

The Real Causes of Future Events

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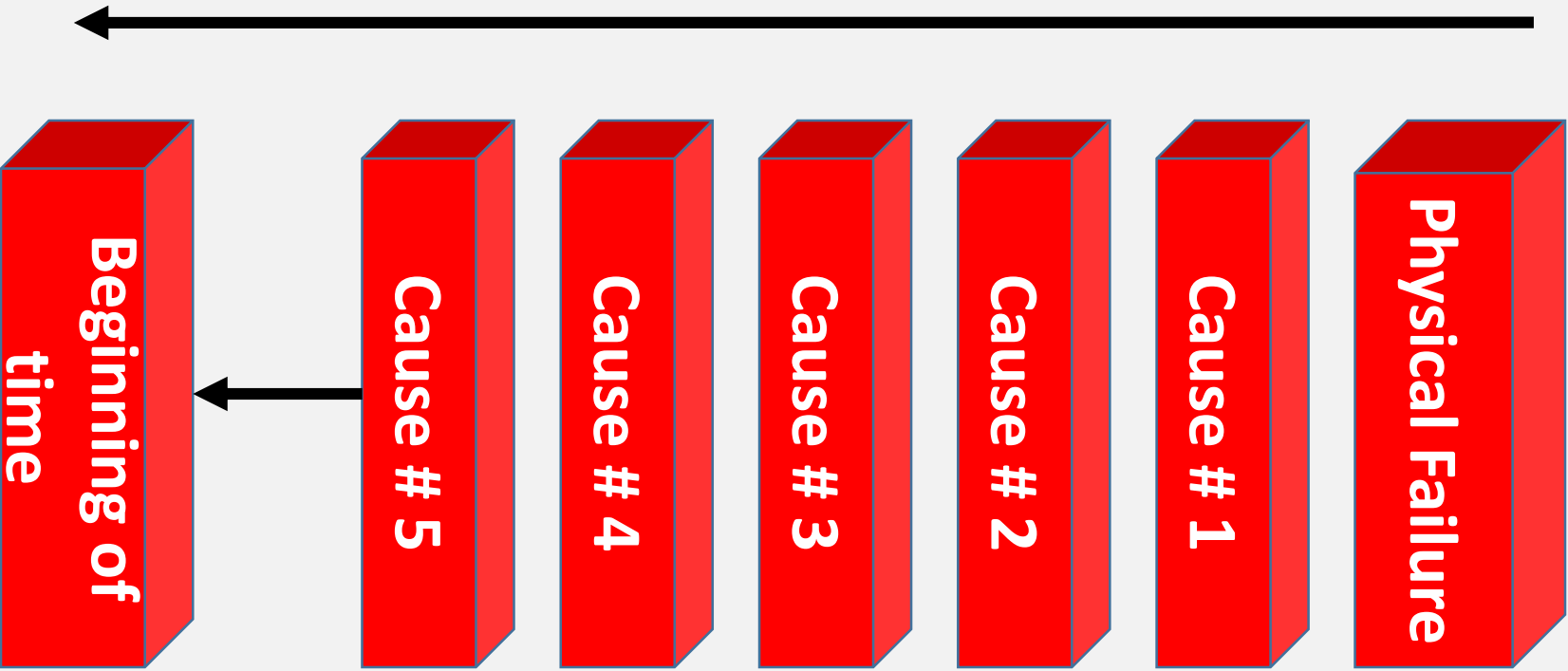
Incident

Two workers were lifting a piece of pipe from ground level to the back of a truck and one of the workers sustained a hernia.

Why do we Investigate?

