

Attitude Determines Altitude: *Engineering Yourself*

Randy Shoup

@randyshoup

[linkedin.com/in/randyshoup](https://www.linkedin.com/in/randyshoup)





<http://travellingmoods.com/wp-content/uploads/2015/02/Mount-Everest1370207712.jpg>

About Me

Swiss-German / Catholic roots

Grew up in the SF Bay Area

Attended private high school

*Studied Political Science /
Mathematical and Computational
Science at Stanford*

*Studied abroad in West Berlin and
Kraków*



From International Law to Software Engineering

High school debater

*Passionate about East-West relations
and arms control*

*Entered joint JD / MA program at
Stanford Law School and SAIS*

Discovered I loved software more!



Software Engineering

Chief Engineer at eBay



Engineering Director at Google



VP Engineering at Stitch Fix



STITCH FIX™

VP Engineering at WeWork



Also About Me

Child of divorced parents, raised by single mom

Financial need / work-study scholarship at every school I ever attended

Divorced

Single dad



"I'LL ALWAYS BE
THE GUY WHO
GOT DIVORCED."



Proud of my son

SINGLE FATHER

***“Nicht geschimpft
ist genug gelobt”***

**“Lack of complaint
is praise enough”**



Growth Mindset



Trust



Confidence

Growth Spectrum

~~I cannot
get better~~

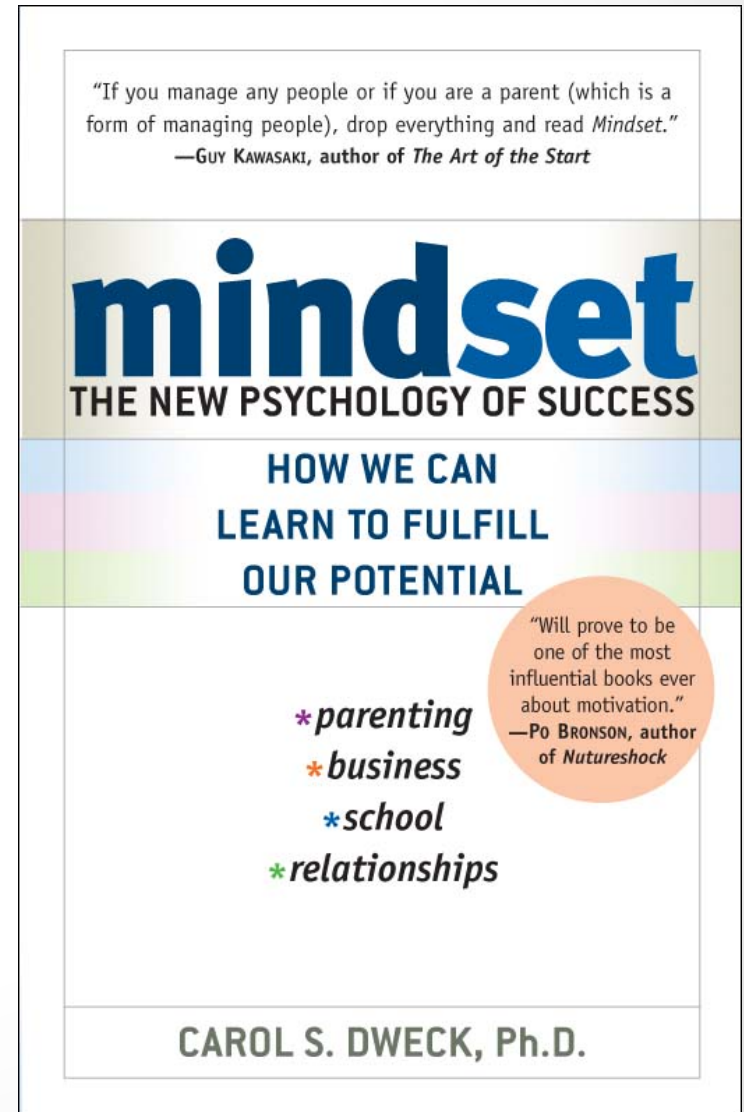
I know I
can
improve

~~I am never
good
enough~~



The Growth Mindset

- Dr. Carol Dweck of Stanford
- Your **self-theory about intelligence and talent** determines your learning achievement, skill acquisition, professional success
- Most effective way to improve is to know that you can
-

