Failing To Succeed:
Leveraging Failure to Improve and Innovate

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ICTR Team Science Core

The Team Science Core aims to facilitate high-impact team science by developing infrastructure to support interdisciplinary teams.

| Team Science Education | Team Science Interventions | Science of Team Science | Culture of Team Science |

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Defining Failure

"…a state where reality is inferior to the goal."

(Lee and Miesing, 2017)

"…a deviation from expected and desired results"

(Cannon and Edmondson, 2005)

"…an unacceptable difference between expected and observed performance"

(Carper, 1996)

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Fam and O'Rourke, 2021

Blameworthy Failures

Failures that are truly Blameworthy

2-5%

Failures treated as Blameworthy

70-90%

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Edmondson, 2011

A Spectrum of Reasons for Failure

Blameworthy / Praiseworthy	Reason	Description
Blameworthy	**Deviance**	An individual chooses to violate a prescribed process or practice
	Inattention	An individual inadvertently deviates from specifications
	Lack of Ability	An individual doesn't have the skills, conditions, or training to execute a job
	Process Inadequacy	A competent individual adheres to a prescribed but faulty or incomplete process
	Task Challenge	An individual faces a task too difficult to be executed reliably every time
	Process Complexity	A process composed of many elements breaks down when it encounters novel interactions
	Uncertainty	A lack of clarity about future events causes people to take seemingly reasonable actions that produce undesirable results
	Hypothesis Testing	An experiment conducted to prove that an idea or a design will succeed fails
Praiseworthy	**Exploratory Testing**	An experiment conducted to expand knowledge and investigate a possibility leads to an undesired result

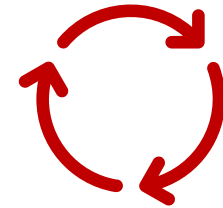Institute for Clinical and Translational Research
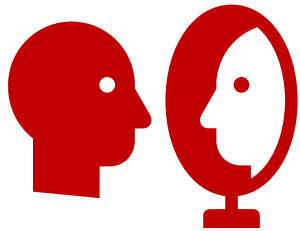UNIVERSITY OF WISCONSIN–MADISON

Edmondson, 2011

Responding to Failure
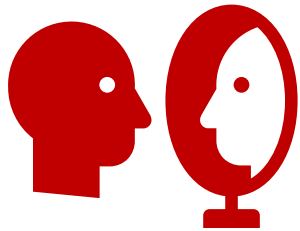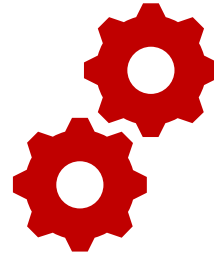
Self-Awareness   Situation Awareness   System Awareness

Edmondson, 2023

Responding to Failure

Self-Awareness

Edmondson, 2023

The Case of the Unfortunate Research Admin

A research administrator was working diligently with a team of scientists who were applying for a major grant. After many late nights, and some weekend hours, all the pieces of grant were compiled and ready for submission. As he went to submit the grant, he suddenly realized that the deadline had passed. He looked at his calendar and the date had been entered wrong. Thus, they were not able to submit the grant.

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How would you react if you were the research admin?

Self-Awareness

Stop

Pause to disrupt automatic responses to situational stimuli to make it possible to redirect the spontaneous emotional and behavioral responses.

Challenge

Consider the content of your spontaneous thoughts to assess their quality and usefulness for achieving your goals.

Choose

Say or do something that moves you closer to achieving your goals.

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Edmondson, 2023

How would you react if you were on his team?

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Self-Awareness

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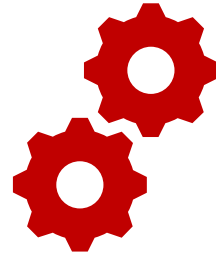
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Edmondson, 2023

Responding to Failure

Situation Awareness

Edmondson, 2023

Implications of Context

	Consistent	**Variable**	**Novel**
Examples	• Vehicle assembly • Completing simple forms • Grading multiple choice exams	• Surgical operating room • Hosting annual events • Submitting grants	• Scientific laboratory • Experimental kitchen • Teaching a new workshop
The state of knowledge	Well-developed	Well-developed but vulnerable to the unexpected	Limited
Uncertainty	Low	Medium	High
Most Common Failure Type	Basic	Complex	Intelligent

