

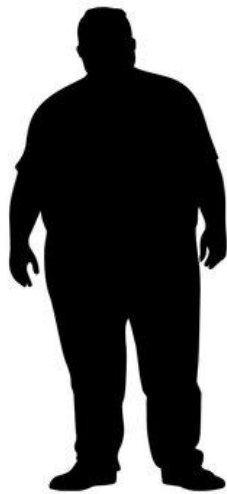


Building and Sustaining a Culture of Safety through Human Factors

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Healthy &
Attractive



Healthy &
Attractive





Hand Hygiene Practice

**Knowing what is right and lawful
does not guarantee compliance**

Will You Always Do What Is Right?

Civil Defence Emergency Handbook



Going Against Intuition

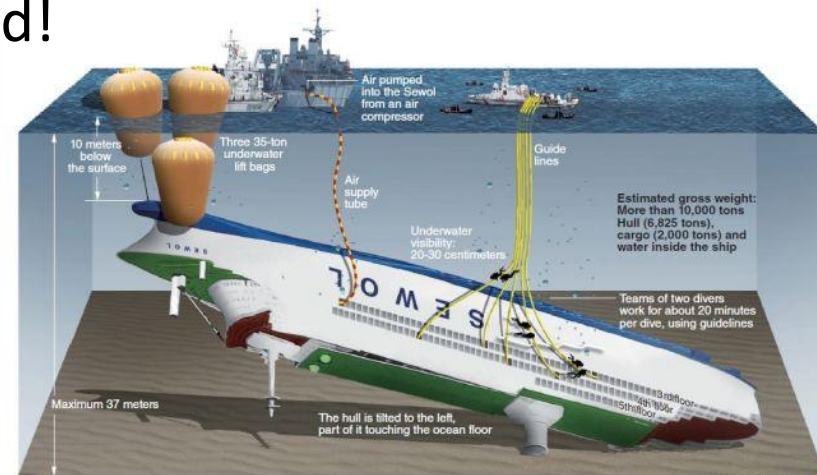
Is it easy to ignore **peer pressure**?

Cognitive script - sequence of expected behaviors for a given situation, e.g.: in an exam, one must sit and wait quietly

Complying with **group norm** feels good!

i.e.: ignore the smoke

“Before taking the helicopter, I think I looked back at my friends. I wonder how they would look at me, did they resent me for leaving first.”