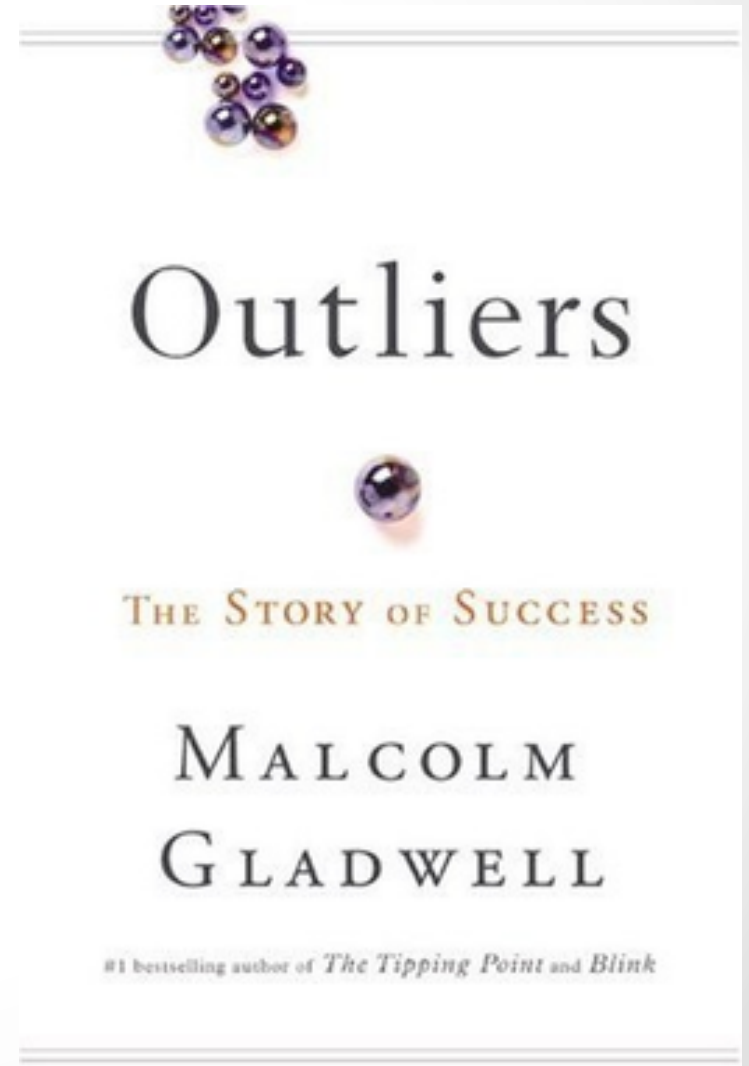


Fixed vs. Growth Mindset

Fixed Mindset	Growth Mindset
<i>Talent is static</i>	<i>Talent can be developed</i>
<i>Leads to a desire to look smart and therefore a tendency to ...</i>	<i>Leads to a desire to learn and therefore a tendency to ...</i>
Avoid challenges	Embrace challenges
Give up easily due to obstacles	Persist despite obstacles
See effort as fruitless	See effort as path to mastery
Ignore useful feedback	Learn from criticism
Be threatened by others' success	Be inspired by others' success

The 10,000 Hour Rule

- “Ten thousand hours is the magic number of greatness.”
- Deliberate practice with constant challenge



•

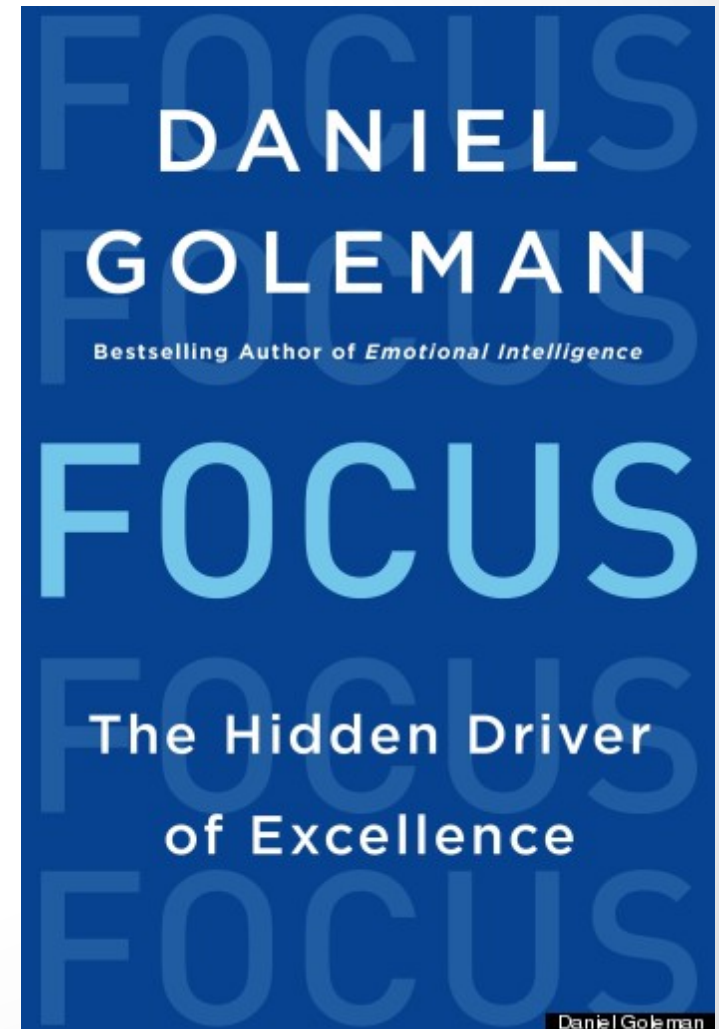
“Practice isn’t the thing you do once you’re good. It’s the thing you do that makes you good.”

