

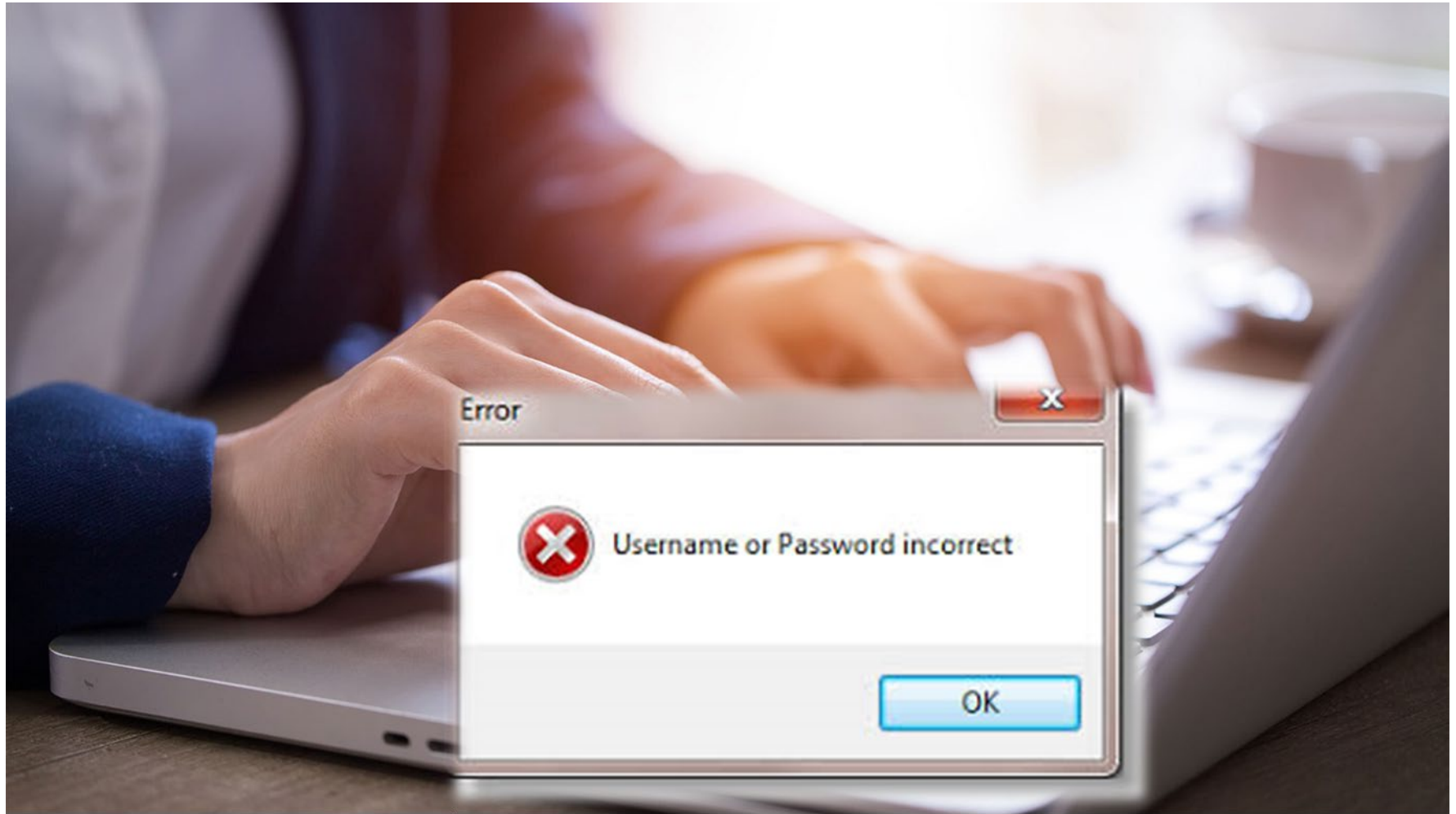
# Unit-based Safety



**Ensuring High Reliability  
Best Practices**

**Stephen G. Jones, MD  
Associate Professor  
Yale School of Medicine**

# Username and Password



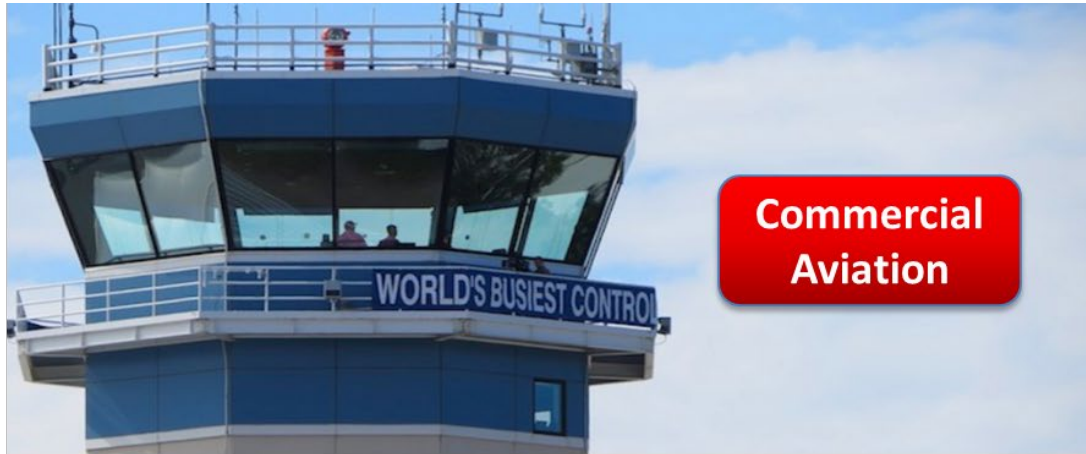
# What is an HRO?

