

RALEIGH, NC | OCTOBER 17-20, 2022

SMRP 30TH ANNUAL CONFERENCE

What Do RCA Analysts and Therapists Have in Common? More Than You Think!

Leadership & Organization/Track

Bob & Ken Latino, Prelical Solutions, LLC.



Where We're Headed Today...

- 4 Common Myths About What 'RCA' Is
- Case Review – Paper Mill Example
- Germination of a 'Failure'
- What Can RCA Facilitators Learn from Therapists?
 - Interviews are NOT Interrogations
 - Role-Playing Based on Common RCA Conclusions

RCA's: Myths vs. Realities Poll

Which of the following myths do you believe are TRUE?

- ☐ RCA's = 5-Whys
- ☐ RCA's Conclude with a Single Cause
- ☐ RCA's Result in Blaming Someone
- ☐ RCA's are Reactive and Only Apply to Mechanical Failures
- ☐ None of the Above



4 Common RCA Myths

#	Myths
1	RCA's = 5-Whys
2	RCA's Conclude with a Single Cause
3	RCA's Result in Blaming Someone
4	RCA's Are Only Applied to Understanding Mechanical Failures

Let's Jump Into a Case!

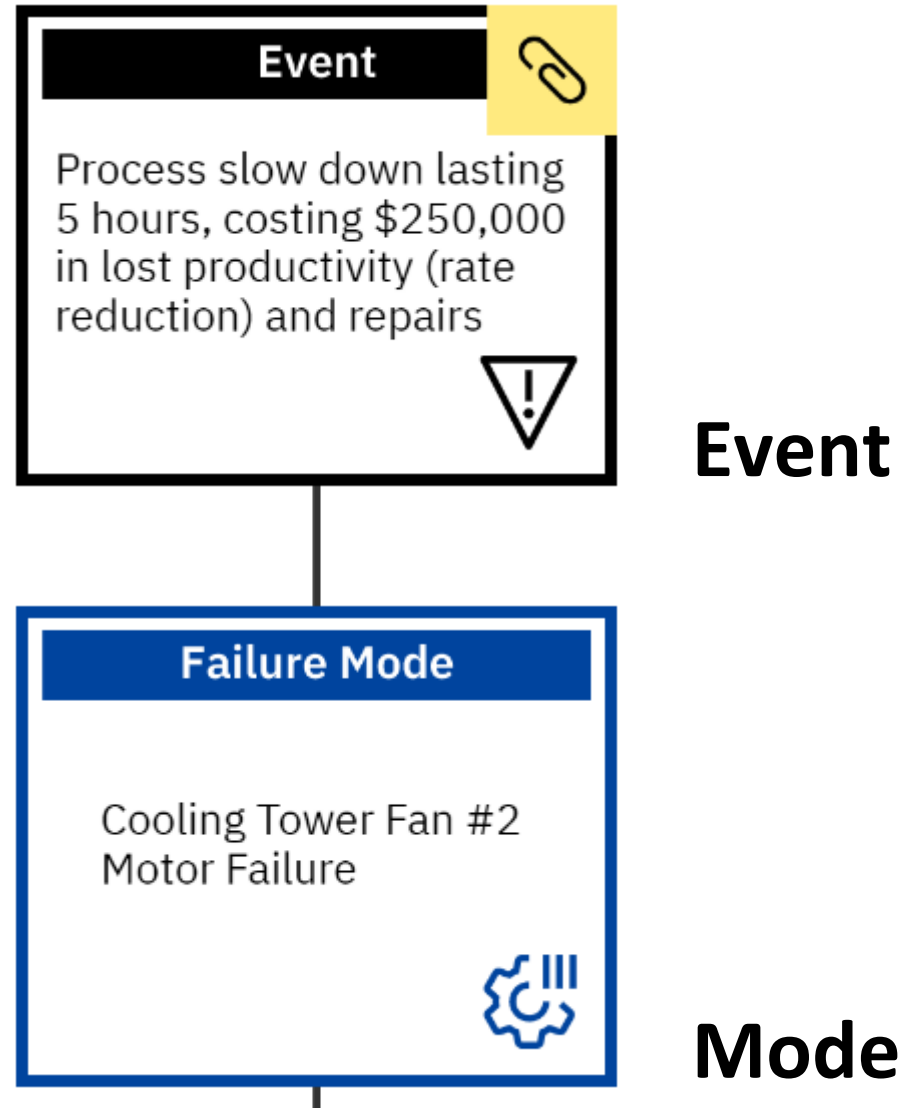
- **Statement of the Failure Event:**

- On June 15, 2019 at 4:30PM, production at the ABC widget factory had to be reduced when the quenching section could not meet the quality level of cooling needed.
- The cooling water temperature had increased due to the failure of the #2 Cooling Tower cell fan motor.
- The production department was required to slow the line down to meet the quality specification of the quenching section.
- It took the maintenance team five (5) hours to replace the motor and return the #2 Cooling Tower Cell back into service.
- With the cooling capacity of the tower fully restored, production was able to return to normal level.

- **Consequences of the Failure Event:**

- The impact of the reduced production level was \$200,000 in lost revenue opportunity. The repairs cost another \$44,000 for maintenance labor, crane rental, and contracted riggers. The motor was sent to a repair shop for rebuilding and testing, where the bearings were retained for future examination. The cost for the repairs to the motor was \$6,000.