- **Because There Was an Incident?**
- **Because OSHA Said So?**
- **So We Can Find Someone/Something to BLAME it on?**
- **To Find The Root Cause?**
- **To Learn?**
- **To Understand?**
- **To Prevent Future Events?**

TIME LINE





Three Sources of Evidence

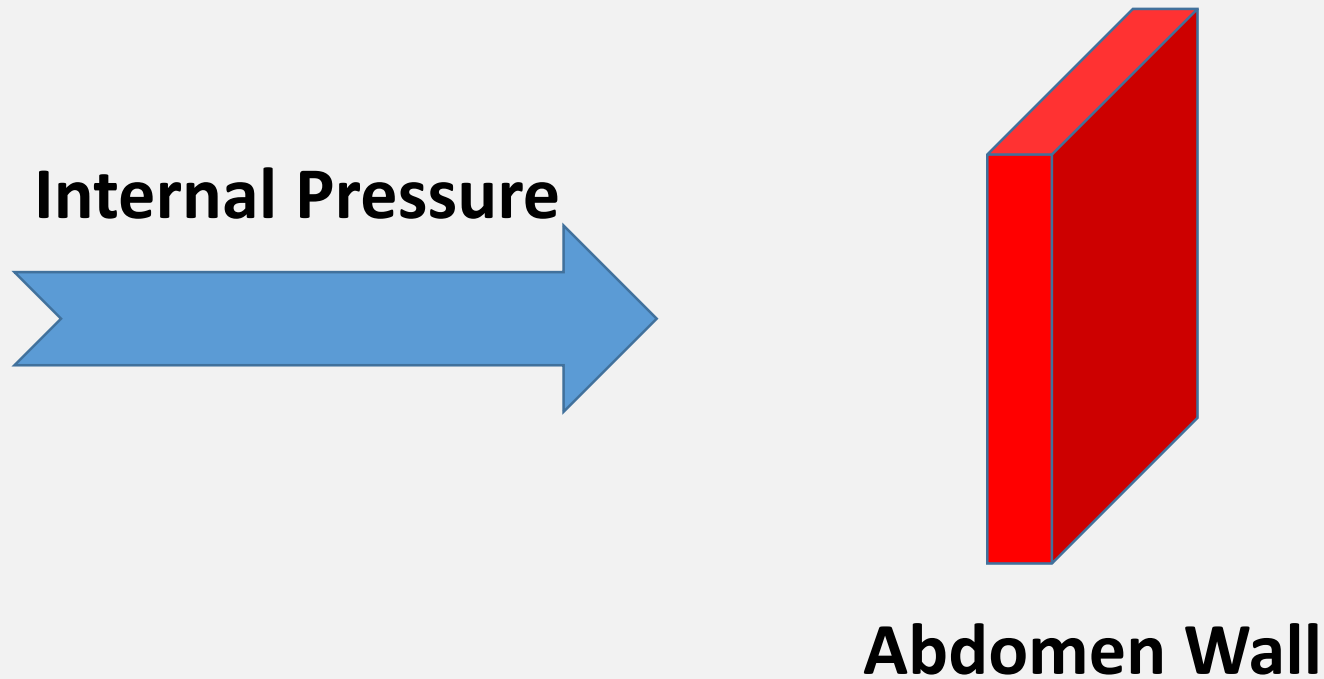
- **Physical (Position and Parts)**
- **Paper**
- **People**