– Malcolm Gladwell, *Outliers*



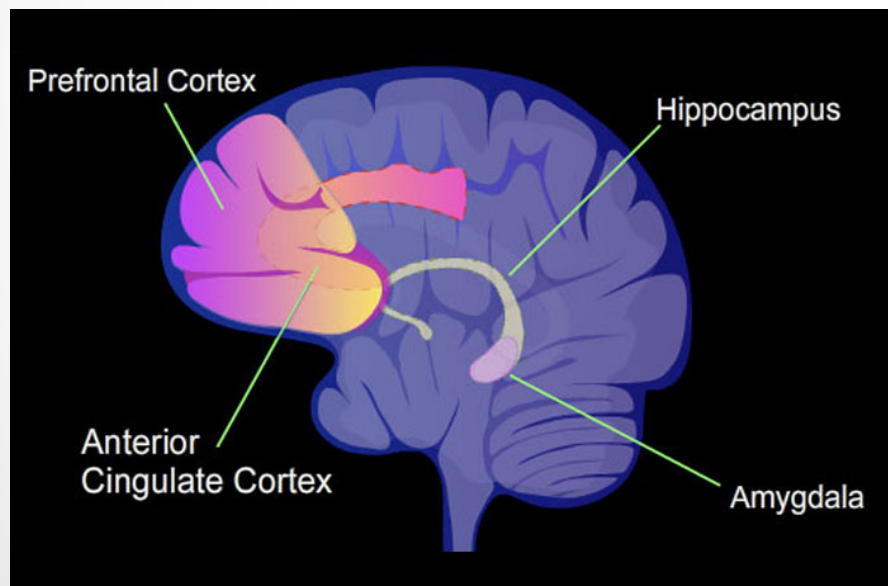
Focus and Attention

- Psychologist Daniel Goleman, 2013
- Ability to focus (“*cognitive control*”) is the best predictor of success and high achievement



Focus and Attention

Focus is the ability to moderate between two parts of the brain:



- Top-down higher brain
 - Neocortex
 - Executive function
 - Deliberative, reflective, self-aware
- Bottom-up lower brain
 - Amygdala
 - Emotion and motivation
 - Impulsive, uncontrolled

Focus and Attention

Complex interplay between Creativity and Execution:

- Creativity from “open awareness”
 - Daydreaming
 - Finding unexpected connections
- Execution from focus
 - Goal focus
 - Resistance to distraction