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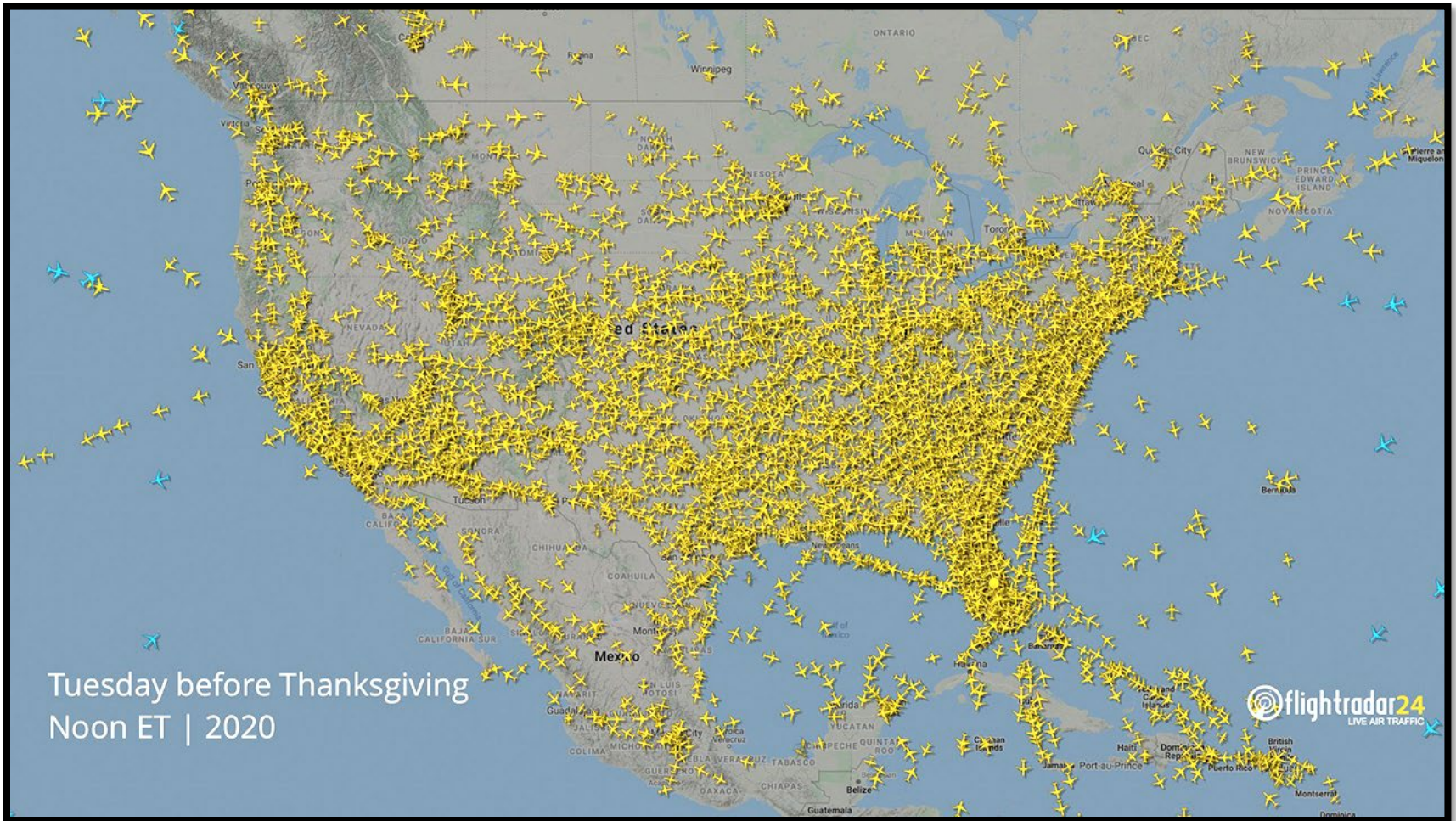