Physical Causes

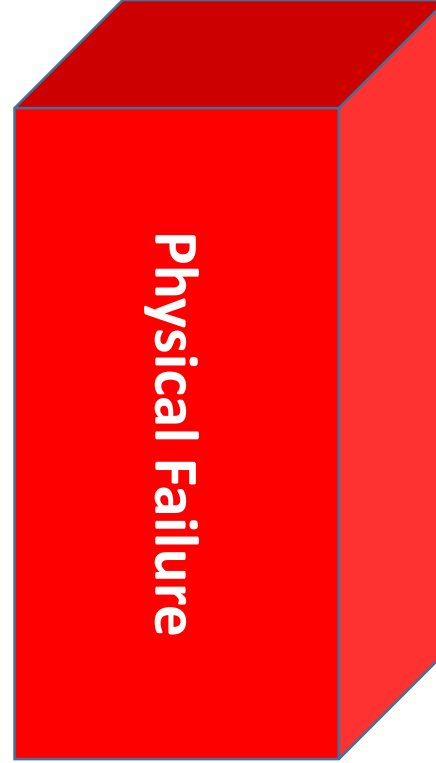
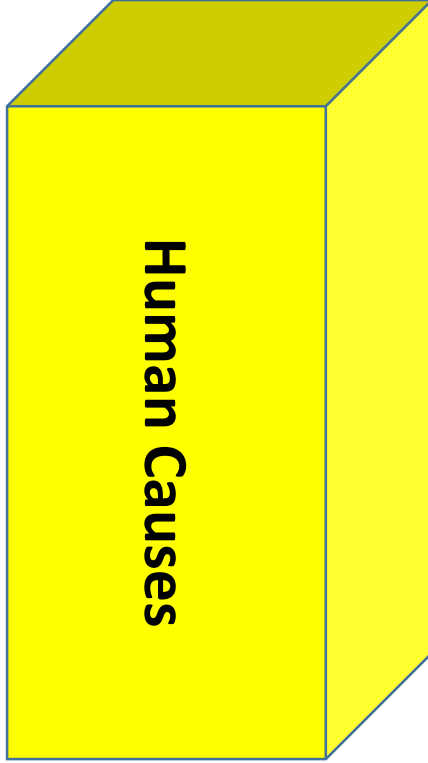
Physical Failure

Physical Cause

Internal pressure overcame containment strength

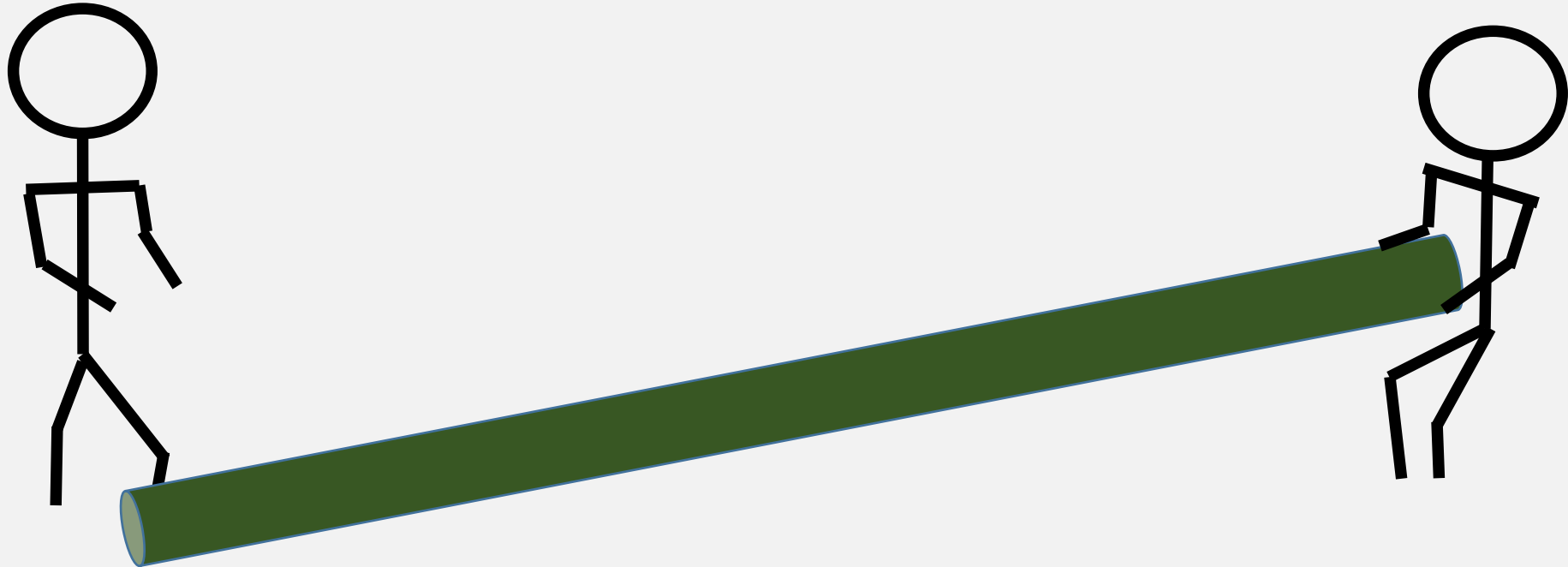


Time Line



Human Cause

Who did What Wrong That Directly Contributed to the Physical Cause?