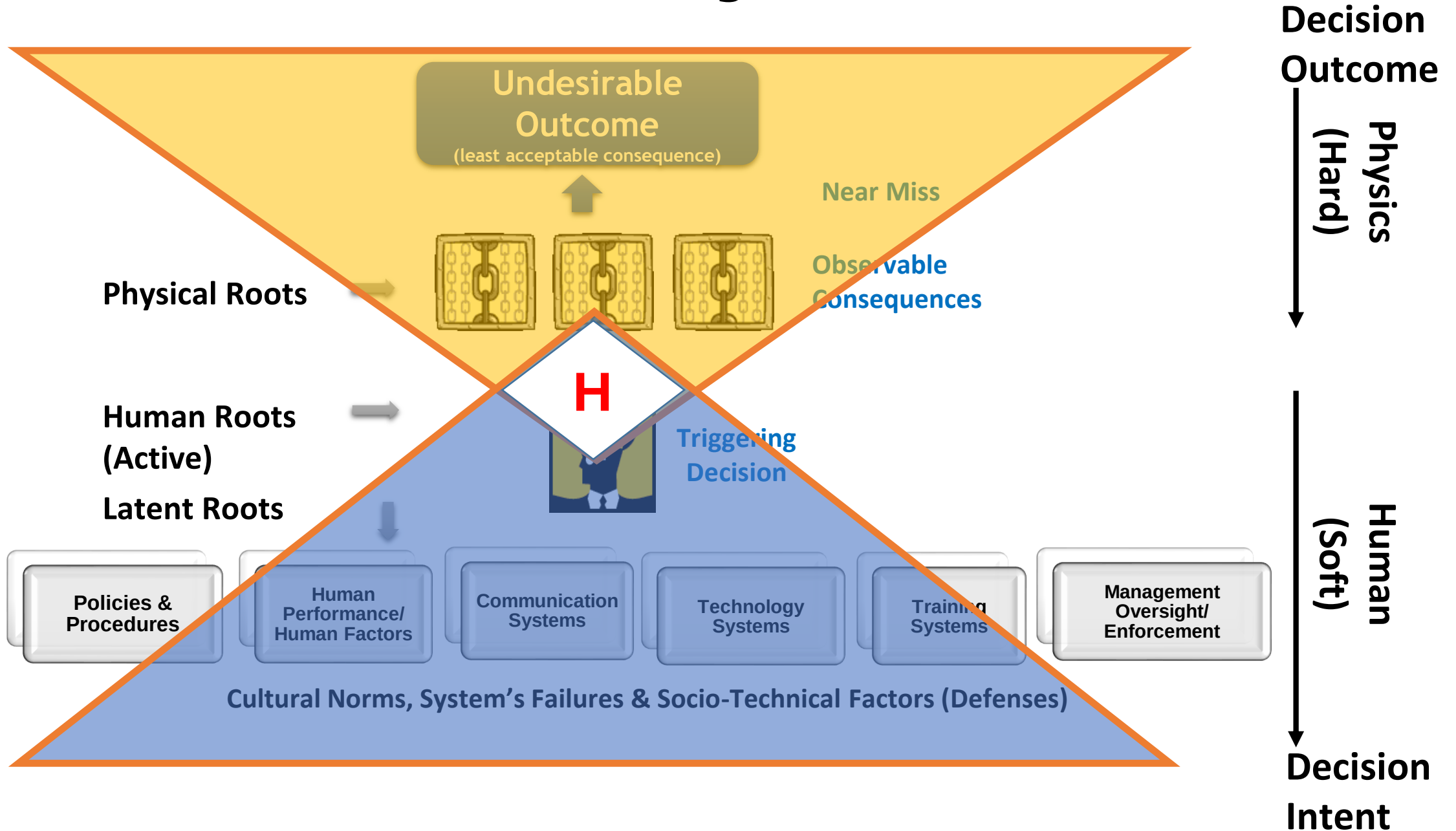
The Logic Tree Top Box



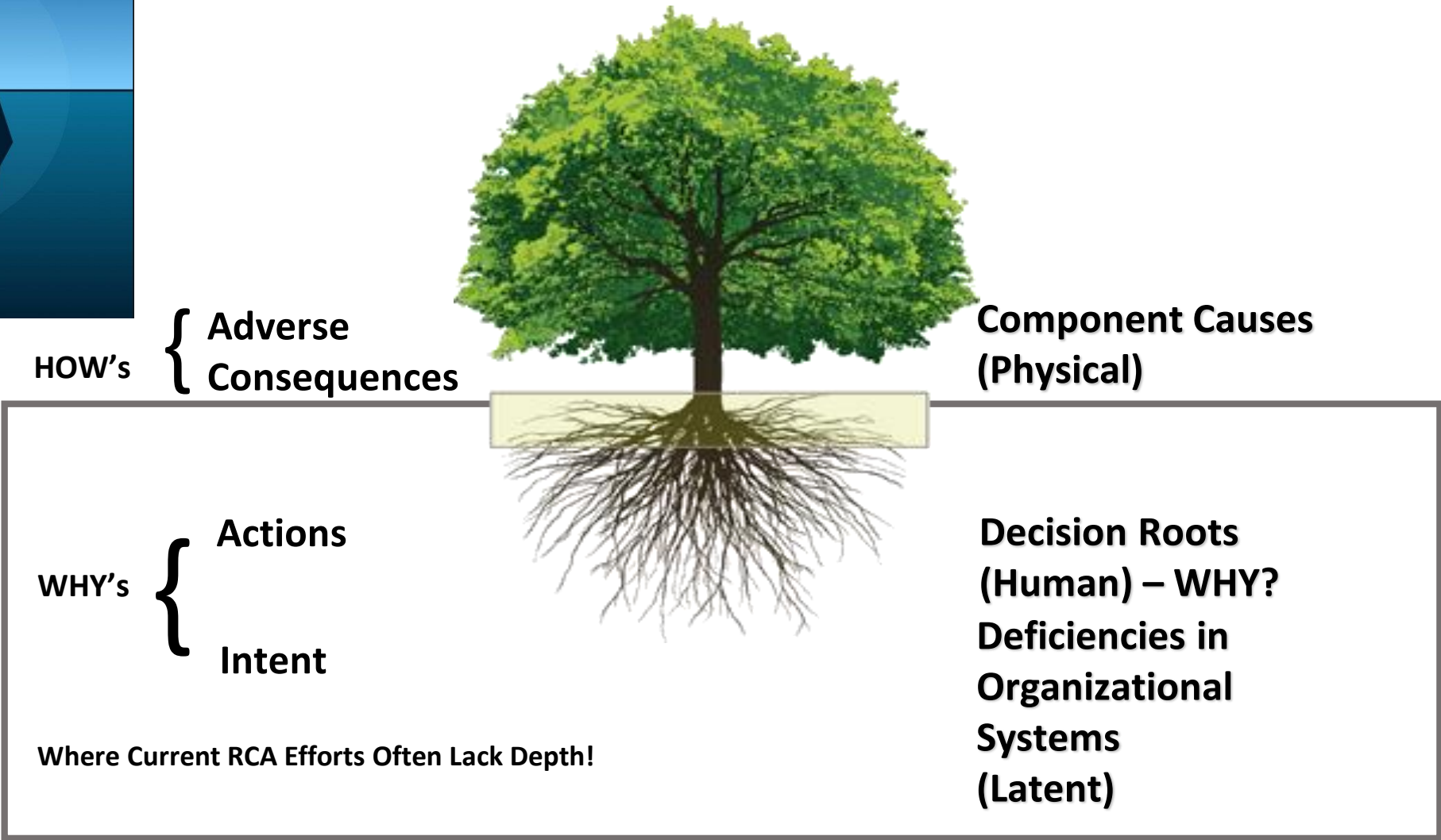
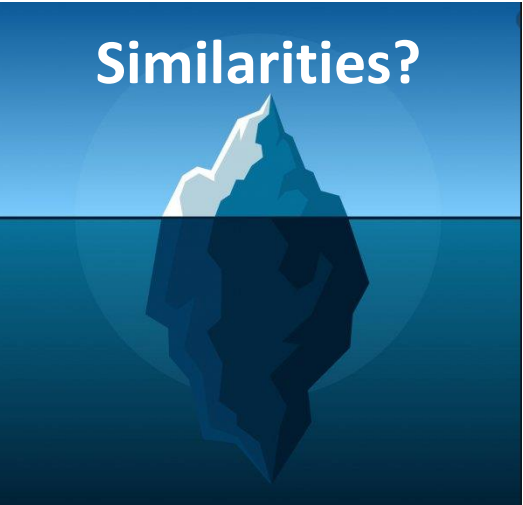
Step 1...Germination of a Failure

