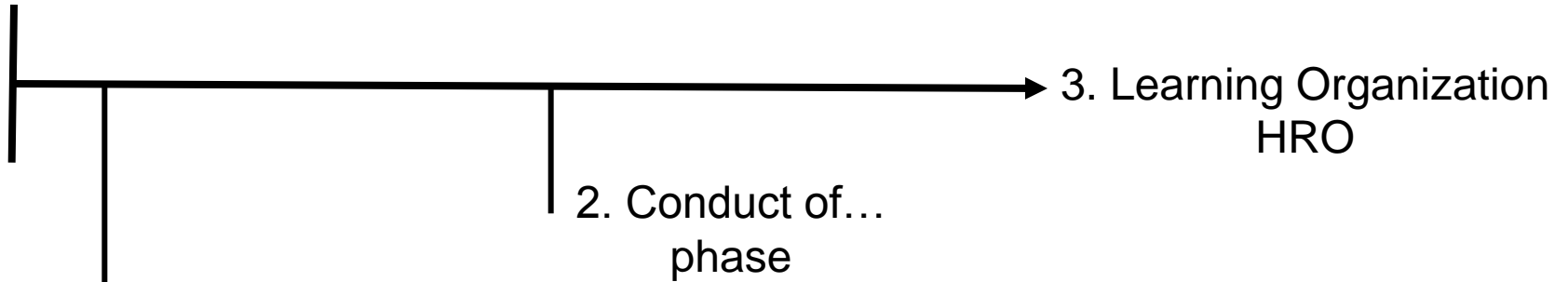
Using Schein's Ideas:

- Culture emerges in adaptive interactions
- Culture consists of shared elements
- Culture is transmitted across time and generations
 - Culture is Deep
 - Culture is Broad
 - Culture is Stable

Three Evolutions of the Development of a Safety Culture

1. Safety is Based on Rules and Regulations
2. Safety is Considered an Organizational Goal
3. Safety Can **ALWAYS** be Improved

IAEA Evolutions of Safety Performance: A Predictive Maturation Model



Safety is Based on Rules and Regulations

Compliance-Based Model

- Problems are not anticipated – organizations react
- Communication between departments is poor
- Low collaboration / Low shared decision-making
- People are named, blamed, shamed, and retrained
- Management is seen as enforcement
- People are rewarded for obedience and results

Safety is Considered an Organizational Goal

The Conduct Of.... Model

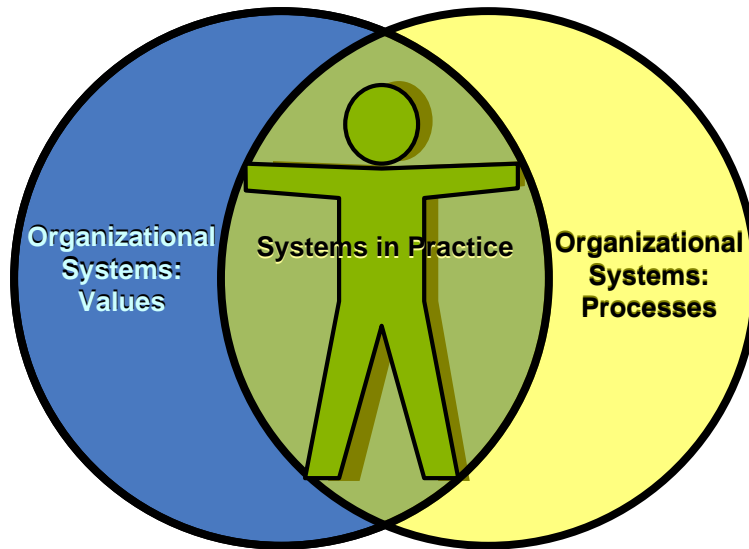
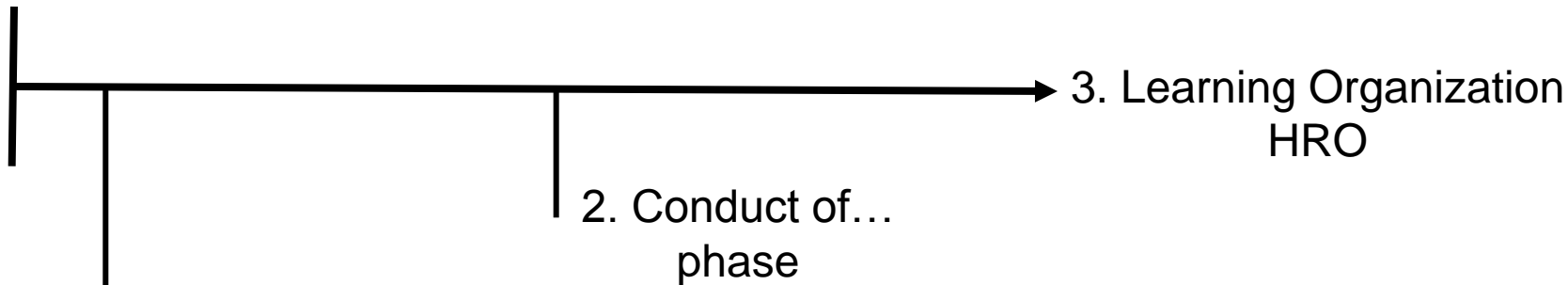
- Know that culture is there – and worried about it
- No clue why added controls and training don't work
- Management's response to mistakes is more procedures
- Organization is interested in learning externally
- People / technology interface is valued only for efficiency
- People are rewarded for meeting (exceeding) goals
- No attention paid to long-term consequences

Safety Can ALWAYS be Improved

Learning Organization (HRO) Model

- Problems are anticipated – event prevention practiced
- Inter-departmental collaboration is strong and normal
- No conflict between safety and production goals
- Management is present during safety decisions
- Learn from others, both internally and externally
- People are rewarded for improving process and results

IAEA Evolutions of Safety Performance: A Predictive Maturation Model



On Organizational System

- Only people hold this patchwork of processes together in reality
- People are necessary to create safety through practice
- There are always multiple goals in conflict
- In pressurized systems, right decisions do not always get made.
- Systems as a norm are reliable and dependable – we can normally depend on these systems so that when we go in to ETTO we can rely on the system filling in the blanks.

IAEA Safety Culture Principles

- Safety is a universally recognized value
- Leadership for safety is clear and understood
- Accountability for safety is clear and moves upward
- Safety is integrated in all activities
- Safety is learning driven

13 Basic Human Behavior Tenets

1. People do what they've done before
2. People do what they see others do
3. People don't do what they can't do
4. Behavior is a function of organizational structure and processes
5. Behavior is elicited by past experience
6. Reinforcement increases frequency of behaviors
7. Reinforcement works until it saturates
8. Punishment decreases frequency of behaviors
9. Punishment elicits only the avoidance if consequences
10. Avoidance behaviors can't EVER be managed
11. Silence is punishment for functional behavior
12. Silence is reinforcement for dysfunctional behavior
13. How my manager responds to events tells me EVERYTHING about my manager

Action Planning

- Goal Statement/Problem Statement
- Actions Needed
- Barriers to Success – Consequences (intended/unintended)
- What should we be doing, starting tomorrow, to make this happen

A History

- The Concept of Safety Culture was First Introduced by the International Nuclear Safety Advisory Group in INSAG – 4 Report, Written in 1991.
- Safety Culture was identified as a Fundamental Management Principle
- IAEA's Journey Began with Four Questions:
 - Which Definition of Safety Culture is best?
 - How is Safety Culture is Assessed?
 - How is Safety Culture Enhanced?
 - How Can we obtain a deeper understanding of the concept of culture?