Why Success is More Likely When You're Willing to Fail

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So…there's this "tenure vote" thing that happens about 5 years into your faculty career. Mine didn't go as I expected. I was devastated.

and…

That day also became the most important day of my career. As a result of my experience, I now:

- recognize I'm **stronger** than I thought I was
- am a **more empathetic** mentor and colleague
- cultivate a **collaborative** lab culture that is forever changed
- have vision and clarity for **transforming academic culture**
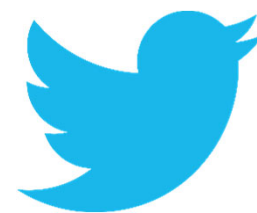
Your turn to participate!

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In 1 word, what is an area of your life where you are afraid of failing?

We already know how to fail

I learned all about failure by playing golf.

Anyone else?

How about mini golf?

What do we do when failure is likely?

We're always hoping for a "hole in one" but sometimes that seems impossible. What do we do?

- Plan out what we think is the best option

- Execute that plan to our best ability

- If successful, celebrate our victory

- If unsuccessful…

  - ~~throw our putter into the bushes and go home~~

  - reassess the situation and keep trying, even though the "failure" will be on our scorecard; learn so you can do better next time

In 1 word, what is an area of your life where you are comfortable with failure?

But…that's golf and this is my career

- It can feel easier to push ahead despite possible failure when the thing we're doing is "for fun"

- The stakes are much higher when we think about failing at work

- However, if we are afraid to fail, then we might:

    - avoid setting up an important experiment

    - subtly sabotage the experiment so that we have an excuse when it doesn't work

    - avoid seeking out help and advice

    - be more likely to "throw the reaction into the waste container and go home" instead of trying again

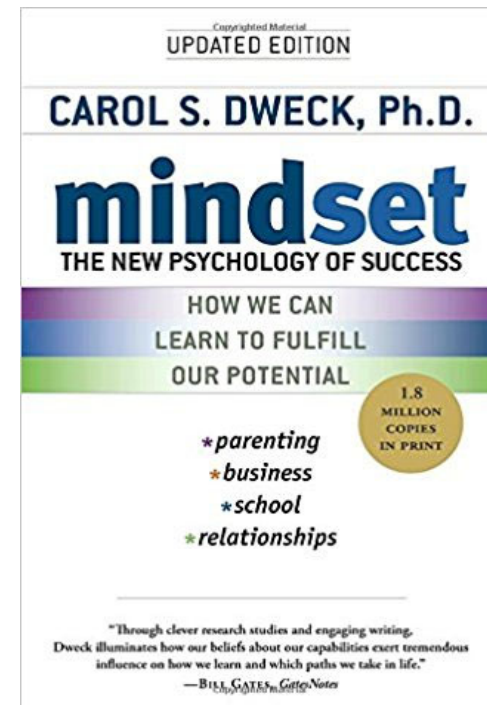   **So, what can we do about this as researchers and educators?**

A career changing conversation (of many)

My PhD advisor: Have you read this book *Mindset* by Carol Dweck?

Me: No, what is it about?

My PhD advisor: That how you view your abilities can determine your success.

Me: Whoa. Sounds like I should read that.

The "can't not":

- Fixed mindset creates fear of failure, and fear of failure can lead us to self-sabotage so that we have an excuse when things don't work

- **What does that look like when we work in an industry where we face the possibility of failure *every day*?**

What is mindset?

Research by the Dweck group shows that our implicit theory of intelligence ("mindset") can significantly impact our success

Fixed Mindset: Your basic qualities such talent and intelligence are traits that are set. ***Talent and intelligence*** alone create success. You are driven by the desire to *appear* intelligent.

Growth Mindset: Intelligence and talent are just the starting point – you can ***develop your skills*** through hard work. You are driven by the desire to *learn and improve*.

Mindset by Carol Dweck

What does this have to do with failure?