Understanding the Basics

The RCA Hourglass

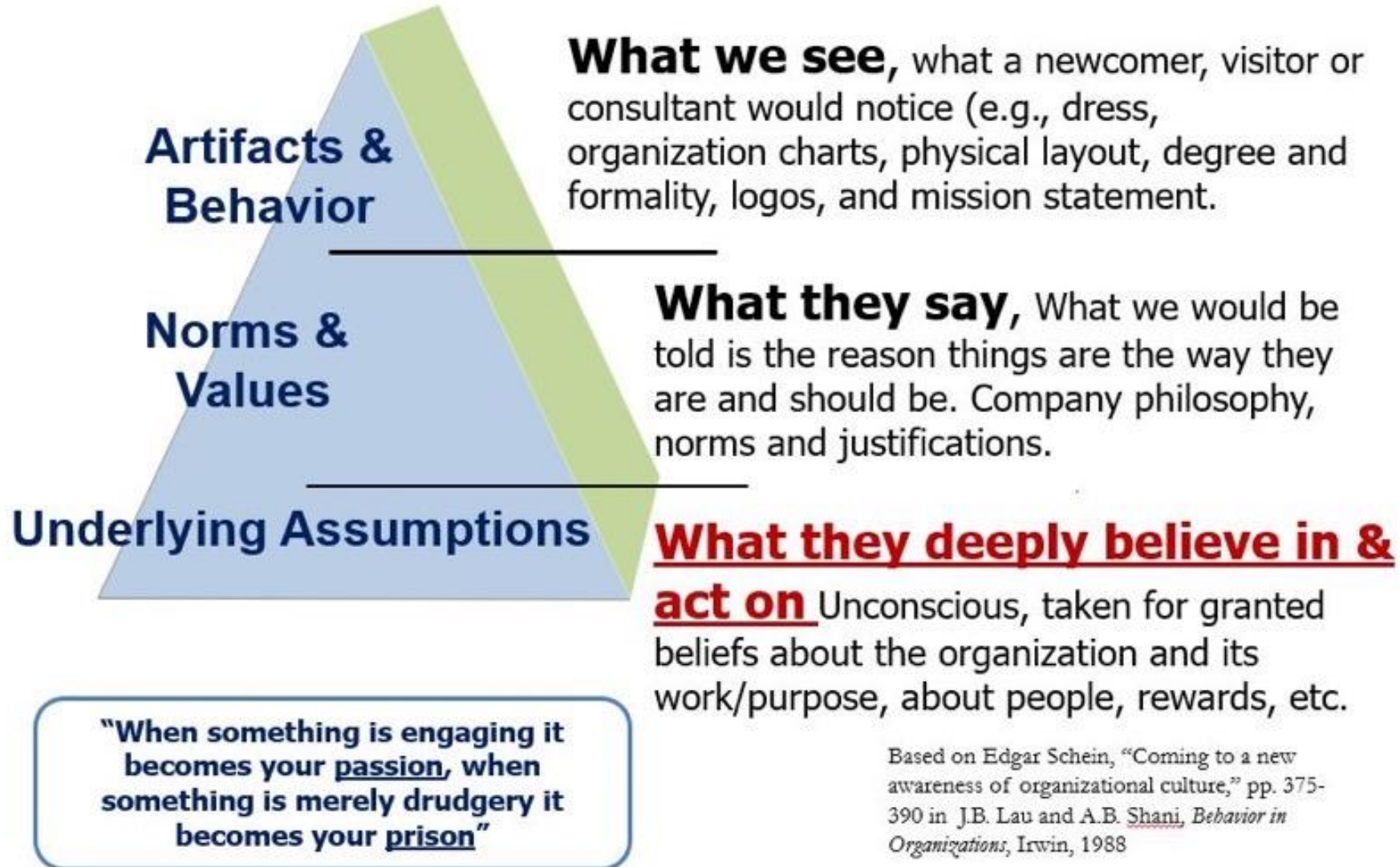


Understanding the 'Root' System

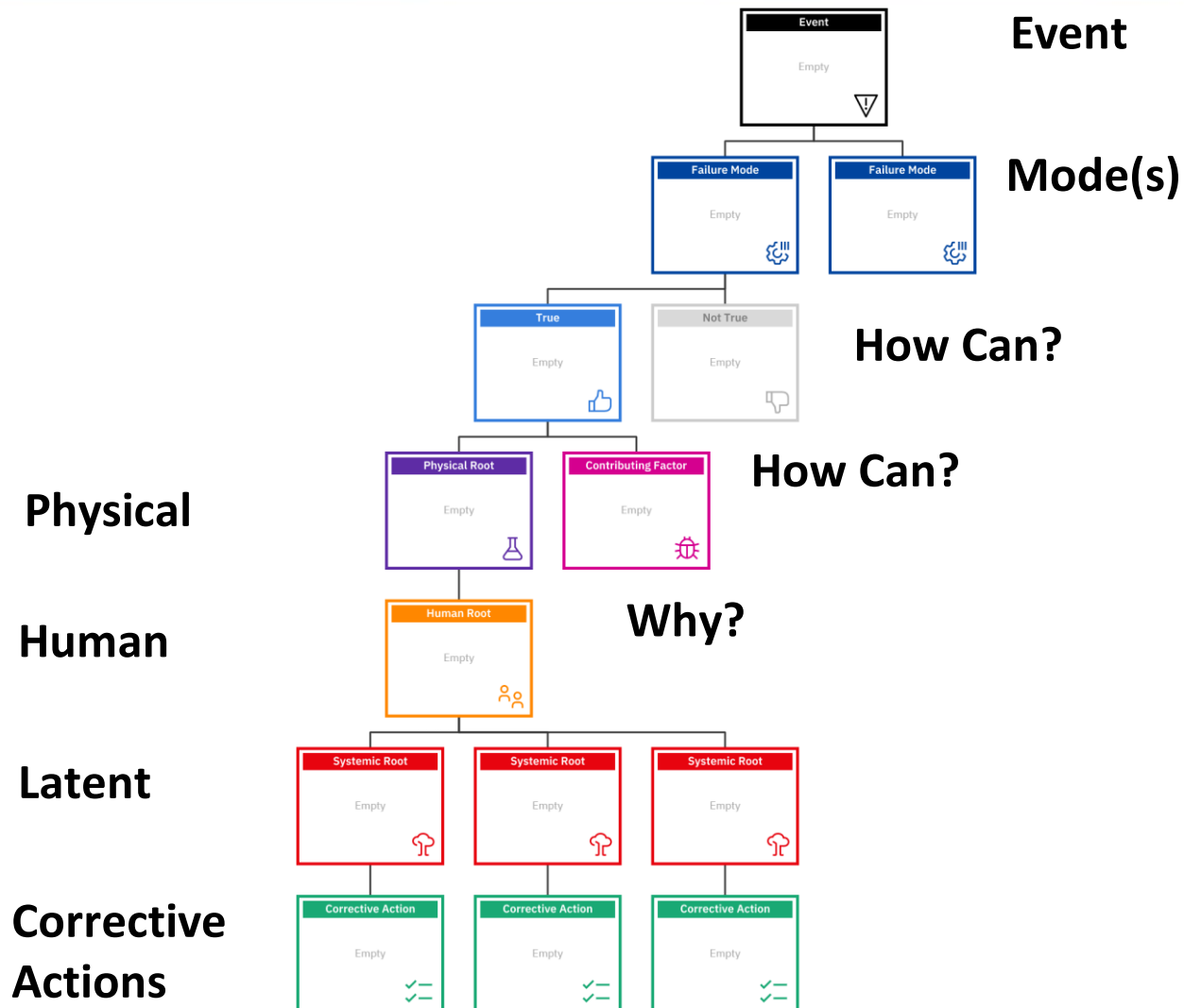


Reaction

Three Levels of Culture



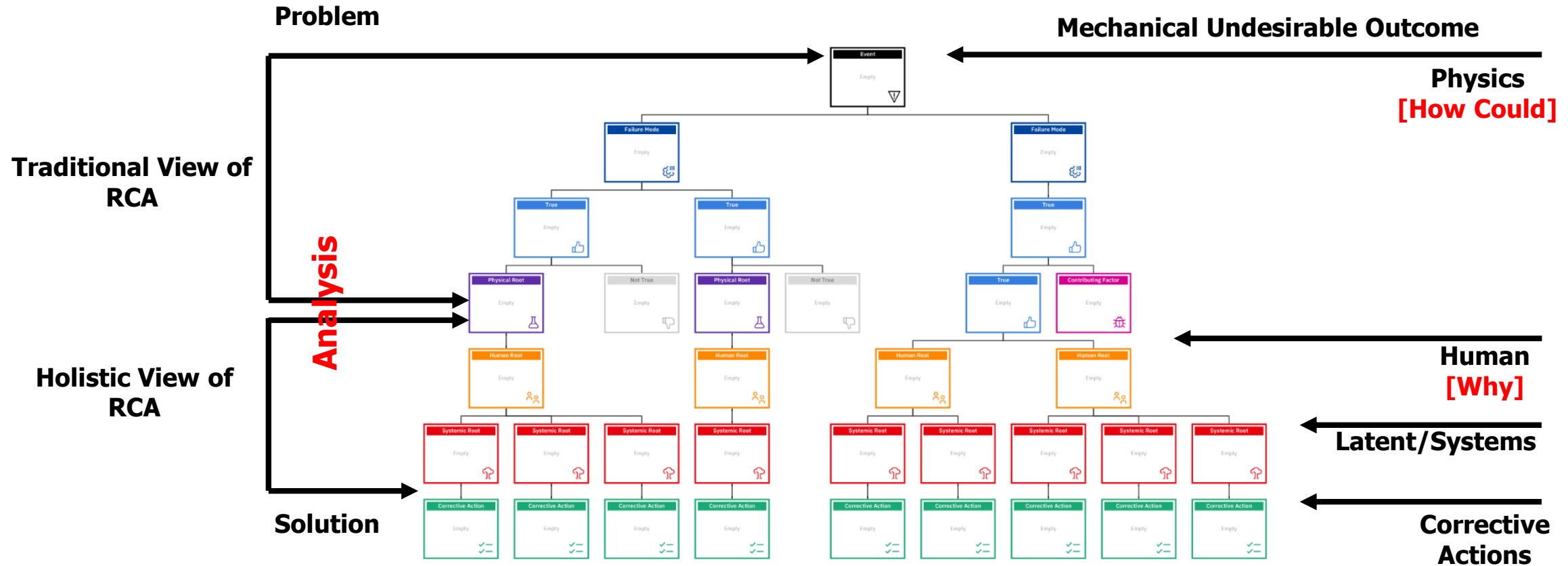
Advantages of a Properly Applied Logic Tree/Causal Factor Tree



ADVANTAGES FOR COMPLEX EVENTS

1. **Uses Multi-Linear, Cause-And-Effect Relationships**
2. **Modes Are Dependent Upon Each Other**
3. **Seeks All Possibilities By Asking HOW CAN at first?**
4. **Uses Hard Evidence to Prove All Hypotheses (Not Hearsay)**
5. **Identifies Systems Contributing to Flawed Decisions and How They Influenced the Decision-Maker**

High-Quality RCA: Nature of Undesirable Outcome is Irrelevant



Example: Reportable Injury of Employee While on the Job



What Can RCA Analysts Learn from Therapists?

An RCA Interview Should NOT be an Interrogation





Understanding Human Reasoning

How Therapy Works...

- Therapy is, in part, an ongoing interview...**NOT AN INTERROGATION**
- An interview is essentially a structured conversation where one participant asks questions and the other provides answers.
- Indeed, therapists regularly use interview techniques to gather useful information that will, in turn, help them better understand the client's difficulties, implement proper interventions, assess progress, and overcome obstacles in therapy



Basic Therapy Interviewing Techniques

Source for the following slides: Shpancer Ph.D., Noam. How Therapy Works: The Role of Basic Interview Techniques. Psychology Today Online. Accessed on 7.6.22.

#	Interviewing Technique	Description
1	Reflection	'verbal mirroring' of the client's communications, by which the therapist restates what the client has said (usually in a summarized, paraphrased form)
2	Pinpointing	clarify or 'pin down' the client's specific meaning regarding some event or interaction
3	Open-Ended Questions	An open-ended question is one that cannot be answered with a simple yes or no or another short reply
4	Confrontation	used to point out discrepancies between what the client states and what is being observed
5	Self-Disclosure	Disclosing an aspect and show <u>empathy</u> of the therapist's experience is another technique that may be used to establish rapport, support the client emotionally,
6	Silence	pauses in conversation may create a space for self-reflection, in which thoughts and emotions may become clearer and reach awareness
7	Reframing	seeing old problems or events with new eyes
8	Focusing	ensure that the therapeutic encounter remains just that—focused on the work of therapy

Basic Therapy Interviewing Techniques – Examples (1)

Source for the following slides: Shpancer Ph.D., Noam. How Therapy Works: The Role of Basic Interview Techniques. Psychology Today Online. Accessed on 7.6.22.

#	Interviewing Technique	Therapeutic Examples
1	Reflection	Client says, "I can't seem to get anywhere in life". Reflective Response: "So, you feel like you're not achieving your life goals?"
2	Pinpointing	Client says, "I was abused as a child". Pinpoint Response: "What do you mean by abused?"
3	Open-Ended Questions	Therapist says, "Did you enjoy dinner with your mother?" vs. Open-Ended question: "Tell me how dinner was with your mother?"
4	Confrontation	Client says, "I drink socially". Confrontation Response: "You've had 3 DUIs in the recent past and you said you drink in the morning to steady your nerves. Tell me what social drinking means to you."