# High Risk, High Consequence Organizations





# Just Another Safe Day



# What About Healthcare?

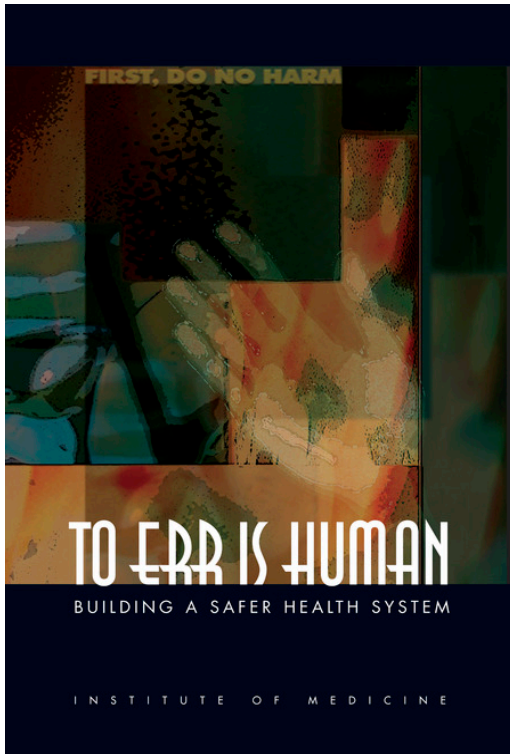
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# Harm in US Healthcare

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1999 Institute of Medicine report:

***“To Err is Human”***

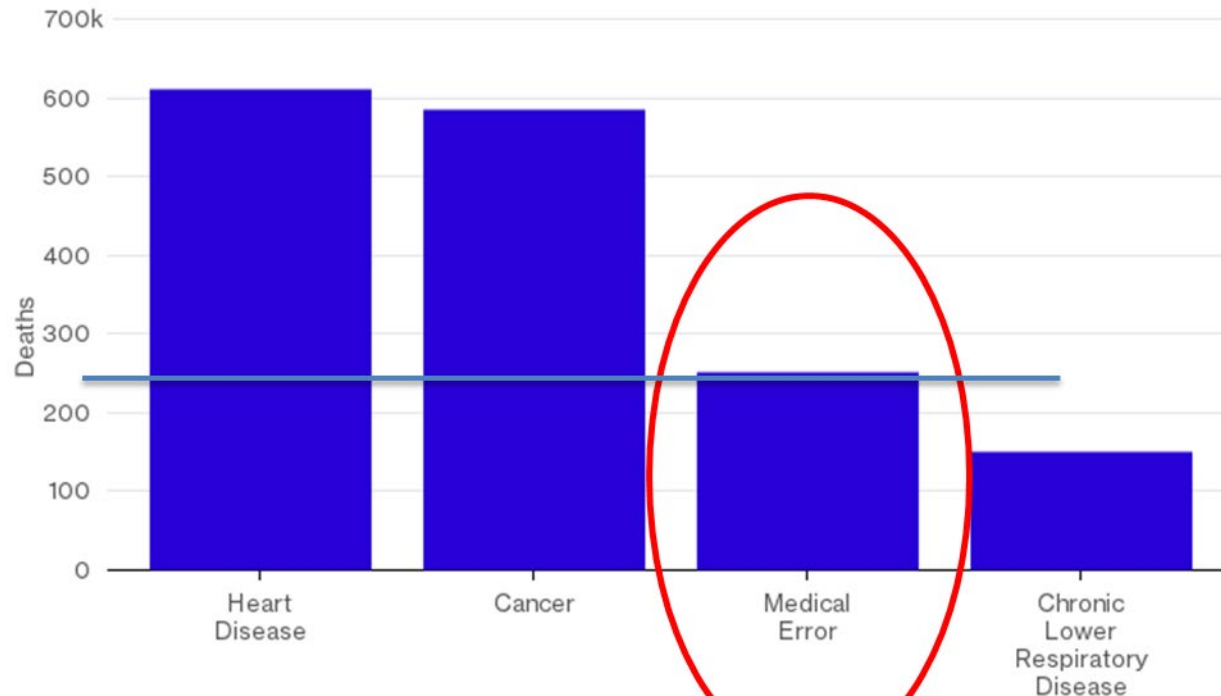
**44,000 to 98,000  
preventable deaths  
annually**



# Are we safer 20+ years later?

## Lethal Mistakes

A new estimate of hospital safety lapses in the U.S. is higher than earlier tallies



Source: British Medical Journal. Death data is from 2013.