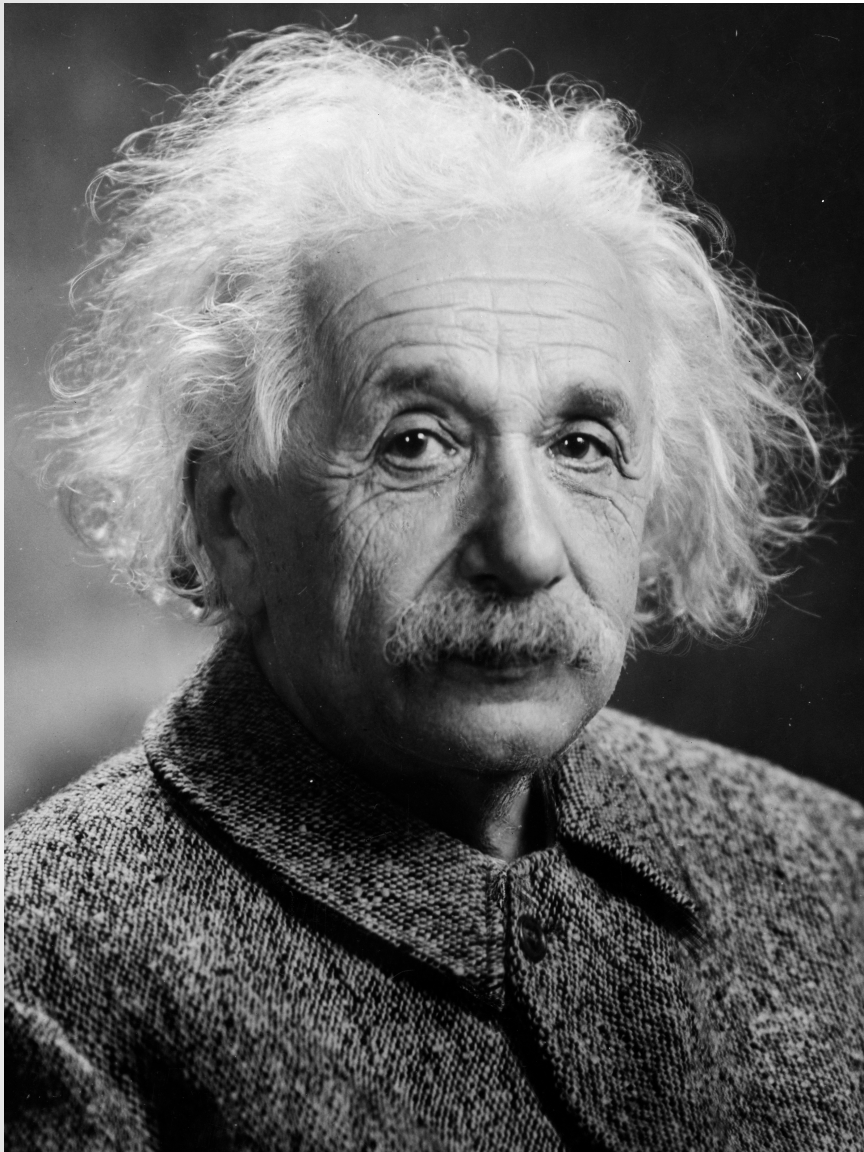


Attention is a “Mental Muscle”

“From the perspective of cognitive science, all meditation methods are methods to train attention.”

– Daniel Goleman





“It’s not that I’m so smart; it’s just that I stay with problems longer.”

Richard G Shoup (1943-2015)

*PhD in Computer Science,
Carnegie Mellon University 1970*

*Proposed programmable logic
chips (aka FPGAs)*

*Pioneered computer graphics at
Xerox PARC at age 30*

*Won Emmy and Academy Awards
for SuperPaint system*

Professional-level jazz trombonist



- [https://en.wikipedia.org/wiki/Richard_Shoup_\(programmer\)](https://en.wikipedia.org/wiki/Richard_Shoup_(programmer))

William K Reilly (1940-)