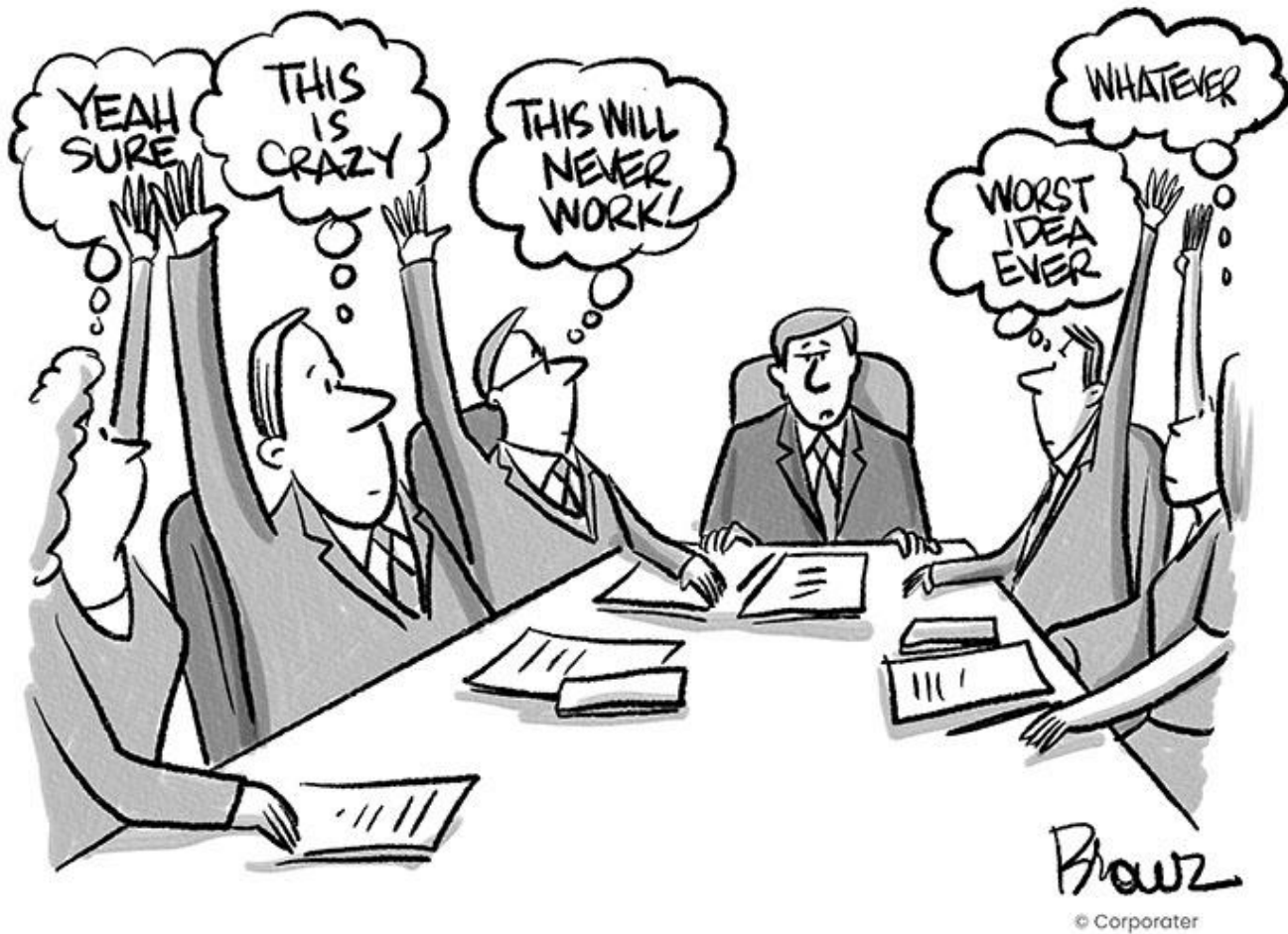
Graphic by Nam Kyung-don

Who Defines Group Norms? hint: not just senior management



Unspoken, unwritten set of informal rules that *govern* individual behaviors in a *group*. See also: social norms, culture

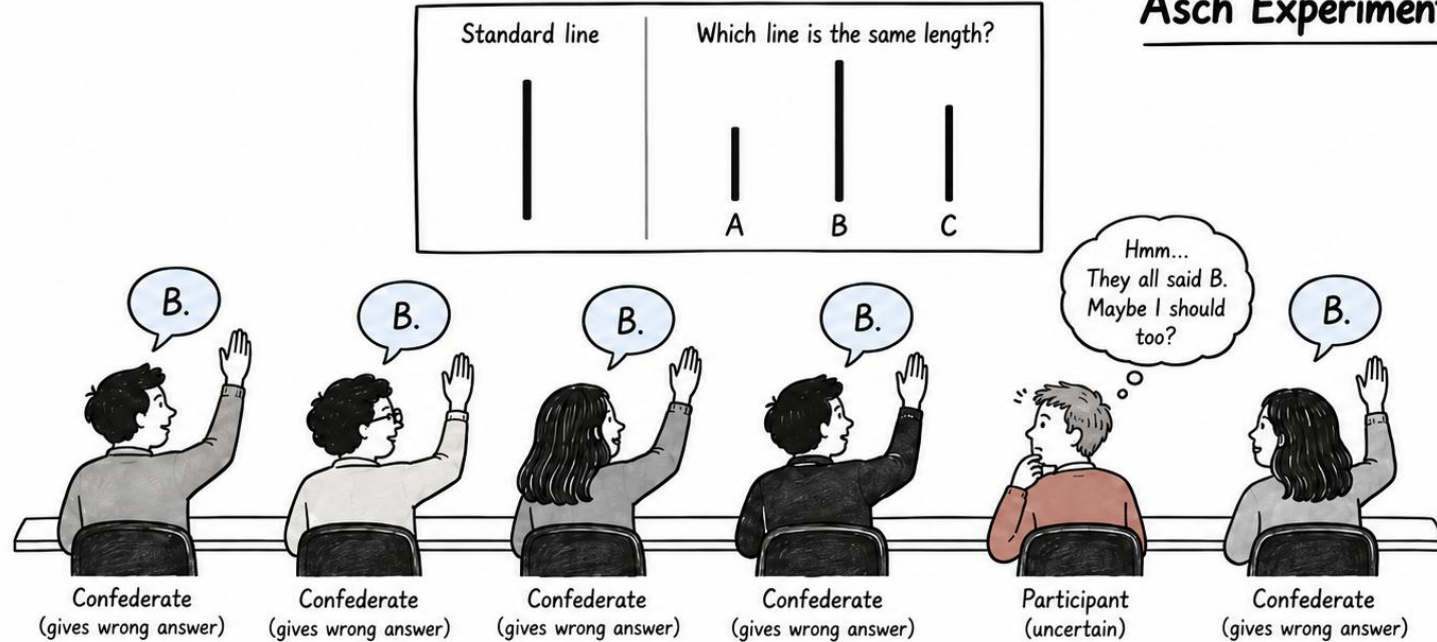
Respecting elders, working overtime, taking shortcuts etc.