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Edmondson, 2023

The Stakes

	Higher Stakes	**Lower Stakes**
Physical	Life, death or grave injury	Trying a new sport
Financial	High-cost investments	Trying a new restaurant
Reputational	Highly public activities	Expressing idea to a new colleague

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Edmondson, 2023

Taking Action

Context type

	Consistent	Variable	Novel
Higher Stakes	Be Mindful	Proceed with Caution Analyze Carefully	
Lower Stakes	Act Casual "Business as Usual"		Experiment Have Fun!

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Consider the Situation
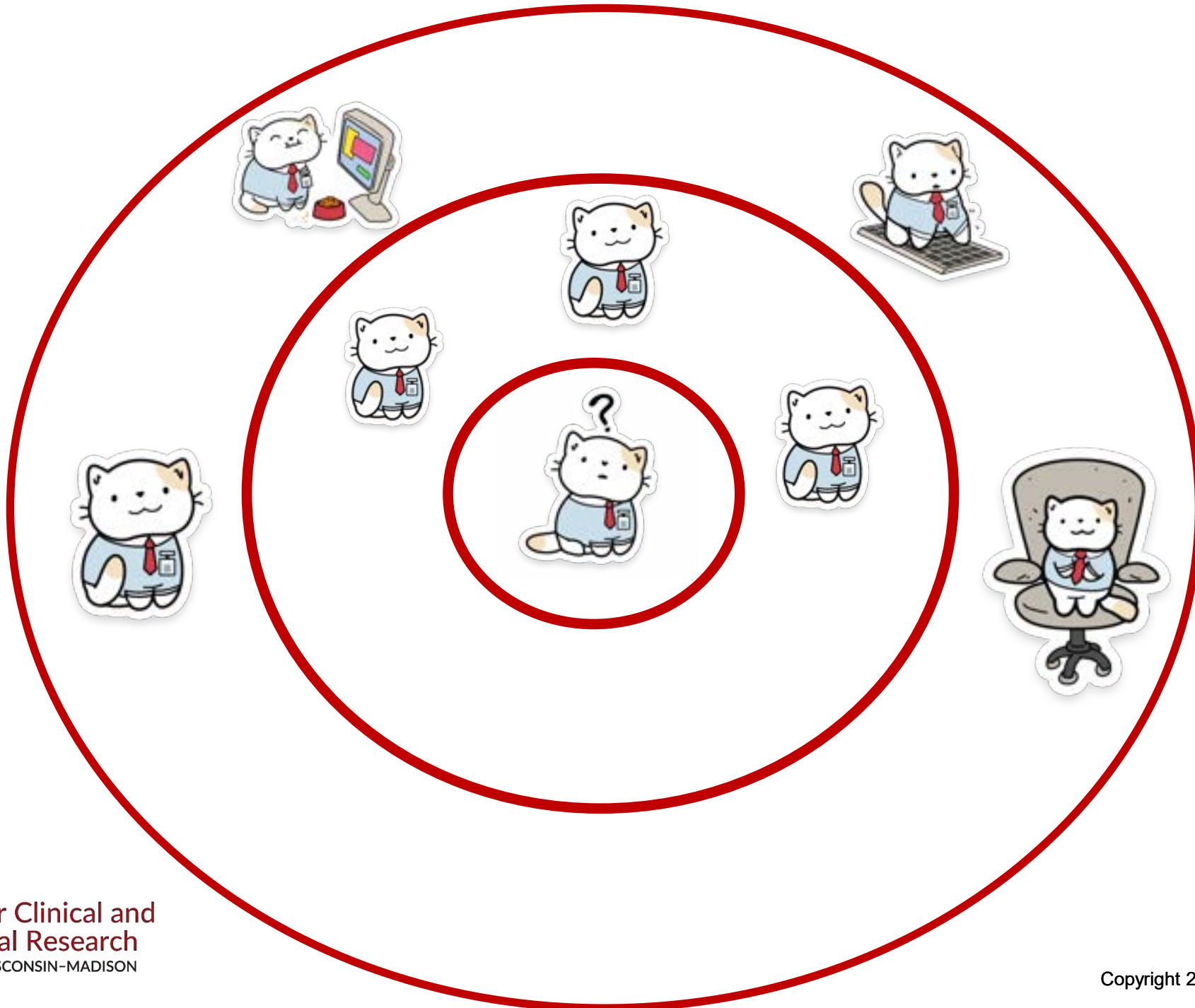
Responding to Failure
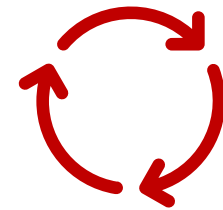
System Awareness