Bloomberg 

thebmj



**CAUTION:  
Hospital Ahead**

# High Reliability CULTURE

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## **Fair and Just**

- Diverse, Inclusive, and Equitable
- Seeks Learning over Blame
- Accountable

## **Open and Transparent**

- Safe Event Reporting and Review

## **Dynamic Learning**

- Proactive
- Innovative
- Shared

## **Resilience**

- Organizational & Individual



# Bringing the Equity Lens to Safety



# Inequities Cause Harm



**“No such thing as  
“safe care” when it is  
inequitable”**

# Why Things Go Wrong

## Systems



## Humans

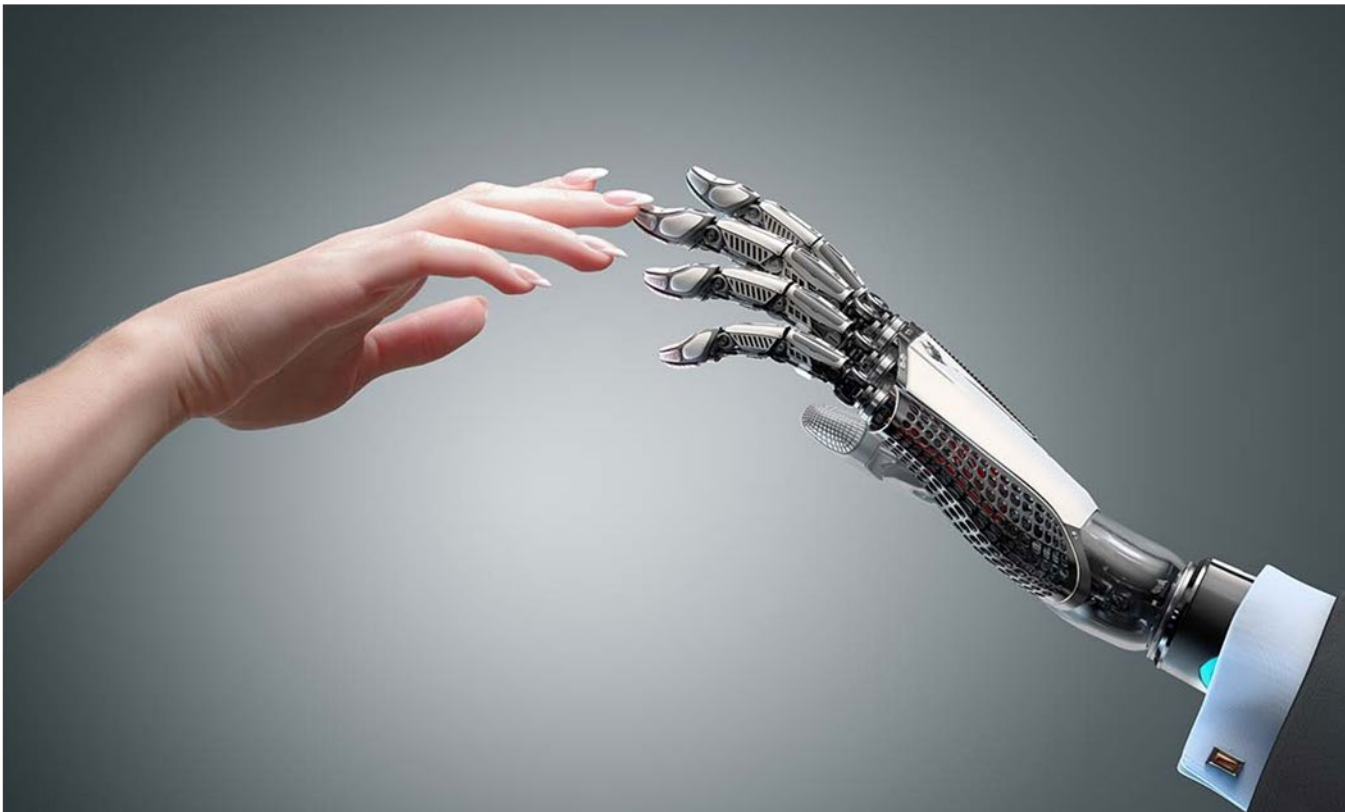




# An Inseparable Bond

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**Humans** ↔ **Systems**



# Your Driving System



# On Being Human

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**Human Error**

***Not a Choice***



**Free Will**

***A Choice***



# Performance Shaping Factors

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## Personal

- Fatigue
- Stress
- Health
- Competing Goals
- Values

## Professional

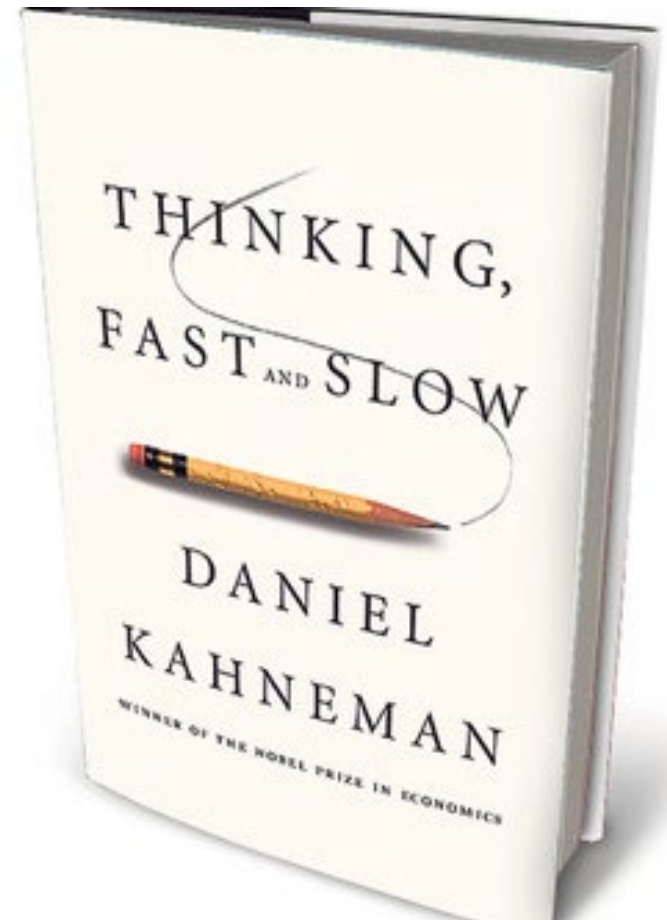
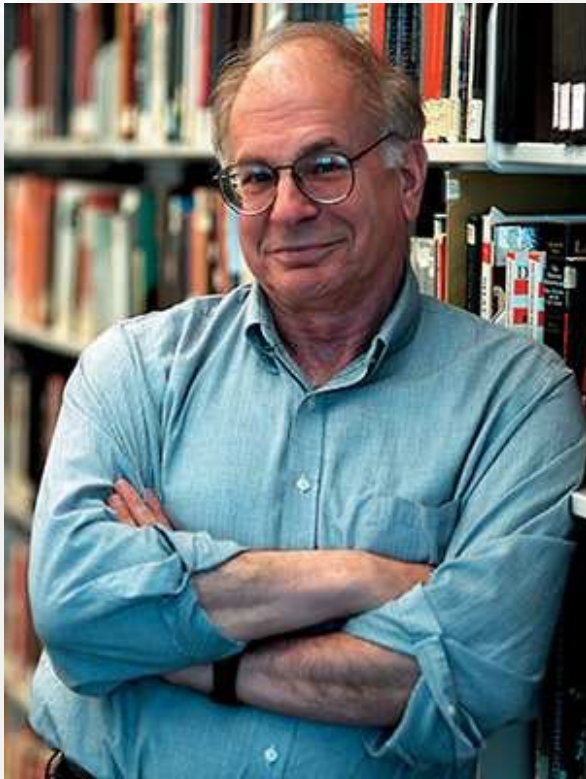
- EPIC
- Environment
- Culture
- Competing Goals
- Values