Making a choice, even if **obviously correct**, can be **discomforting** when you have to disagree with the entire group.

"Everyone in favor raise your hand!"

Asch Experiment (1956)



⇒ Key findings ⇐

- The **bigger the group** (at least a majority of 3 or more), the higher the tendency to conform.
- When we are **uncertain**, we look to others for confirmation.
- The **harder the task**, the greater the conformity.
- The presence of **an ally** eliminates unanimity, makes you feel safe, and thus reduces conformity.

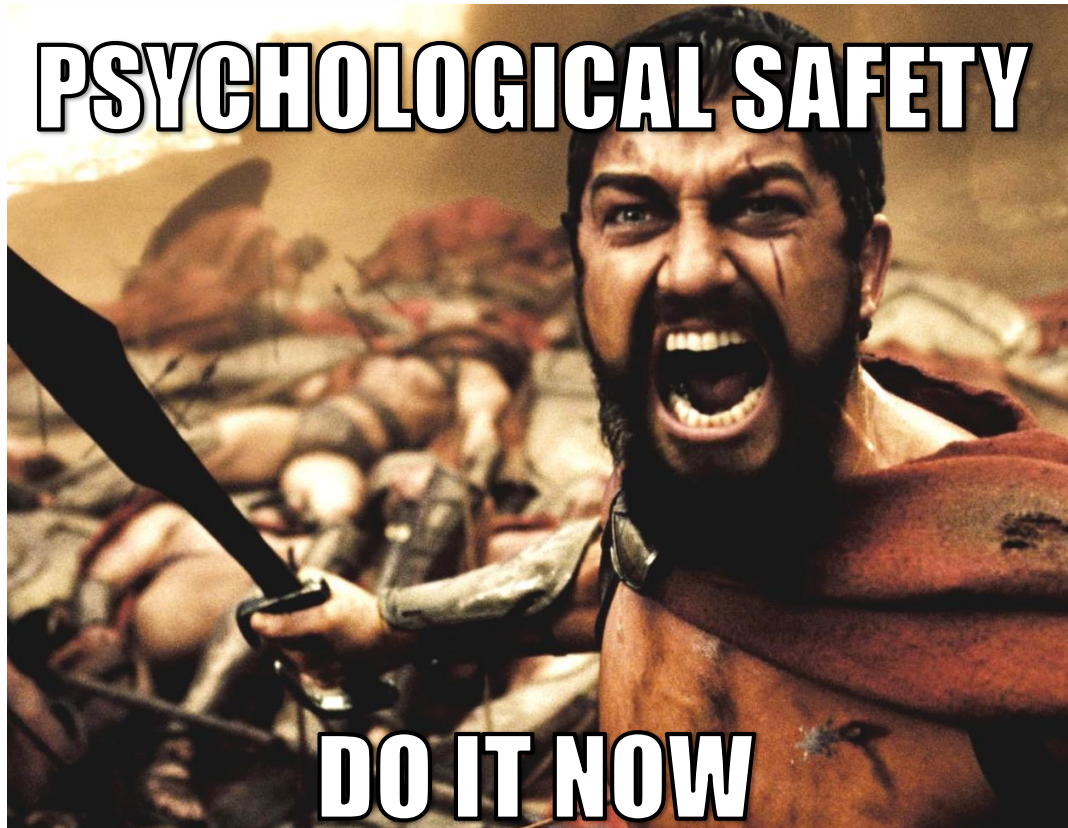
Science Of Psychological Safety