Basic Therapy Interviewing Techniques – Examples (2)

Source for the following slides: Shpancer Ph.D., Noam. How Therapy Works: The Role of Basic Interview Techniques. Psychology Today Online. Accessed on 7.6.22.

#	Interviewing Technique	Therapeutic Examples
5	Self-Disclosure	Client says, 'People think I'm a troublemaker because I get bored quickly in school and then get in trouble.' Self-Disclosure Response: "I can relate, as I had ADHD in school and did the same thing."
6	Silence	Client says, "I get so mad at my wife I feel like hitting her". Silence then Client Responds: "Then I immediately feel guilty for being a lousy husband".
7	Reframing	Client says, "I'm nervous about my job interview". Reframing Response: "That's a good thing, it means you care".
8	Focusing	Client goes off on tangent about child's accomplishments. Focusing Response: "Your child sounds amazing, and you should be proud. Now let's pick up where we left off talking about your mother-in-law"

Basic RCA Interviewing Techniques - Examples

#	Interviewing Technique	RCA Facilitation Examples
1	Reflection	Interviewee says , "I took a shortcut to ensure there was no production loss". Reflective Response : "As you know, this is very common. When one feels time pressured, they take short-cuts in order to maximize production"
2	Pinpointing	Interviewee says , "We always take that short cut". Pinpoint Response : "Tell me more details about how often 'always' is, and specific of this short cut"
3	Open-Ended Questions	RCA Facilitator says , "Did you follow the procedure?" vs. Open-Ended question : "Explain the details of the current procedure and why circumventing it seemed appropriate at the time"
4	Confrontation	Interviewee says , "All those bolts were tightened when I did the inspection yesterday". Confrontation Response : "2 of the 8 coupling bolts were missing and the remaining ones had oxidation about 1/4" from the head, indicating they were loose for some time. Could you have your days mixed up and possibly been distracted at the time?"

Basic RCA Interviewing Techniques - Examples

#	Interviewing Technique	RCA Facilitation Examples
5	Self-Disclosure	Interviewee says, 'People think I'm a troublemaker because I'm opinionated.' Self-Disclosure Response: "I can relate, as I was just like that. Then I got into the investigation business and learned I needed evidence to support my claims...it really works"
6	Silence	Interviewee says, "I get so mad when my boss doesn't listen to me". Silence then Client Responds: "Then I just give up and stop telling him about the safety hazards I see".
7	Reframing	Interviewee says, "They say Safety is #1, but their actions say differently". Reframing Response: "Do you feel Safety is just a slogan and if so, why?".
8	Focusing	Interviewee goes off on tangent about being reprimanded in the past. Focusing Response: "I'm sorry you had this impactful event, when did this happen [usually it's been years and they still carry the burden]"

Interviewing Role Playing Exercise

Role Playing Exercise

Human Root

Supervisor Implemented a Change in PM Interval Not Following the Lubrication Standard



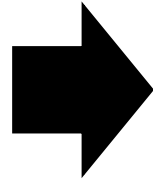
What Mgmt *Usually* Wants to Know ASAP:

1. What rule was violated?
2. Who broke the rule?
3. How bad were the consequences?
4. What level of discipline is warranted?

Role Playing Exercise

Human Root

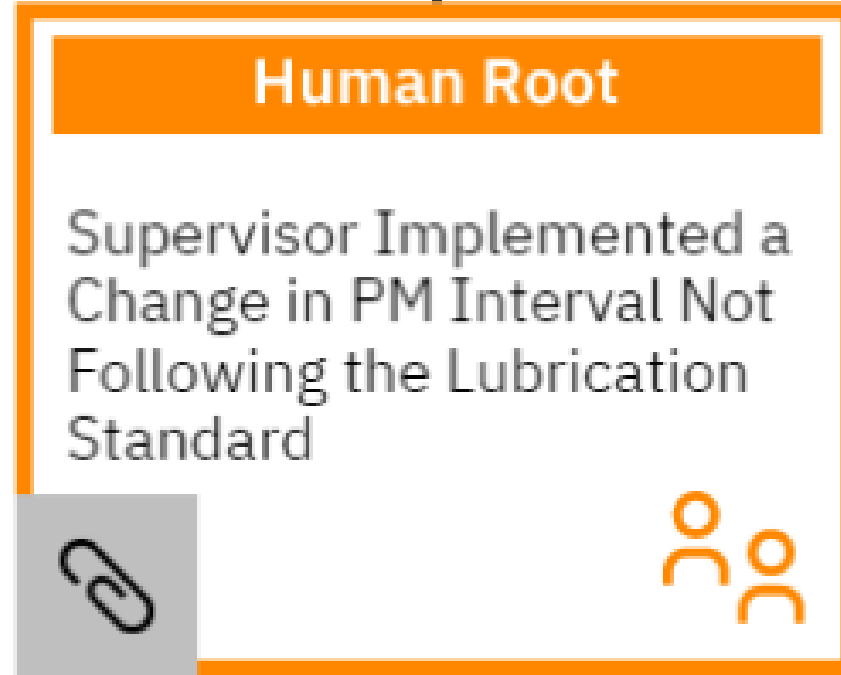
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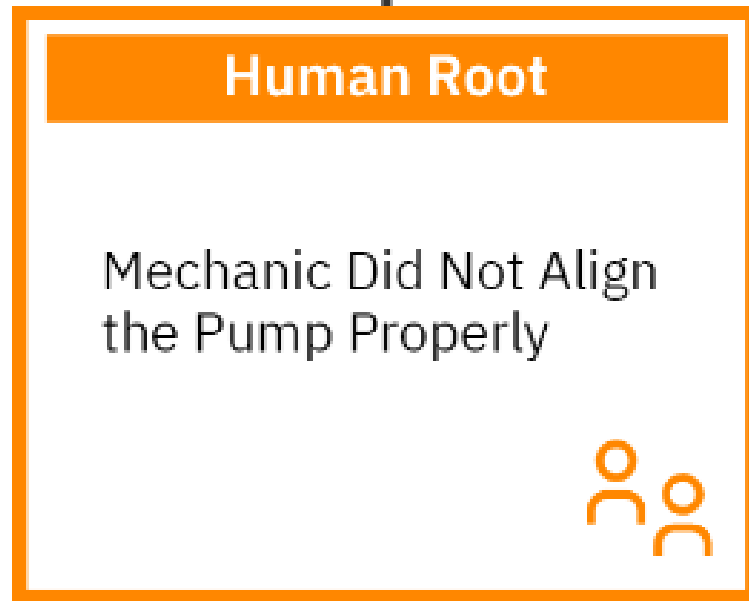
Separating the Interview from the Analysis:

1. Interviews are NOT interrogations
2. They are data gathering opportunities
3. They are necessary for reconstructing the facts
4. They are NOT to assign blame
5. They are intended help us learn from errors to prevent them in the future

At the Human Root, What Questions Should We Be Asking in Our Interviews?



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At the Human Root, What Questions Should We Be Asking in Our Interviews?

Human Root

Purchasing Changed
Vendors (Parts Not
Like-for-Like)

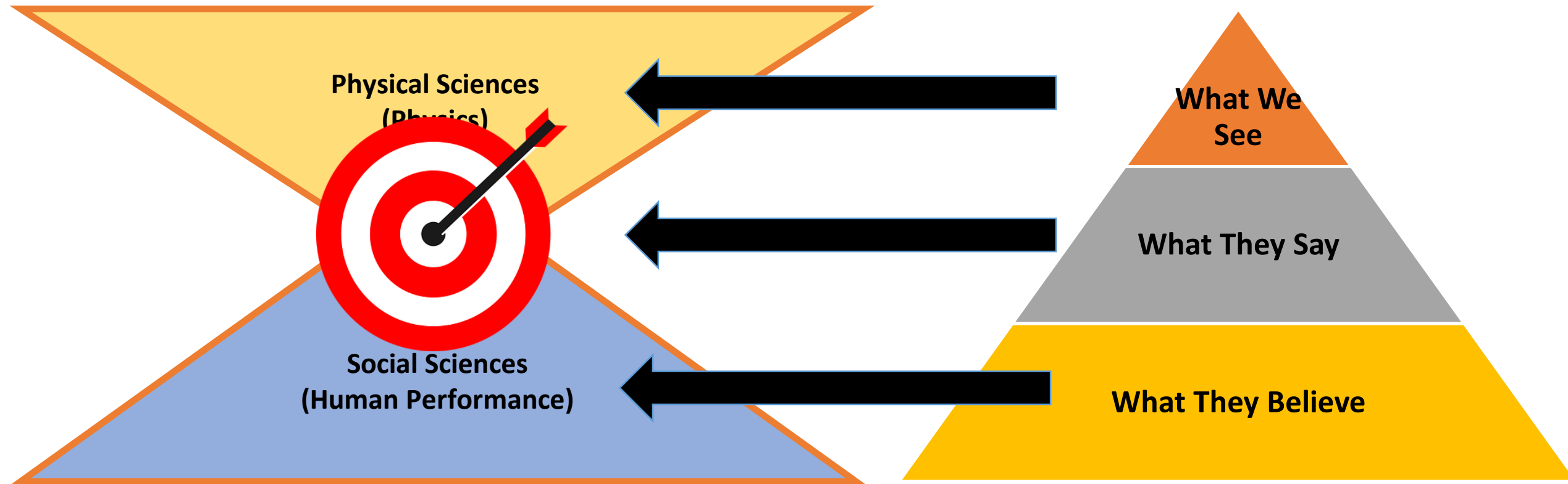


How Does This Different Approach to Interviewing Help RCA Effectiveness?