# To Err is Human



# Daniel Kahneman

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# Our two brains

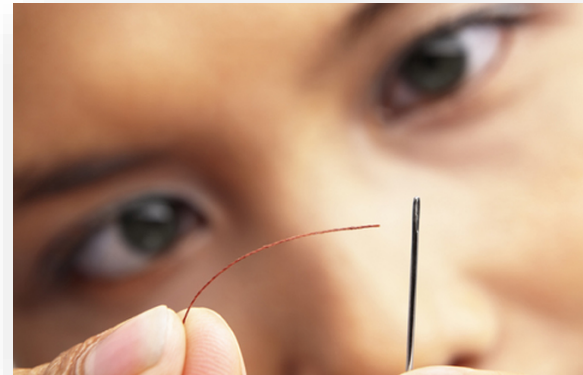
## System 1

- Unconscious reasoning
- Automatic / FAST



## System 2

- Conscious reasoning
- Effortful / SLOW

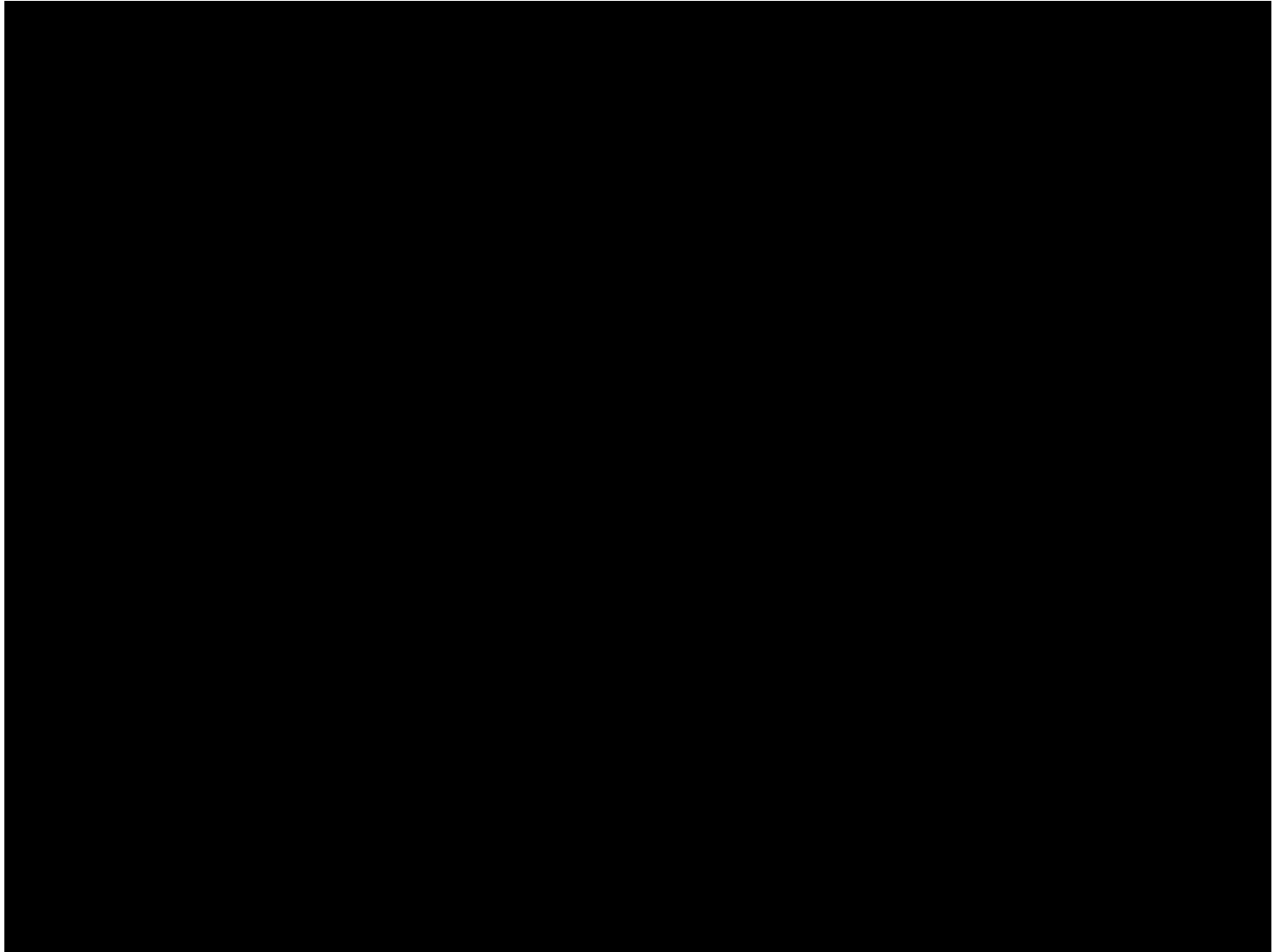


# Spell

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# The Awareness Test







3.9 1967

*The Day Sweden Switched*

## Dagen H – “H-Day”



# Error vs Choice

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# Review Group One



An experienced surgeon sees a new piece of equipment at a conference. Back at the hospital, a sales rep. persuades him to use the equipment for a procedure. Having never used the equipment before he accidentally punctures the patient's bowel.

The surgeon repairs the bowel and the patient recovers fully.

*The OR has a policy that says new equipment will be officially approved and training conducted prior to its use.*



# Review Group Two



An experienced surgeon sees a new piece of equipment at a conference. Back at the hospital, a sales rep. persuades him to use the equipment for a procedure. Having never used the equipment before, he accidentally punctures the patient's bowel.

The surgeon repairs the bowel but the patient later develops a life-threatening infection as a result of the accidental puncture.

*The OR has a policy that says new equipment will be officially approved and training conducted prior to its use.*