Worker Manually Lifted the 4" .375 wall, 15 ft section of pipe

Time Line



Human Causes

Physical Causes

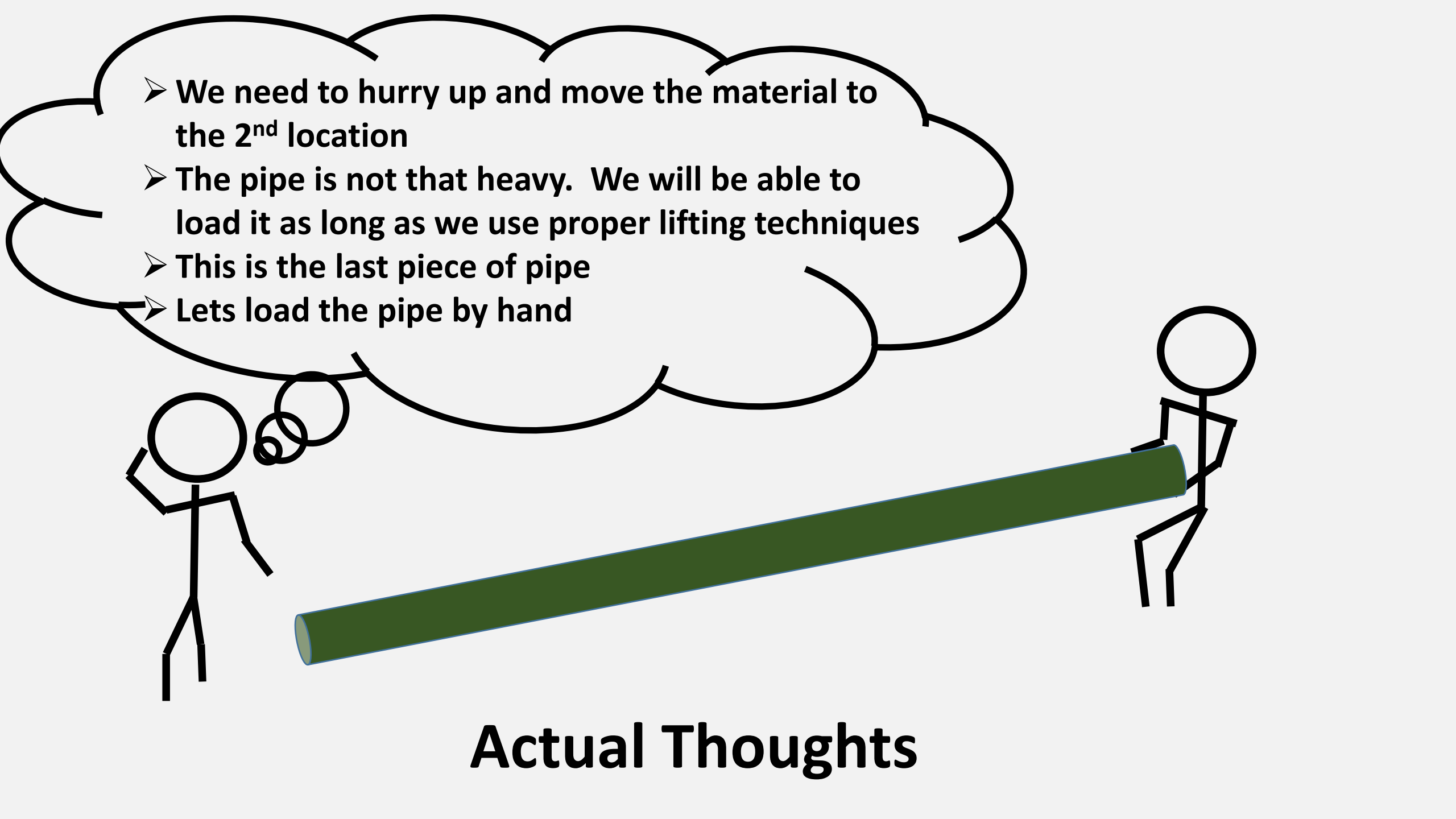