Fixed Mindset: You are more likely to avoid situations where failure is possible, as a failure delivers unwelcome (and unfixable) feedback about your talent level. *You do not have a productive path forward after a failure occurs.*
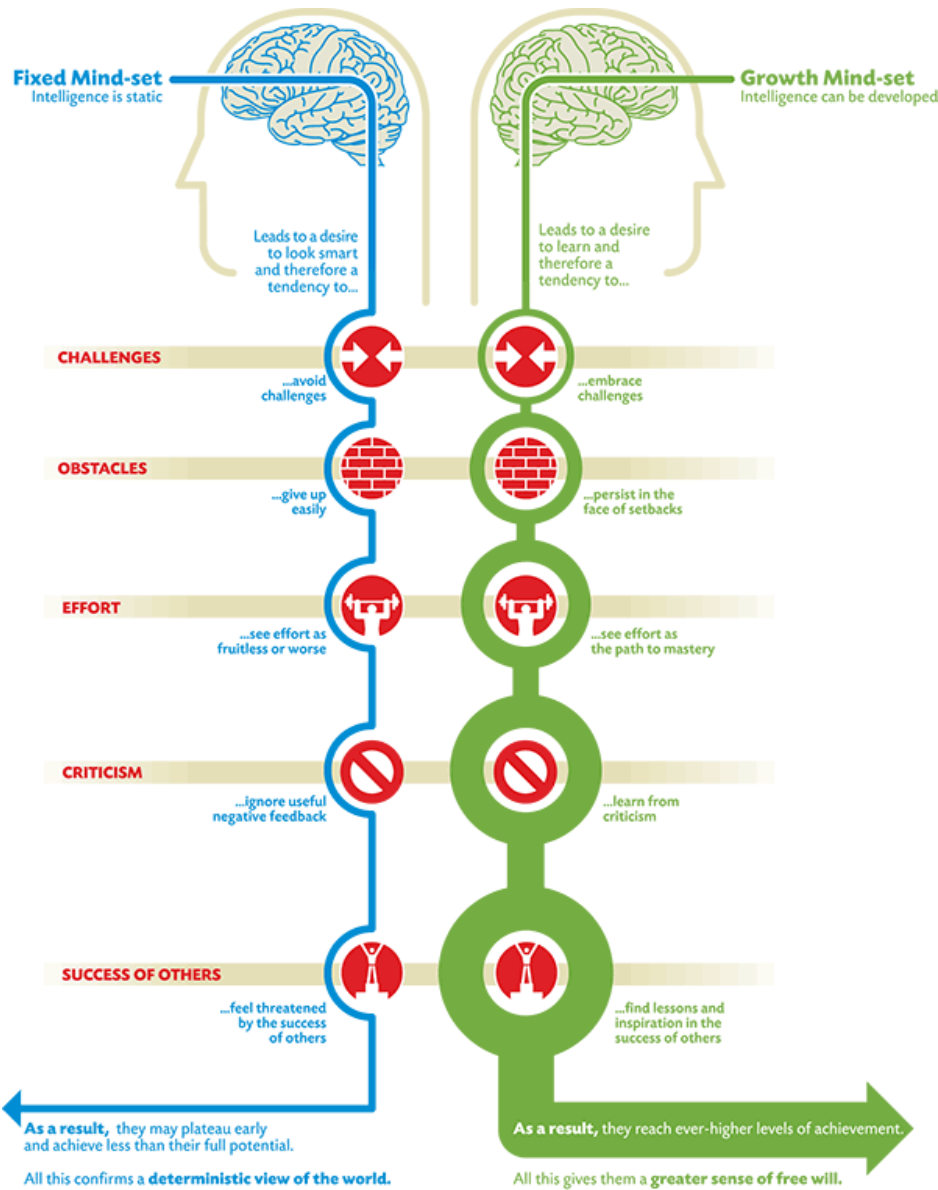
Growth Mindset: You are less afraid of new challenges, as a failure just indicates your current (not permanent) skill level. You are capable of overcoming short-term failure, as *you can envision a path to success through hard work and improvement*.