# Question:

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***Should the Surgeon be disciplined?***



# Results:

---

## ***Discipline Surgeon?***

| Review Group | Grp 1 ( <b>No Harm</b> ) | Grp 2 ( <b>Harm</b> ) |
|--------------|--------------------------|-----------------------|
| Managers     | 0%                       | 50%                   |
| Physicians   | 0%                       | 45%                   |



# Outcome / severity bias

WHAT IS IT?

**When leadership allows the severity of the outcome...**

**.... to drive its response to an event**

Outcome / severity bias

TRAGIC EFFECTS

***“No Harm, No Foul”***

***Errors are caused by “normal”  
rather than “abnormal” behavior.***



## Lucian Leape

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***“The single greatest impediment to error prevention is that we punish people for making mistakes.”***

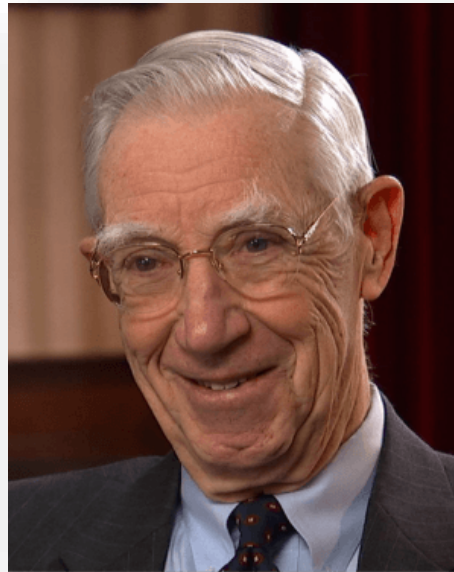
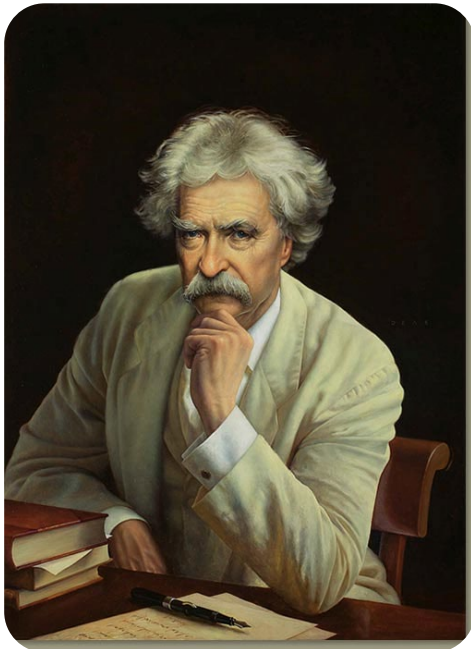


Photo courtesy of Lucian Leape



*“Man was made at the end of the week's work, when God was tired.”*

*- Mark Twain*



# You Have Just Two Choices:

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You can **Blame** and **Punish** or

You can **Learn** and **Improve**

***But you can't do both!***

**How often do  
we feel *safe*  
doing *risky*  
things?**



# Our Internal “Risk Monitor”

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# Would you choose to drive around?