Physical Failure



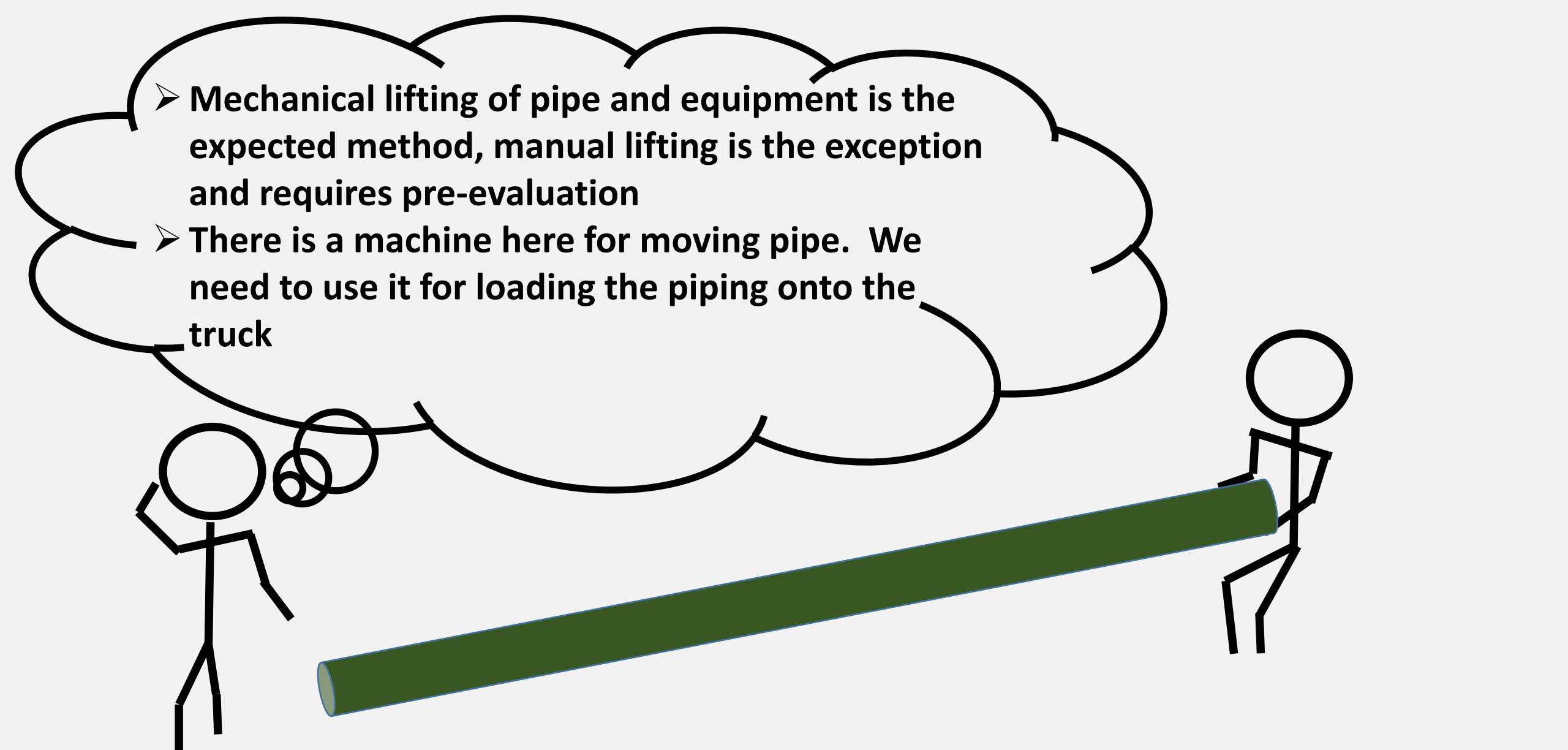
“When an inner situation is not made conscious, it appears outside as fate” - Carl Jung