- Non-personal and non-threatening approach to interviewing
- Avoids the perception of an 'interrogation'
- Seeks to provide a psychologically safe environment where candor and honesty are encouraged and protected
- Demonstrates the organization is interested in uncovering the systemic contributions to the bad outcomes (i.e. – looking in the mirror and admitting management was part of the problem)
- Creating such a trusting rapport will send a message through the grapevine that others should participate to voice their opinions and create a safer work environment
- Shows that 'blame' is not the goal, identifying poor systems that let down the decision-maker is the goal

Revisiting The RCA Hourglass

Bringing it All Together



Based on Edgar Schein, 'Coming to a New Awareness of Organizational Culture' (1988).

Preferred Interviewing Techniques Poll

Which of These Interviewing Techniques Do You Find Most Effective?

- ☐ Reflection
- ☐ Pinpointing
- ☐ Open-Ended Questions
- ☐ Confrontation
- ☐ Self-Disclosure
- ☐ Silence
- ☐ Reframing
- ☐ Focusing
- ☐ None of the Above
- ☐ All of the Above
- ☐ Other...



Q&A

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SAVE THE DATE

A Case Study



Case Background

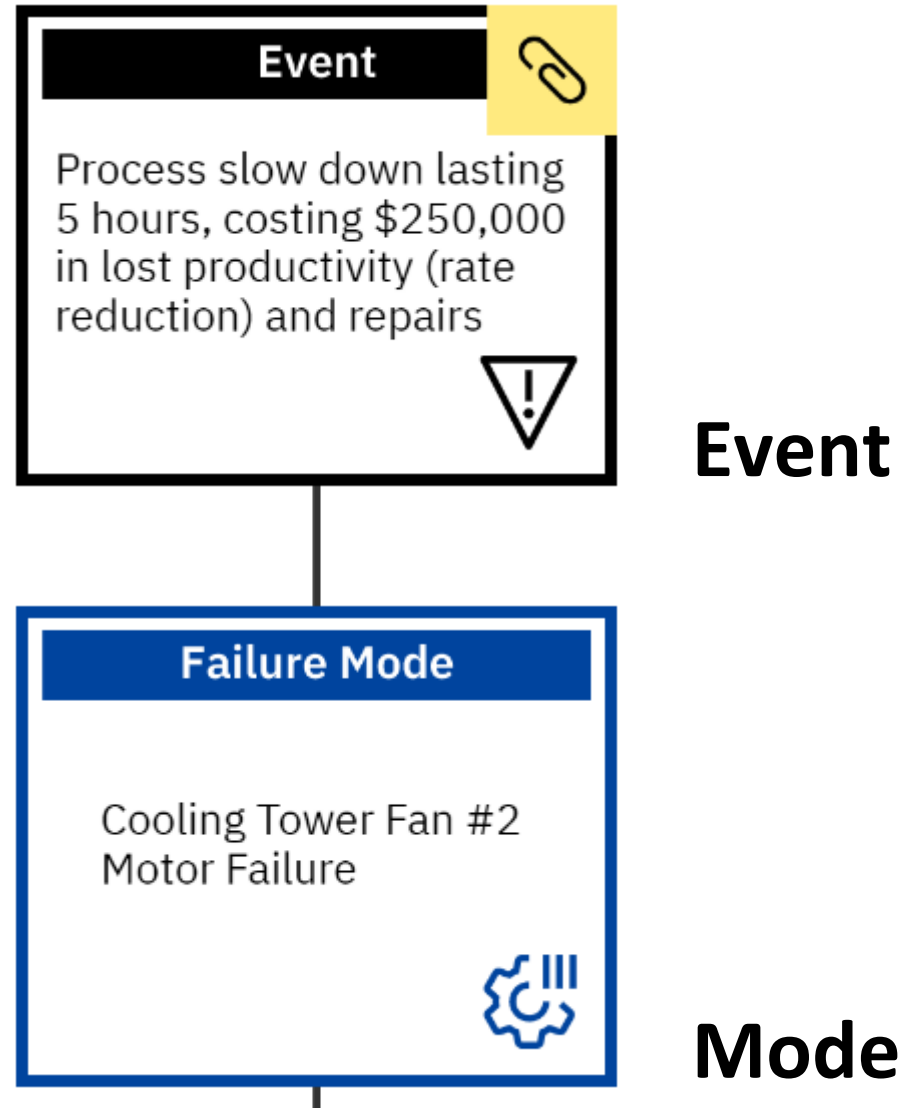
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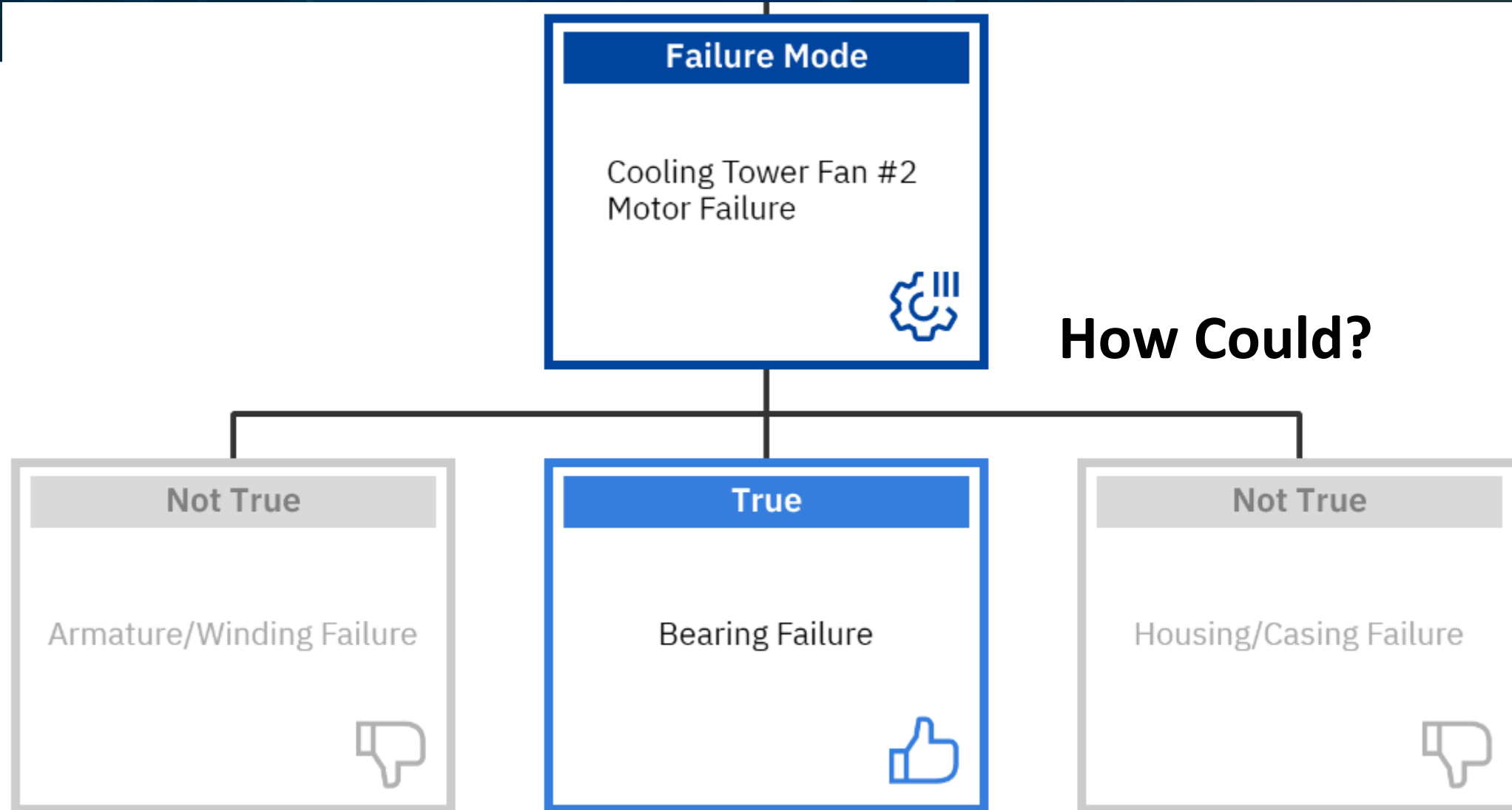
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The Logic Tree Top Box