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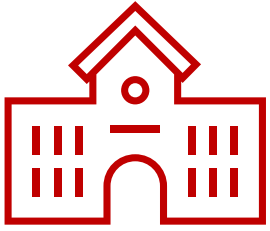
Team Information Processing (TIP) Failures

Schippers, Edmondson, & West, 2014

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Team Reflexivity

- Teams need to regularly reflect to evolve and adapt
  - Vision/goals
  - Roles and Responsibilities
  - Culture
  - Processes

**We do not learn from experience…
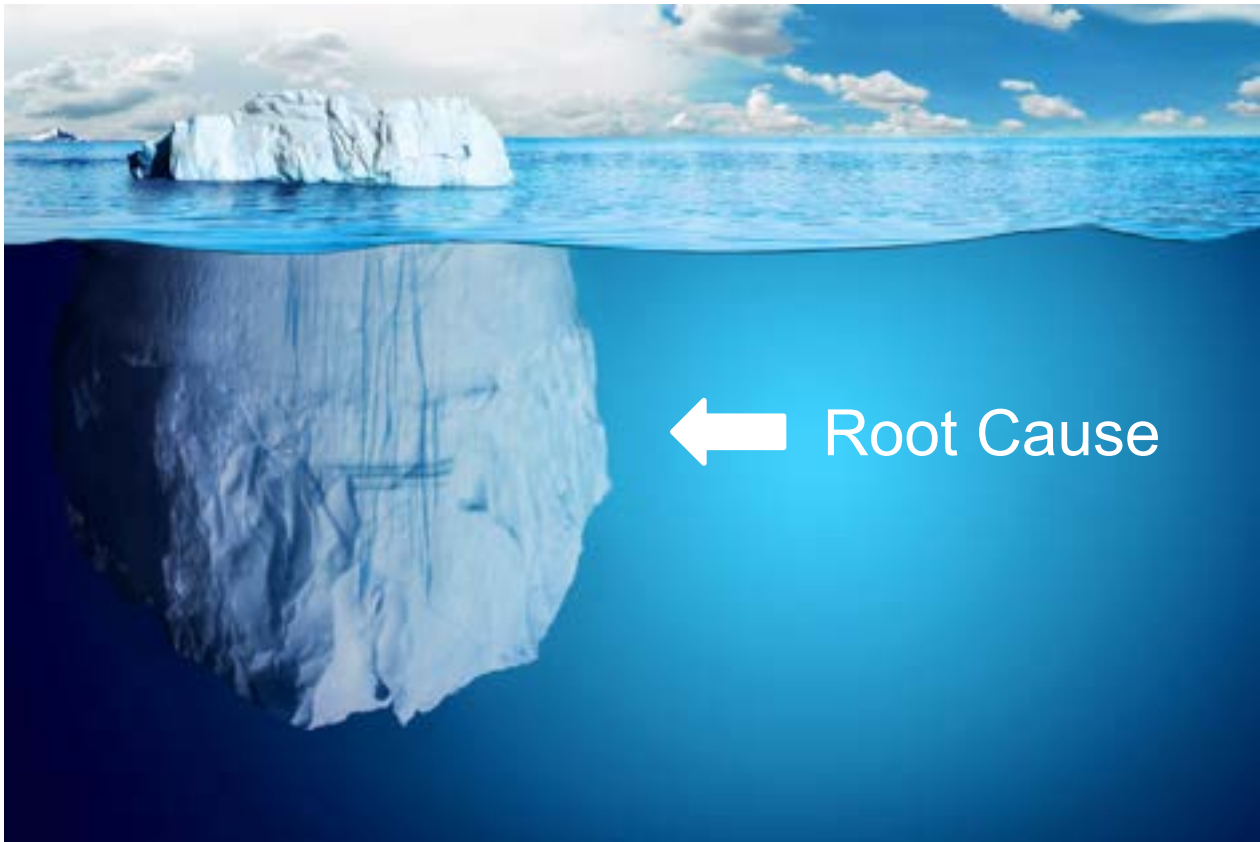We learn from reflecting on experience.**

~ John Dewey

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Schippers, Edmondson, & West, 2014