“... a sense of confidence that the team will not embarrass, reject, or punish someone for speaking up ... stems from mutual respect and trust among team members” Edmondson, 1999

“... being able to show and employ one's self without fear of negative consequences of self-image, status or career.” Kahn, 1990

While psychological safety describes *individual* experiences, it is driven by **group norms** and **interpersonal interactions**.

Not So Simple



Instruct team members to be sensitive and ensure equal chances for all?

Mutual trust and respect are developed through interactions *over time*;
Unspoken and unwritten;

Group norms

Human factors can help

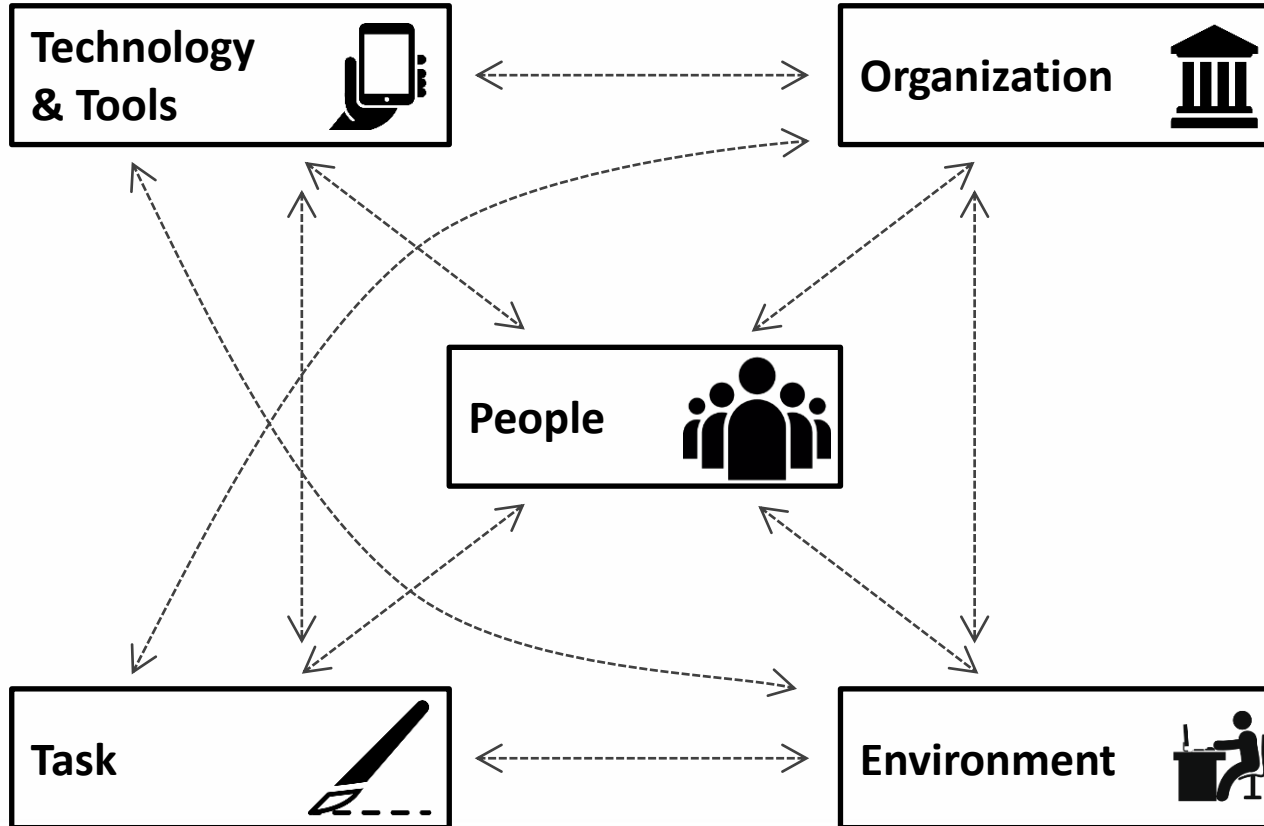
What is Human Factors?