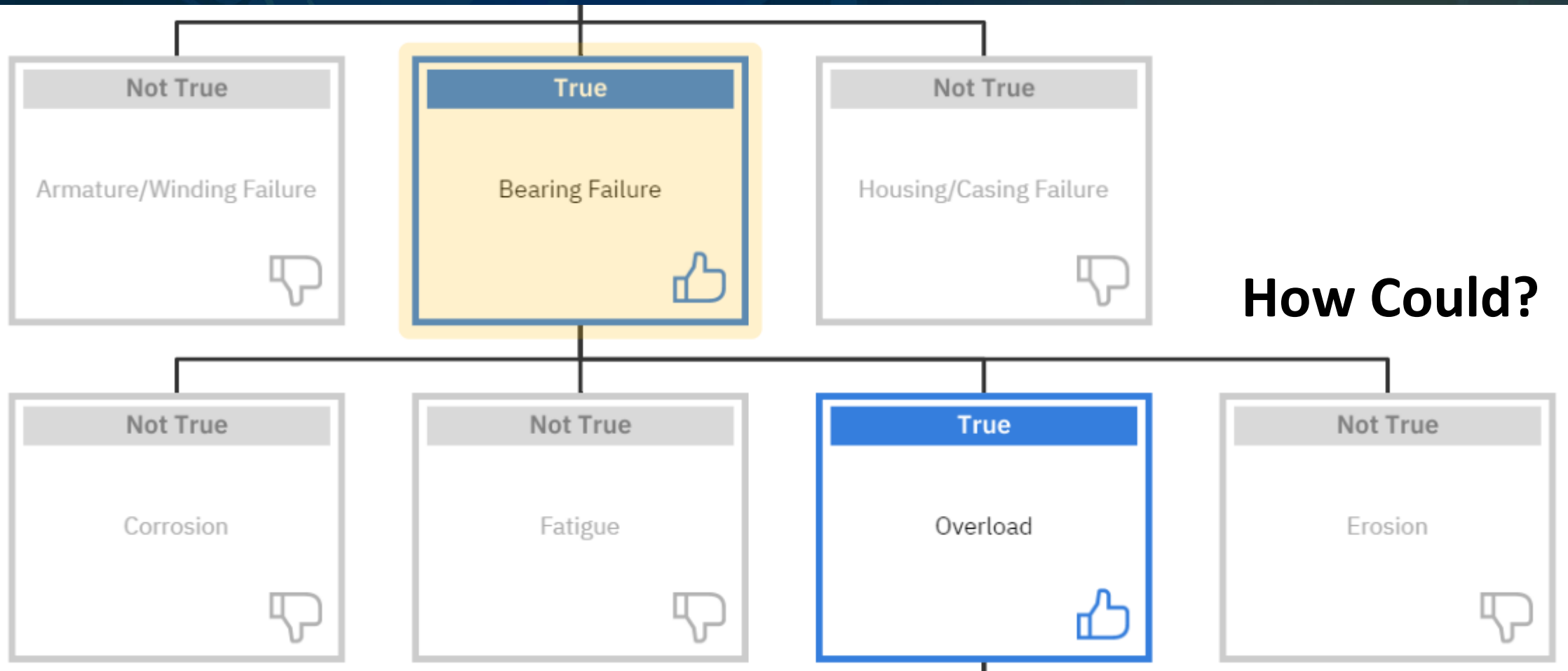


'How Could?' Exploration on Physics of Failure



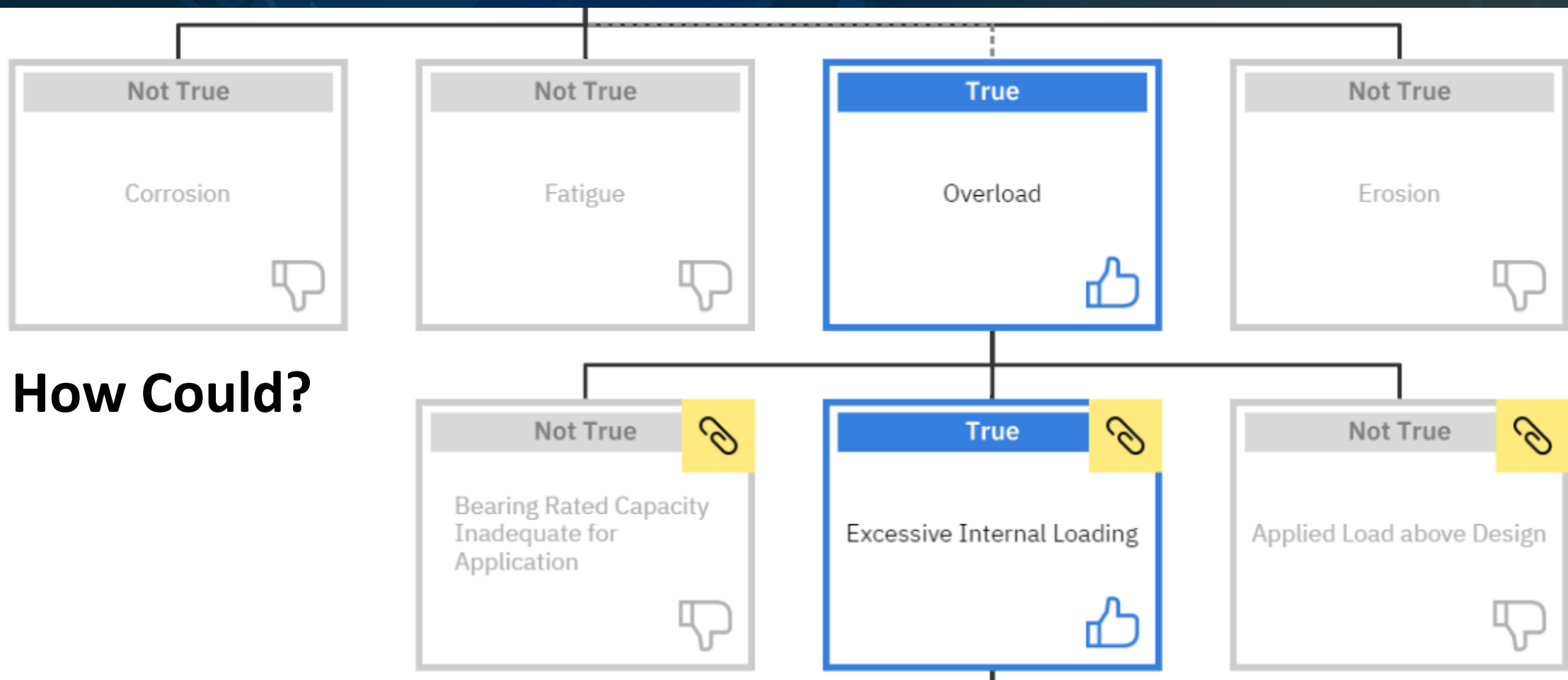
Source: Screen Shots Used w/Permission from www.Reliability.com

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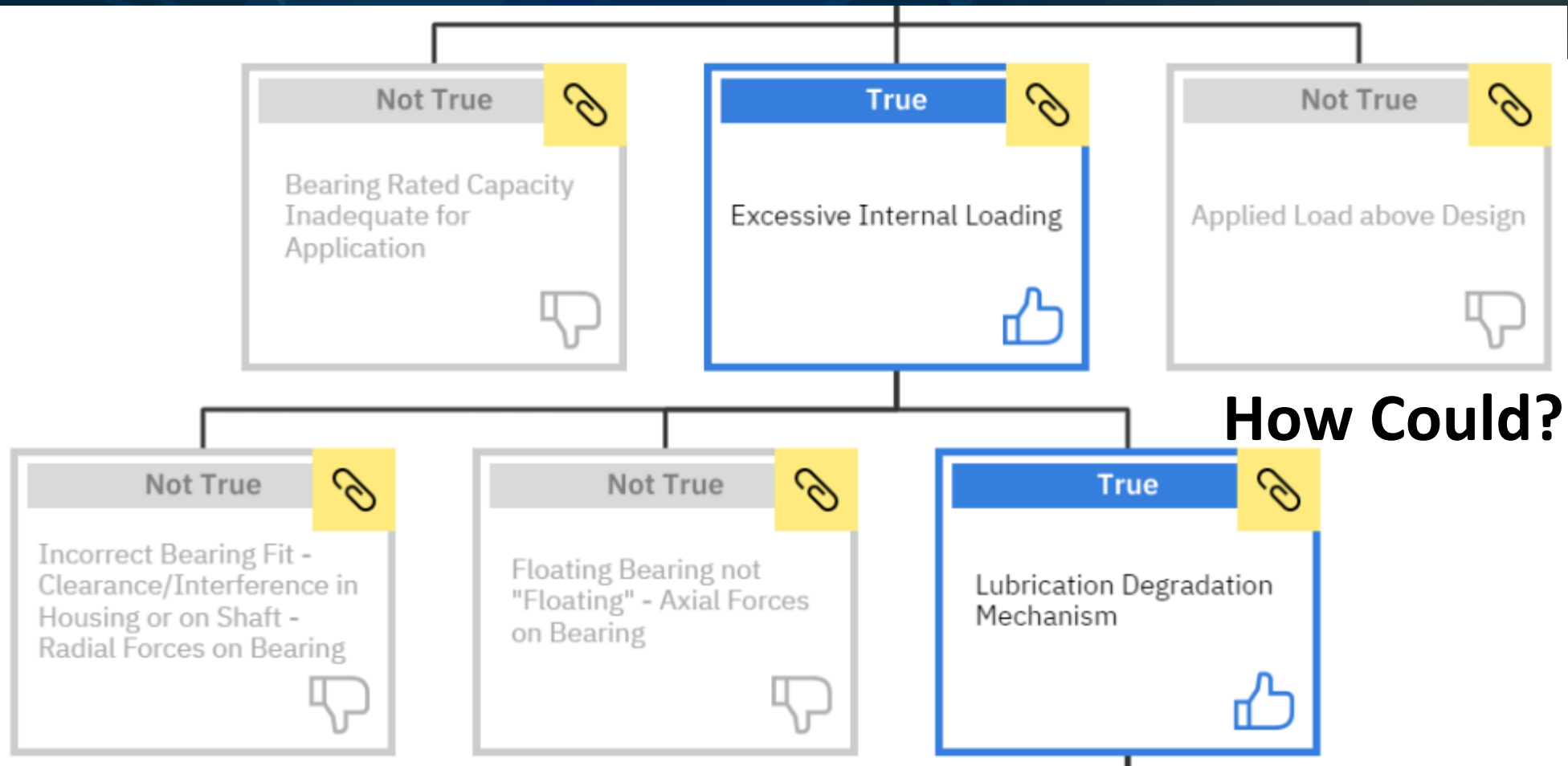