Collaboration Planning

Teams benefit when they discuss known, potential challenges to collaborative research and develop strategic plans to overcome them

>50 teams received intervention

90 minute facilitated sessions

7 thematic focus areas

TEAM CULTURE
What are your team norms and expectations?

TEAM VISION
What is the overarching goal of this team?

TEAM OUTPUTS
What kinds of outputs do you anticipate arising from this project?

PEOPLE, ROLES & RESPONSIBILITIES
Who is on the team and how will they contribute?

PROJECT MANAGEMENT & INFRASTRUCTURE
How will you manage your tasks, information and data?

TEAM PROCESS & FUNCTIONING
How will you make decisions and resolve disputes?

IMPLEMENTATION & MAINTENANCE
How will your team implement your plan?

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(Rolland et al., 2020)

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Intelligent Failures Require Deeper Analysis

Root Cause

- Go beyond obvious and superficial causes

- Avoid the **Fundamental Attribution Error** –
  - Tendency to attribute other's actions to their character

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Innovation and Intelligent Failures

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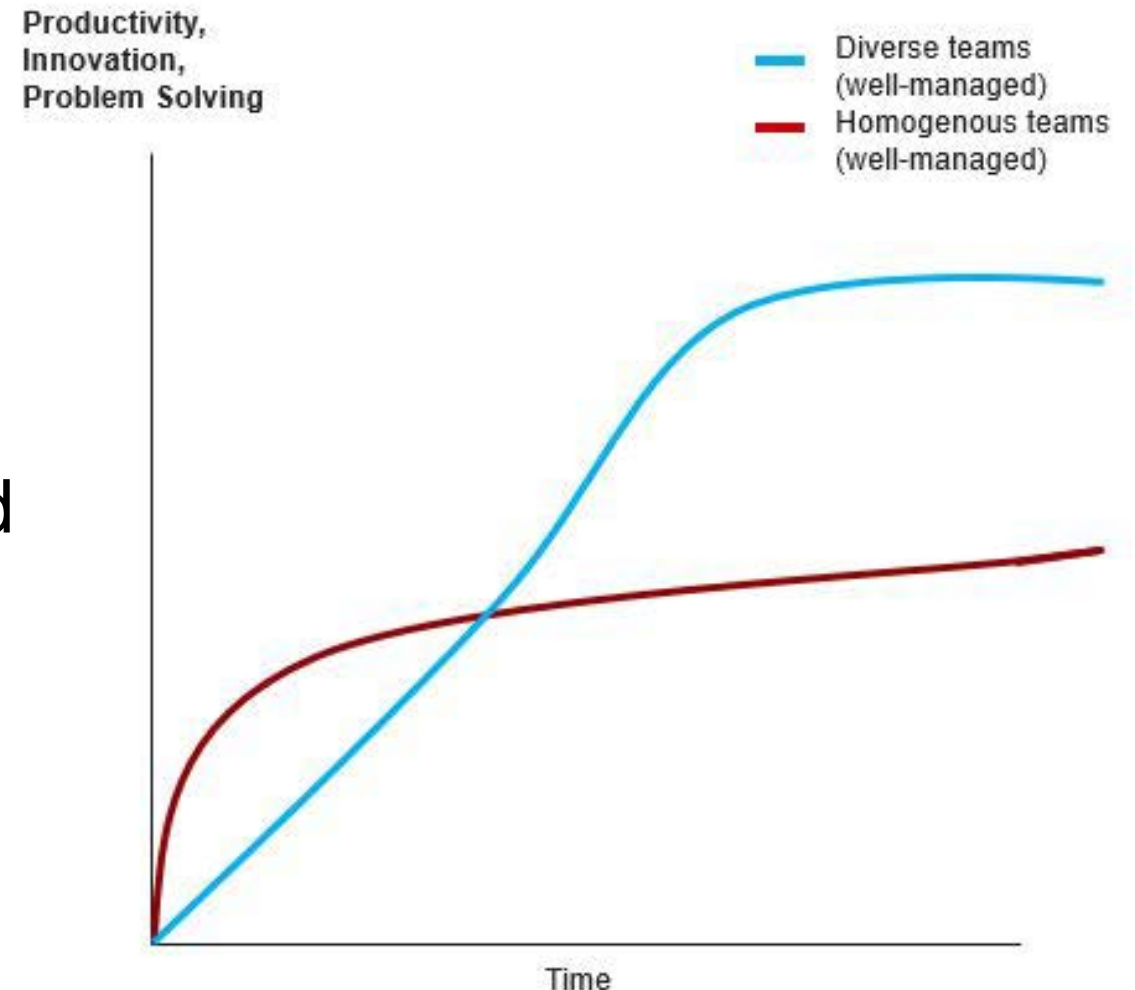UNIVERSITY OF WISCONSIN–MADISON