Science of improving
human performance
and optimizing
system efficiency
during **interaction**

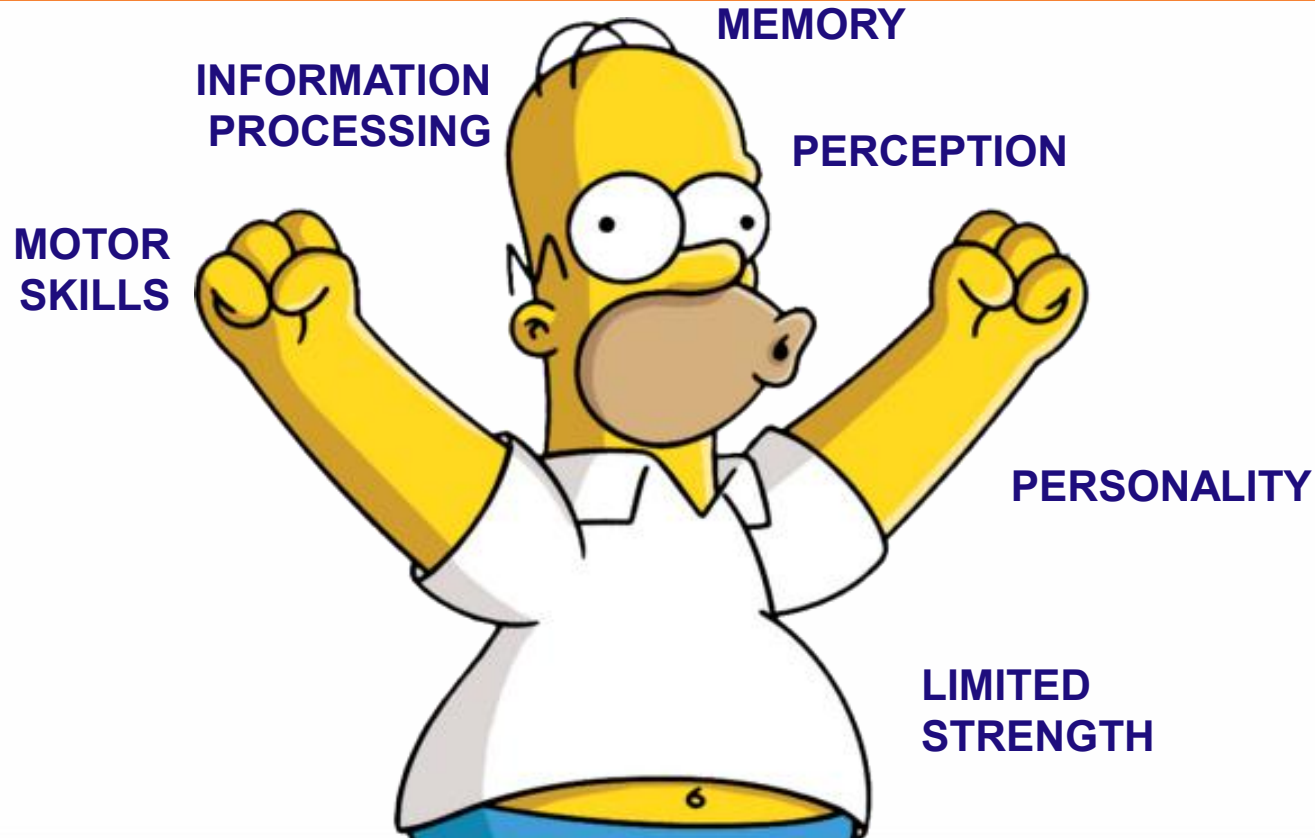
(SQ's simple definition)



Socio-Technical System



Understand The Weakest Link



Gestalt Principles

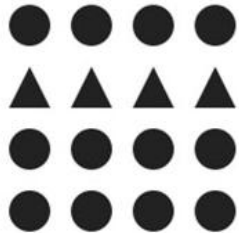


Good Continuation

Objects tend to be perceived as a single figure. The mind tends to fill in the gaps between the dots.