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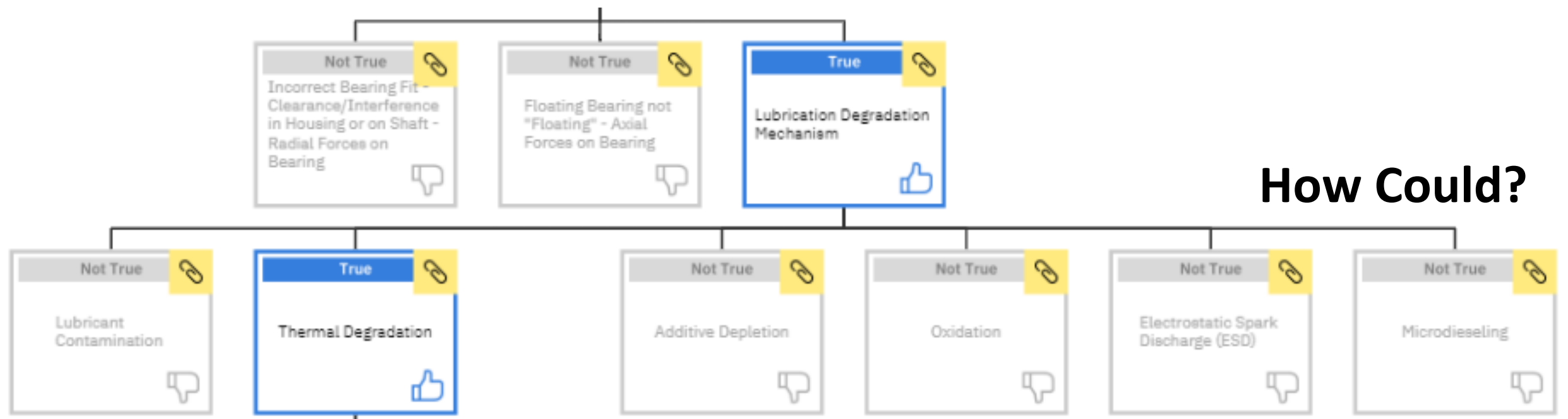


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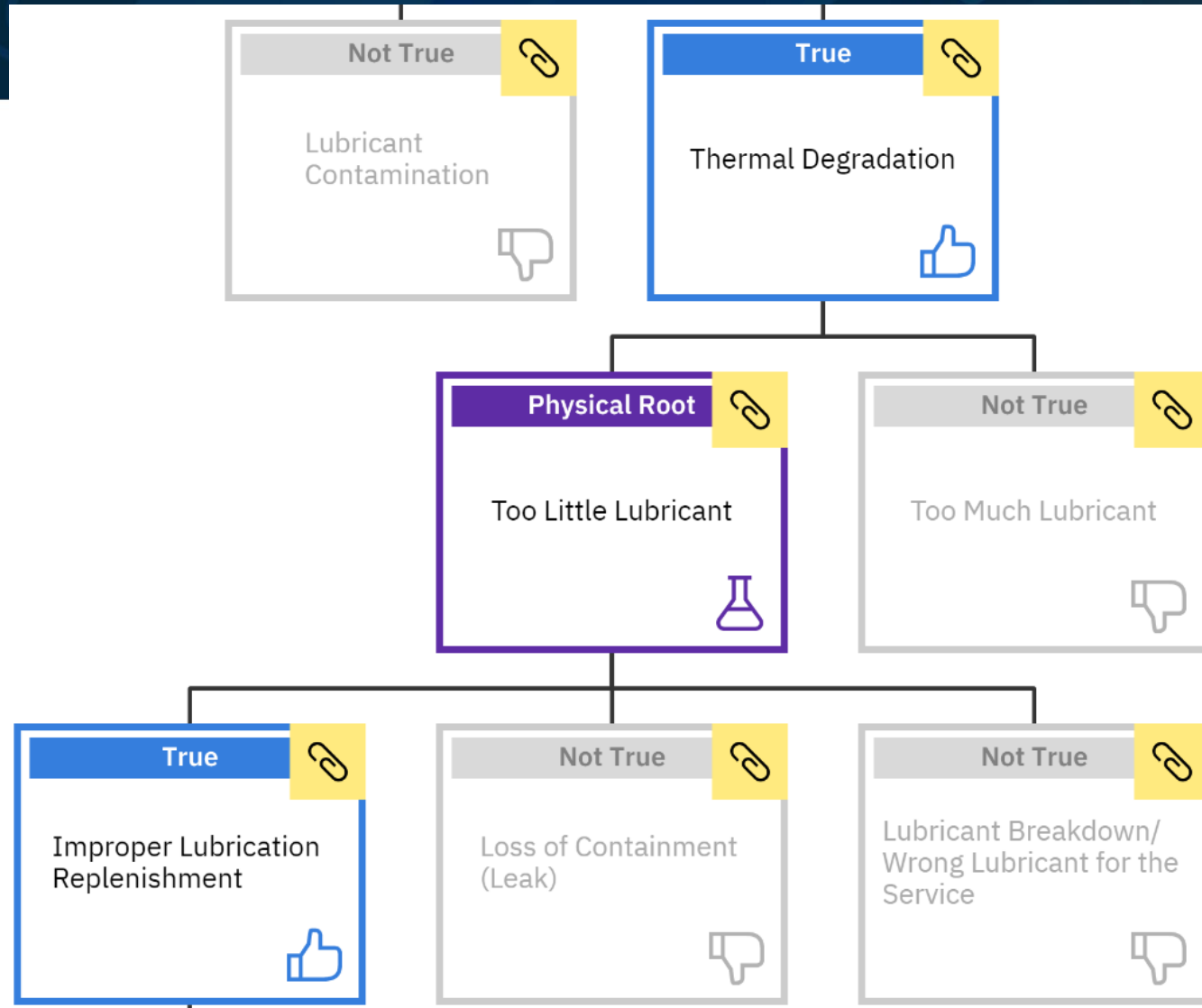
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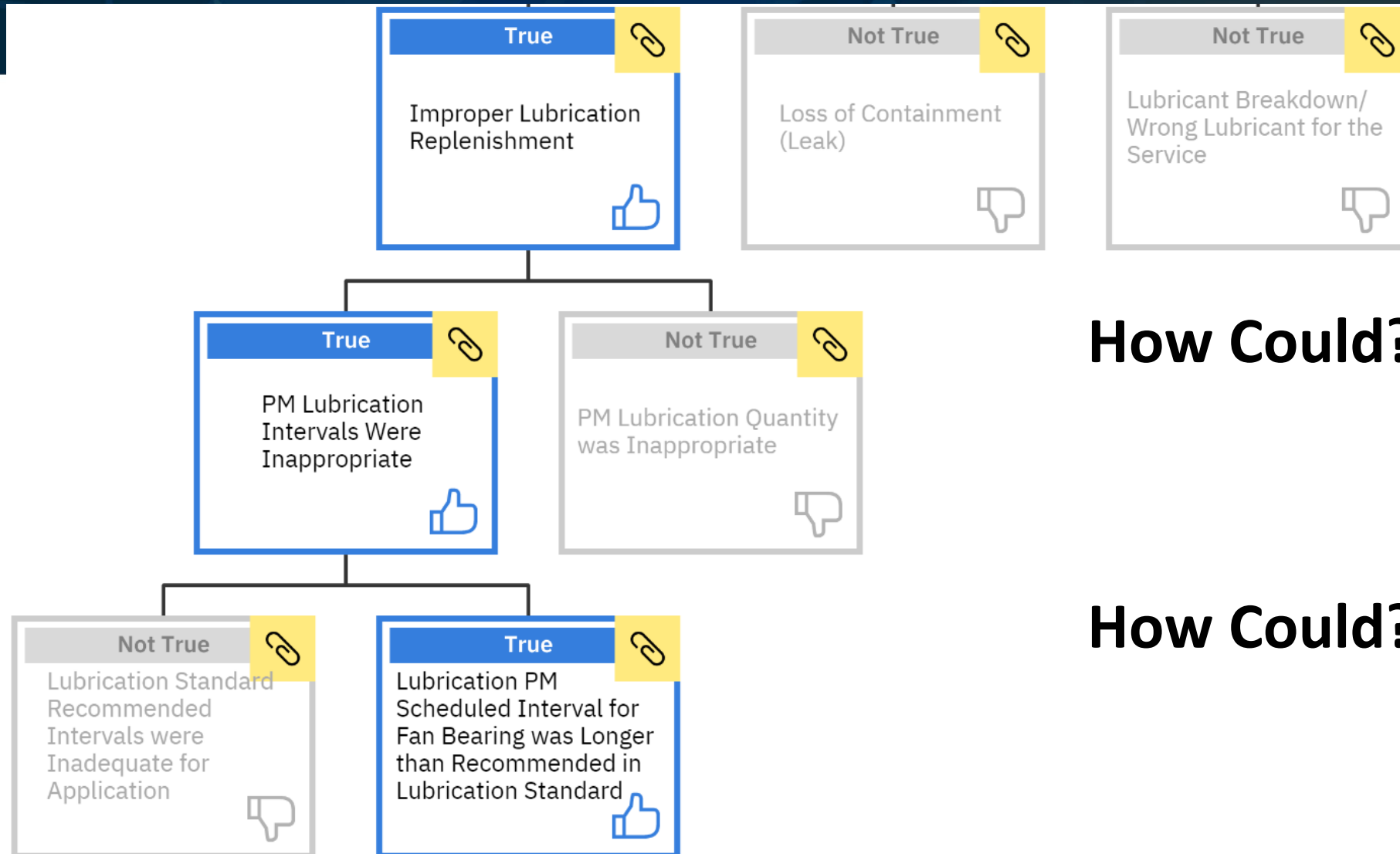


How Could?