Understand the Situation

- Pipeline Equipment installation project at 2 locations to last 4 days
- Pipeline isolation and blowdown scheduled for Sunday
- Gas marketing concerns moved start date by one day
- Projects expected completion date to move back one day - not communicated
- Isolation and LOTO was done and verified
- Re-isolation and LOTO set project back another ½ day
- Several calls were made to location for completion time
- Pipe pieces moved to 2nd location
- Manual lifting done every day
- If it was too heavy to lift, I would not be able to lift it.

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- We need to hurry up and move the material to the 2nd location
 - The pipe is not that heavy. We will be able to load it as long as we use proper lifting techniques
 - This is the last piece of pipe
 - Lets load the pipe by hand

Actual Thoughts

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- Mechanical lifting of pipe and equipment is the expected method, manual lifting is the exception and requires pre-evaluation
 - There is a machine here for moving pipe. We need to use it for loading the piping onto the truck

Desired Thoughts

The Gap



I thought this way



**I should have
thought this way**

**What is it About the Way We Are That Influenced
The Gap in These Thoughts?**

Then Ask.....

**What is it About the Way I Am That Influenced
The Gap in These Thoughts?**

Present Tense

**The Present State of the Way
We Are, Both Organizationally
and Individually, Will
Influence Future Thoughts
Which Will Produce
Behaviors!**

Latent Causes

Organizational

- **We do not communicate project changes very well and we know this is wrong.**
- **We don't use lifting equipment or mechanical advantage as often as we should and we know that this is wrong.**

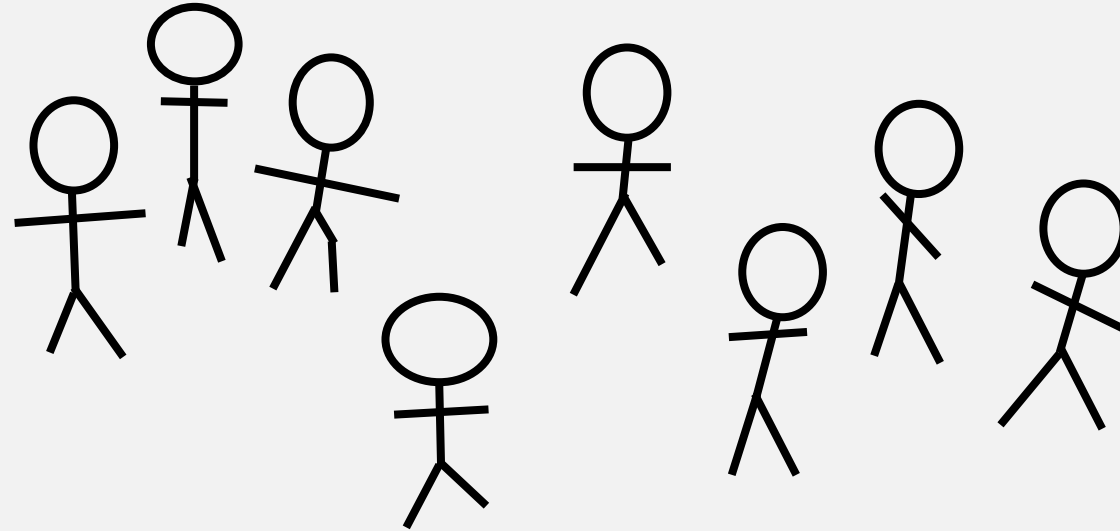
Latent Causes

Personal

- **I tend to not evaluate the weight of material before I attempt to lift, if it moves I tend to think I can lift it and I know that is wrong.**

So Why the Personal Introspection?

All the “I’s”



Make up the “We”

Our Culture

Thank You!

Questions?



<http://www.fail-safe-network.com/>