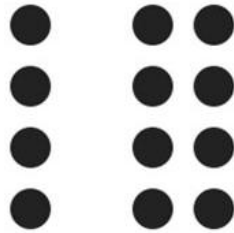


Similarity



Similarity

Objects tend to be grouped together if they are similar.



Proximity

Objects tend to be grouped together if they are close to each other.

When there is an intersection between two or more objects, people tend to perceive each object as a single uninterrupted object.

Symmetry

The object tend to be perceived as symmetrical shapes that form around their center.

Whose Water Bottle?



Explaining Lookalike Errors



Similar-looking designs (Gestalt principles)

Serial-search task suffers from speed-accuracy trade-off

ETTO Principle in policies
(Efficiency-thoroughness Trade-off)

Confirmation bias!



Recognize Genuine Human Error

Human factors science explains why we are imperfect.

By appreciating our strengths and weaknesses, we become better at looking out for and supporting one another.



Friends look out for each other!

Create A Safe Work System For Humans



Promote A Fair & Learning Culture



Accountability

Taking ownership of work performance, customers, successes and even failures



Empathy

Complete understanding when working in a diverse team with members coming from different cultural backgrounds and age groups

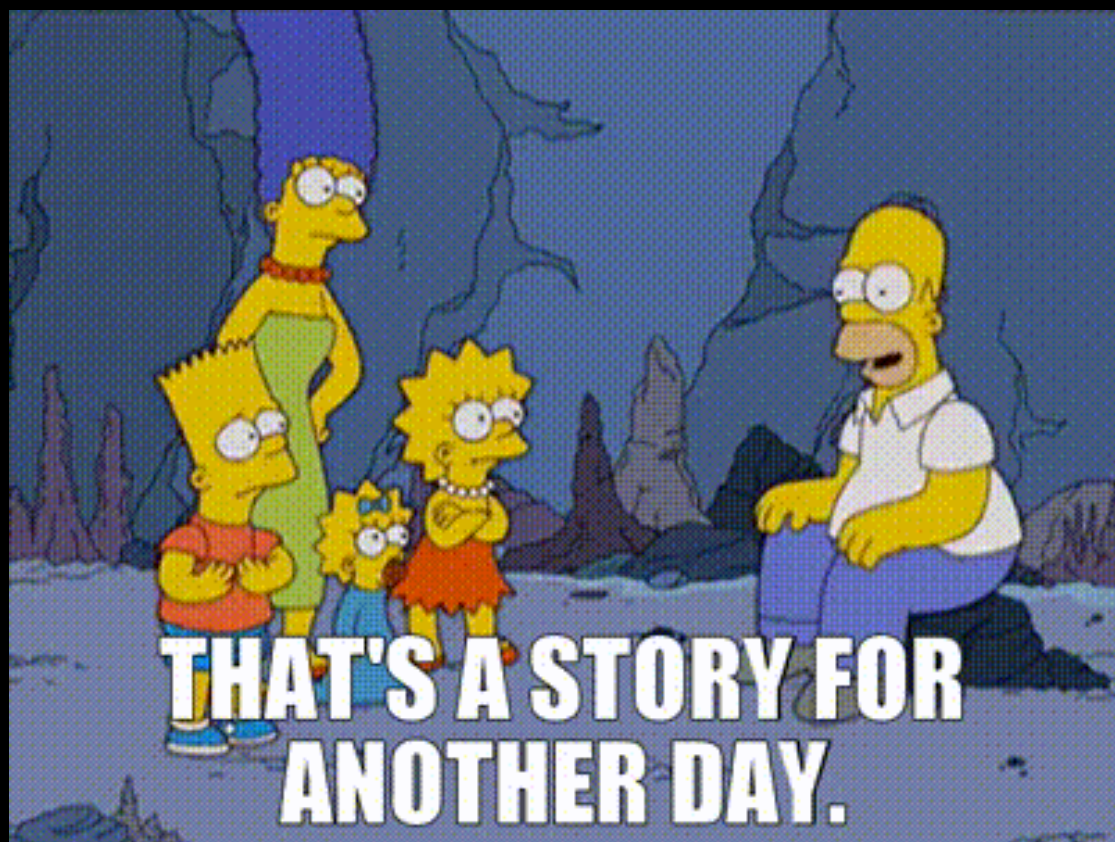


Fair & Just System

Learning from mistakes and seek to improve from it. When human error is made while working in systems, processes and policies defined by us, we will neither assume nor seek personal fault or guilt

Help identify reckless behavior to ensure fair accountability





What You Can Do Now

Access your organization's culture. Does it instill psychological safety?
Is there mutual trust and respect, or is everyone careful and critical?

Acknowledge that to err is human (Human Factors can help!).

Recognize human fallibility. Self-disclose your own fumbles.

Say **“I need to hear from you because I'm likely to miss things”**

Encourage sharing of mistakes and failures.

Discuss mistakes constructively, be open and nurturing

Incident investigation → operation learning

When sanctioning poor performance,
be objective, transparent, and consistent.



**More “safety” isn’t the answer;
Need to deliberately engineer an
environment that is efficient and
effective at being safe**