The Curious Case of the Pottery Assignment

A ceramics teacher announced that he was dividing the class into two groups: quantity vs. quality. The quantity group had to produce 50 lbs of pottery to get an "A." The quality group had to produce one perfect pot to get an "A." Come grading time, a curious fact emerged: the works of the highest quality were all produced by the group being graded for quantity.

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Bayles and Orland, 2001; Clear, 2018

Cognitive Diversity

- Cognitive Diversity refers to differences in perspective or information processing styles -- how individuals engage with uncertain and complex situations.

- Leads to greater innovation, expedited problem solving, and collaboration in complex environments

Productivity, Innovation, Problem Solving

— Diverse teams (well-managed)
— Homogenous teams (well-managed)

Time

This figure synthesizes the work on the performance of diverse versus homogenous teams adapted from Katherine W. Philips (October 2014).

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Cultivating Trust and Psychological Safety

Be curious, ask questions, and develop the skills to embrace intellectual conflict

Encourage learning from failure, openly (and positively) celebrating mistakes

Adam Grant ✓
@AdamMGrant

If two people always agree, it's a sign that at least one of them isn't thinking critically—or speaking candidly.

Differences of opinion don't have to be threats. They can be opportunities to learn.

Intellectual friction isn't a relationship bug. It's a feature of education.

Adam Grant ✓
@AdamMGrant

The point of reviewing your mistakes isn't to shame your past self. It's to educate your future self.

Rumination is recycling old thoughts about what went wrong. Reflection is looking for new insights on how to do better.

You can't undo last year. You can improve this one.

Uncivil Behavior

Overt hostile behavior (e.g., belittling in front of others) or more subtle slights (e.g., teasing in ways that sting)

Uncivil behavior becomes an emotional contagion

- 98% of employees report experiencing uncivil behavior
- 48% of employees decrease work effort or lower work quality
- 80% lost time worrying about the incident
- 78% said their commitment to the organization declined
- 12% left their job

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Porath and Pearson, 2012

Self-Awareness

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Navigating the "unsafe" or "uncivil" environment

- Diagnostic Questions
  - How long will the incivility exist?
  - Is it an individual or systemic problem?
  - How much power do you have?
  - Do you feel depressed, demeaned, disrespected, or de-energized?

- Useful Resources
  - [Office of Employee Assistance](#)
  - [Hostile and Intimidating Behavior (HIB) Liaisons](#)
  - HR Representatives
  - [Office of Workforce Relations](#)
  - [Ombuds](#)

Graceful Exits

"There's a trick to the 'graceful exit.' It begins with the vision to recognize when a job, a life stage, or a relationship is over — and let it go. It means leaving what's over without denying its validity or its past importance to our lives. It involves a sense of future, a belief that every exit line is an entry, that we are moving up, rather than out."

~Ellen Goodman

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The Road Less Traveled

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What is one step you can take to help your team **Fail** to **Succeed**?

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