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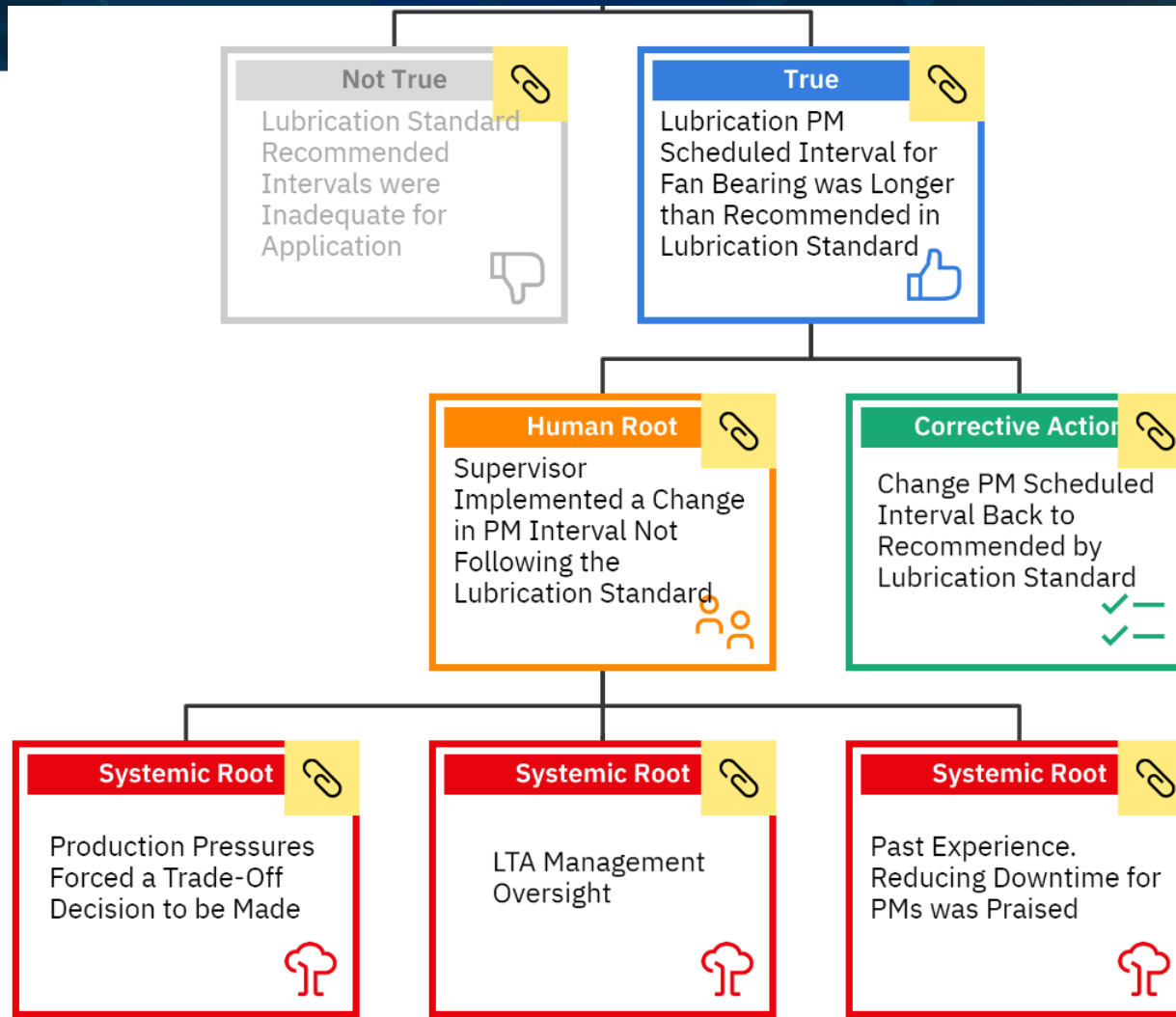
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'How Could?' Exploration on Physics of Failure



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Transition from 'How Could?' to 'Why?'



How Could?

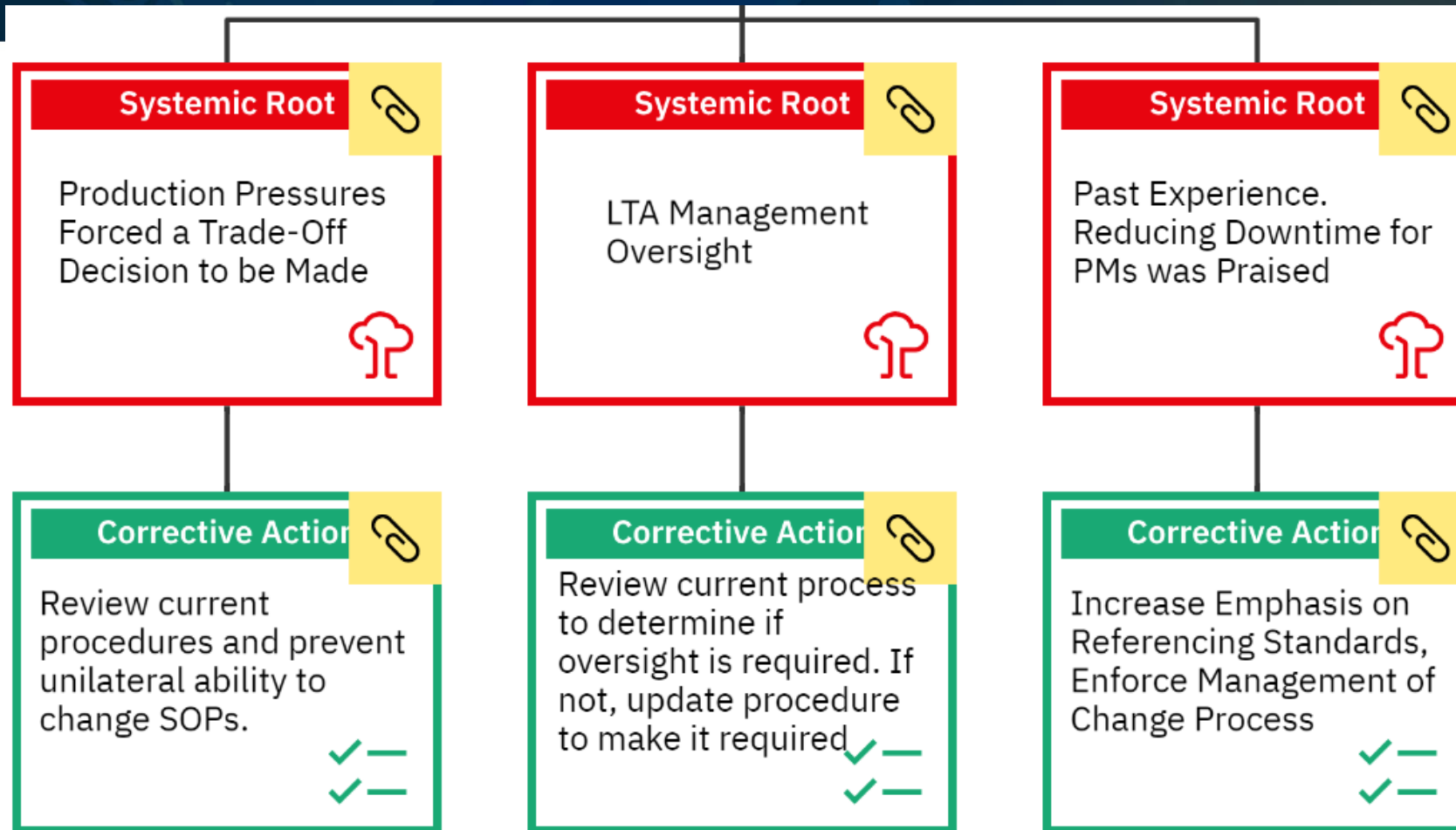
Why?

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The Solution(s)



The Conclusions & Corrective Actions



Source: Screen Shots Used w/Permission from www.Reliability.com