# At-Risk Behavior

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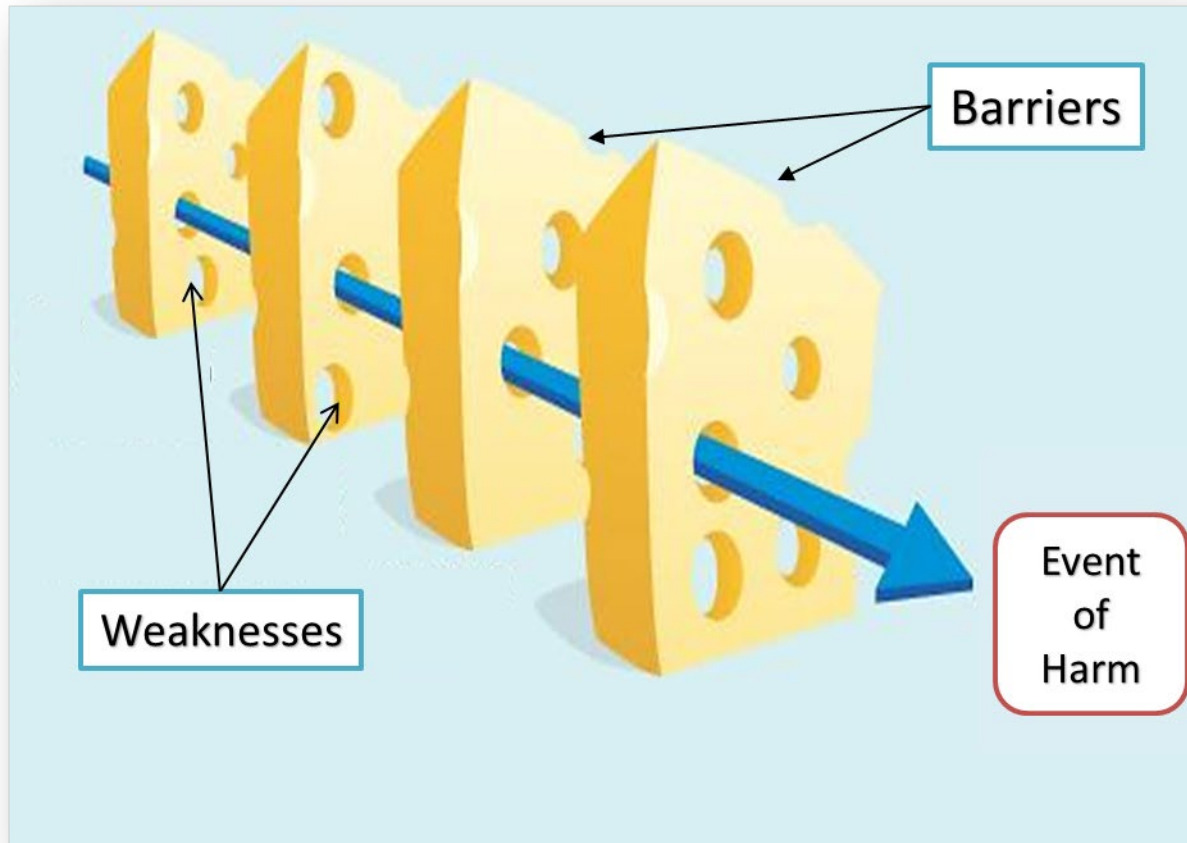


# Another At-Risk Behavior (choice)



# The Swiss Cheese Model (James Reason)

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# Coaching and behavior modification

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*“Let’s keep this shot just a little left.”*













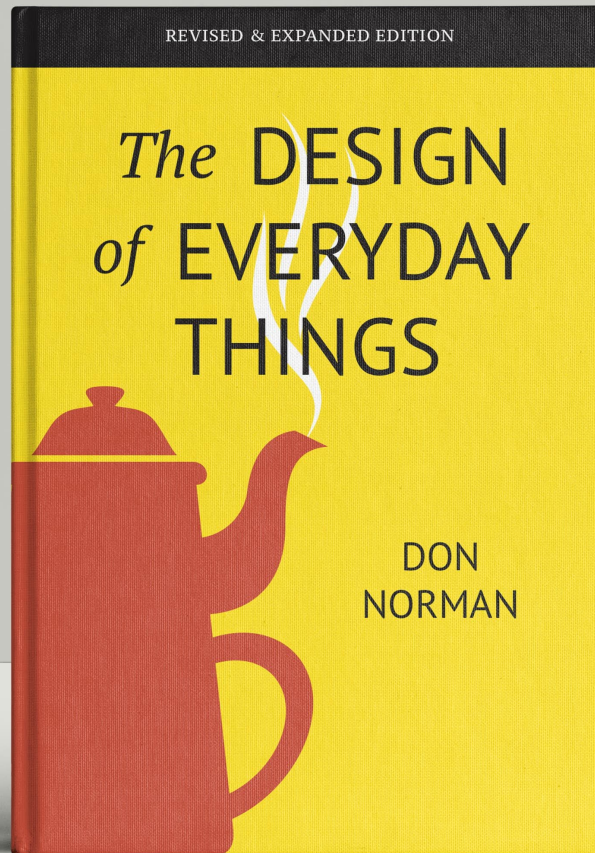
# Changing Behaviors



Sussex Safer Roads  
Partnership

[www.sussexsaferoads.gov.uk](http://www.sussexsaferoads.gov.uk)