Appreciating Human Nature

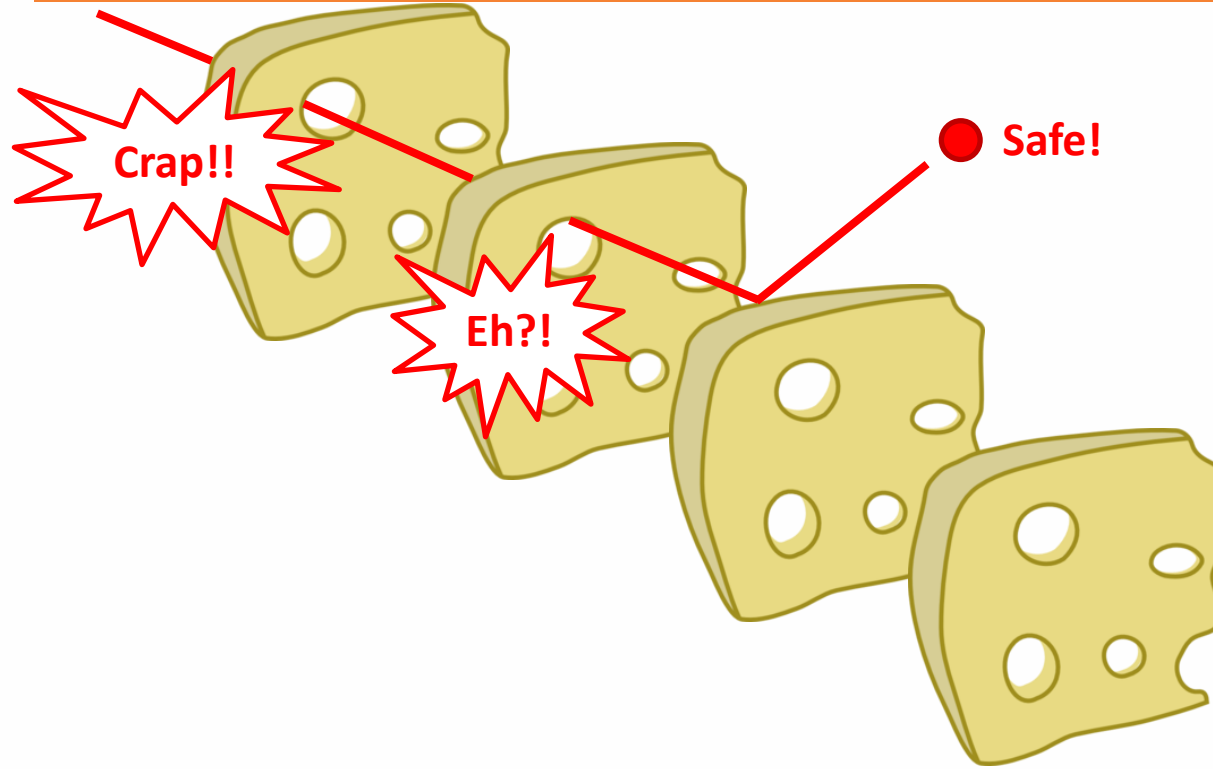


Because we humans are fundamentally imperfect

Discovering Booby-traps In The System



Designing Systems To Be Error-Tolerant



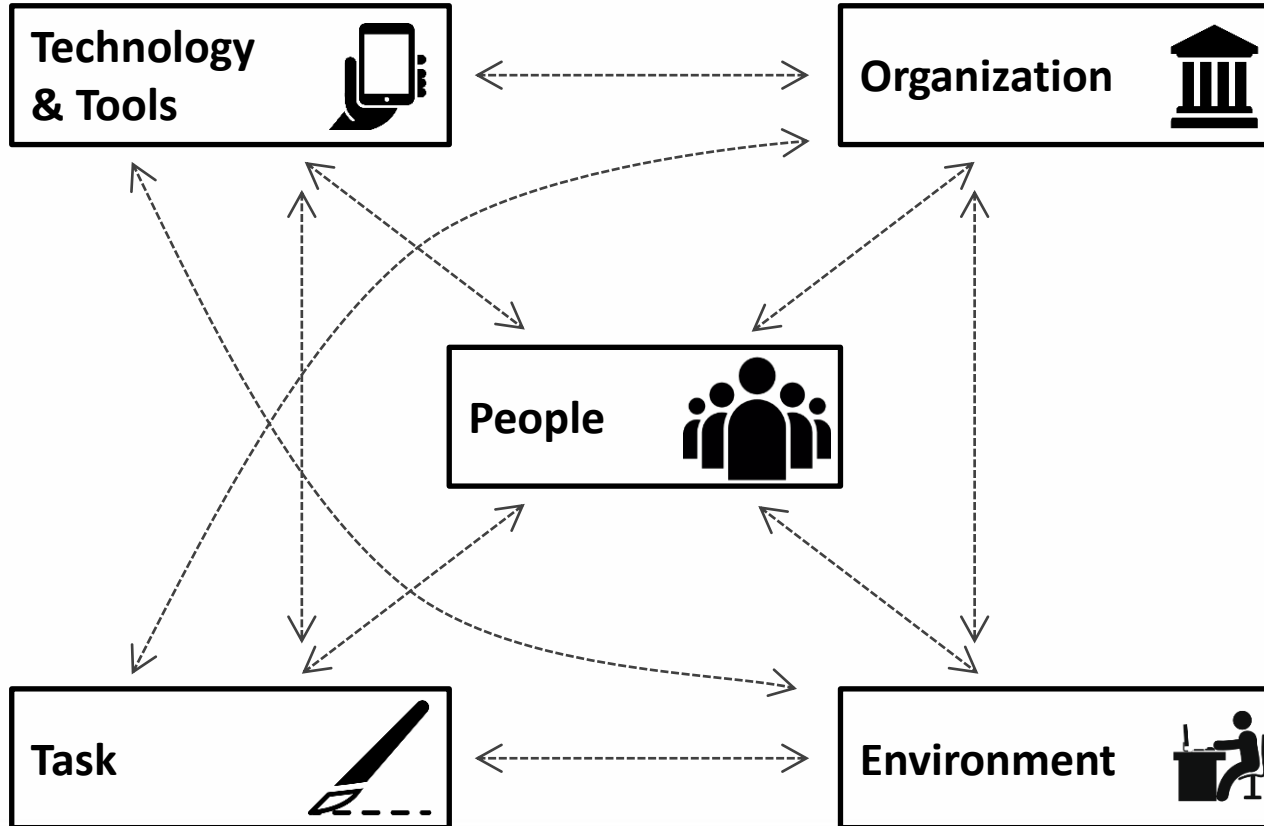
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Systemic Suite Of Interventions



Understand Humans



Capabilities & Limitations

Support Humans



Design systems that play to our strengths and support our weaknesses



Thank you!
Any questions?

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