FAILURE   or   TRY   TRY AGAIN   SUCCESS

Mindset by Carol Dweck
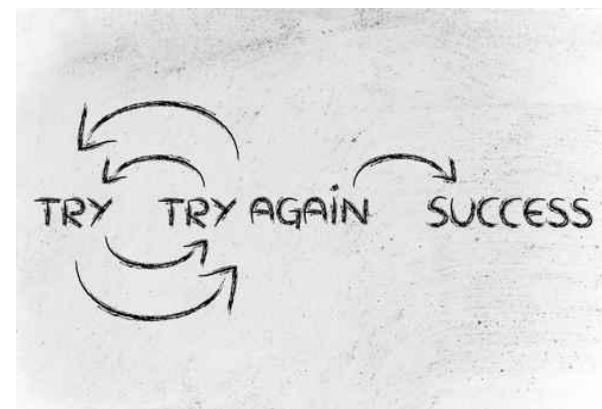
It starts out small…

this seemingly small assumption
that we make about our abilities
can "snowball" into big outcomes

When your experiment fails

Fixed mindset:

- you might not have tried the experiment in the first place

- you subconsciously do something wrong in the setup – now you have an excuse when it fails

- when you get bad result, you blame other people or external factors – they "ruined" your experiment

- you view trying again as fruitless

- but, might give it a halfhearted effort to keep advisor/professor happy

Growth mindset:

- you acknowledge that experiment might not work

- you give your best effort to get things right

- when you get bad result, you view experiment as a challenge that you want to solve

- you view trying again as productive and fun because you believe hard work can (eventually) yield progress

- doesn't matter what others think, because you know you're giving your best

Which of these pathways is more likely to lead to success in your research?

Looking back, I see mindset everywhere

- Rewind back to 2007…

- For ~10 years I had known that I desperately wanted a career in academia…

- …but I was convinced it was unattainable

me: "I look at what you do and I just don't think I can do that"

my PhD advisor: "of course you can't."

"not yet. but you'll get there."

My "top hits" of fixed mindset

- Fixed mindset thought: If I can't do what they can right now, then I'll never be able to.

Our thought patterns

- Our brains develop patterns of thinking through repeated use

- We can change our thought patterns, but we have to:
  - recognize what is wrong with the current path
  - create a new path (and keep using it!)

My "top hits" of fixed mindset

- Fixed mindset thought: If I can't do what they can right now, then I'll never be able to.

- Cognitive distortion: I'm assuming that they have always had that ability. I can't see that they have developed it over time through work.

- Growth mindset thought: I may not ever reach the same skill level as them, but I can grow and improve every day, and over time that can make a big difference. What can I do **today** to start?

- Fixed mindset thought: I'm worried that if I try this experiment, I might make a mistake or it might fail.

- Cognitive distortion: If this experiment fails, it means that I'm not good at research, and then that means that my future experiments will fail also.

- Growth mindset thought: I'm trying something new, so I might make a mistake or fail, but I will still be farther along than if I never tried. And, I will learn something that helps me do better next time.

Your turn!

- Take 3 min to think about an area where you are struggling with self-doubt or fear of failure and write down:
  - What is the fixed mindset thought pattern that drives this?
  - What is the cognitive distortion? Where am I not seeing the real situation?
  - What is an alternative thought pattern I can use?
- Discuss your answers in your breakout group (~7 min)

- Failure is not the goal, but rather **developing comfort** with the possibility of failure can **lead us toward success**

- We can **recognize** and **change** the thought patterns that fuel our self-doubt and fear of failure

- Our thoughts about failure and intelligence impact the **success of those we teach and mentor**

- When we do fail, we can still **learn and grow** from the experience and it may just fuel **future success**

Acknowledgements
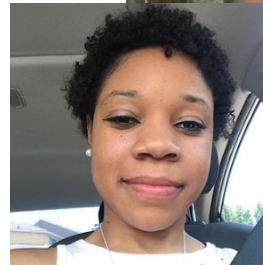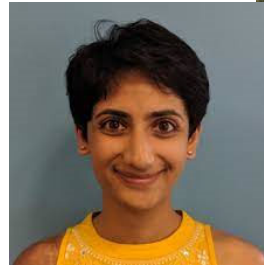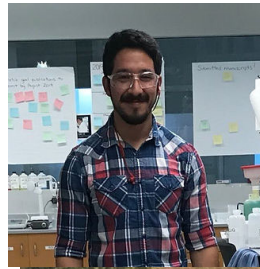
@jenheemstra @HeemstraLab (student run!)

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