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# Good System Design

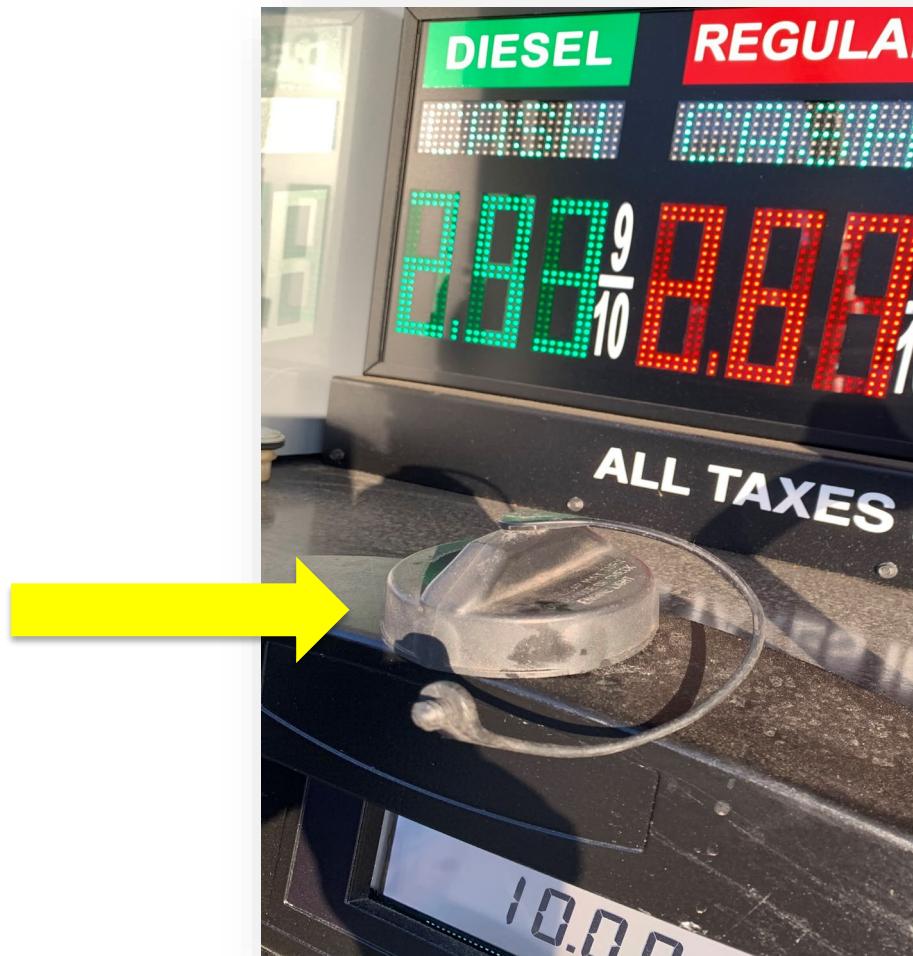
## Error Proofing

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# No Perfect Systems

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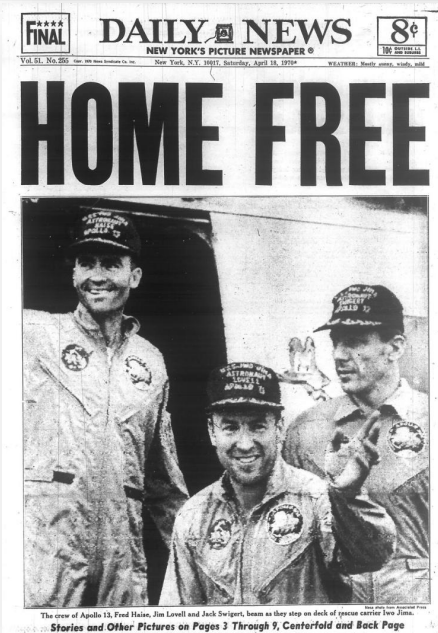
# User Experience, Design

A photograph of a park path. A person in a dark jacket and dark pants is walking away from the camera on a dirt path, carrying a red bag. The path is bordered by a low concrete curb on the right and a grassy area on the left. In the background, there is a paved walkway, a bench, and a fence. The scene is outdoors with trees and a building in the distance.

User experience

Design

# Resilience



# Learning Systems

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## REACTIVE

- Looks Back
- Local Learning
- Error Focused
- Outcome Bias
- Address the Human

## PROACTIVE

- Looks Forward
- Shared Learning
- Risk Focused
- Outcome Blind
- Address the System

# Keys to a Successful HRO

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High Reliability **CULTURE**  
+  
High Reliability **BEHAVIORS**



**Good System Design**





*Thank you!*