BA Yale, LLB Harvard Law, MUP
Columbia

Fluent in French

President and Chairman of World
Wildlife Fund

Appointed EPA Administrator by
President George W Bush

Appointed Chair of Gulf Oil Spill
Commission by President Obama

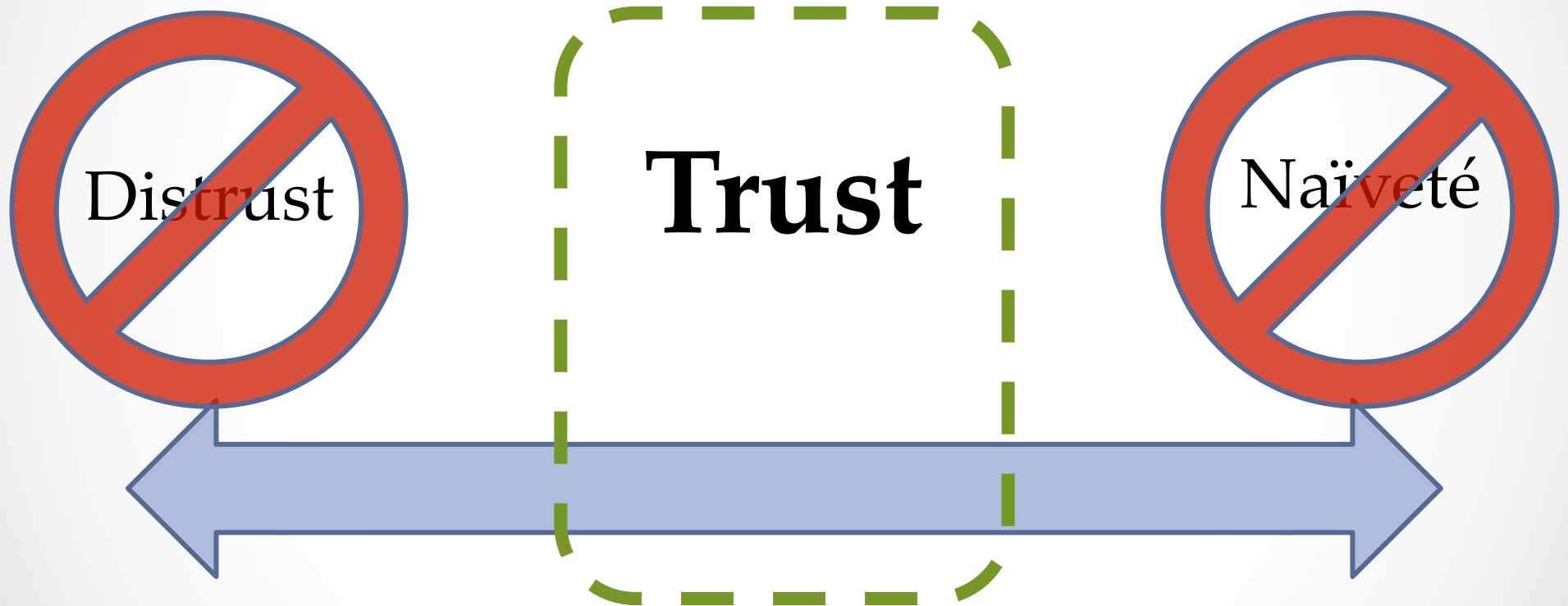


- https://en.wikipedia.org/wiki/William_K._Reilly

HAPPINESS EQUALS
REALITY MINUS
EXPECTATIONS.

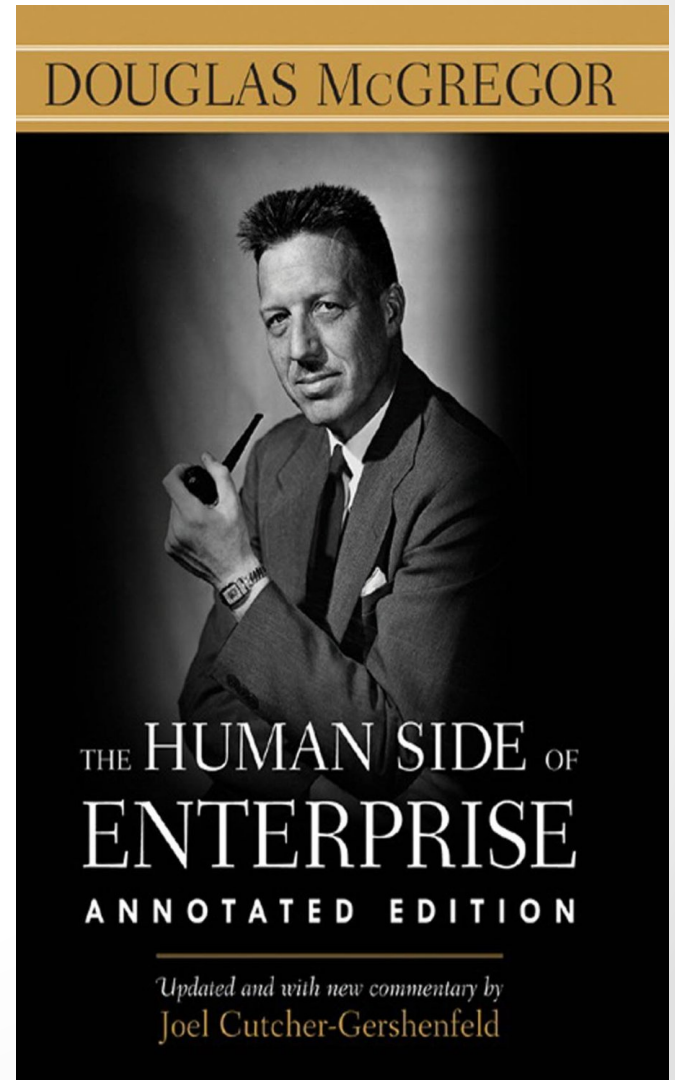
– Tom Magliozzi, *Car Talk*

Trust Spectrum



Theory X vs. Theory Y

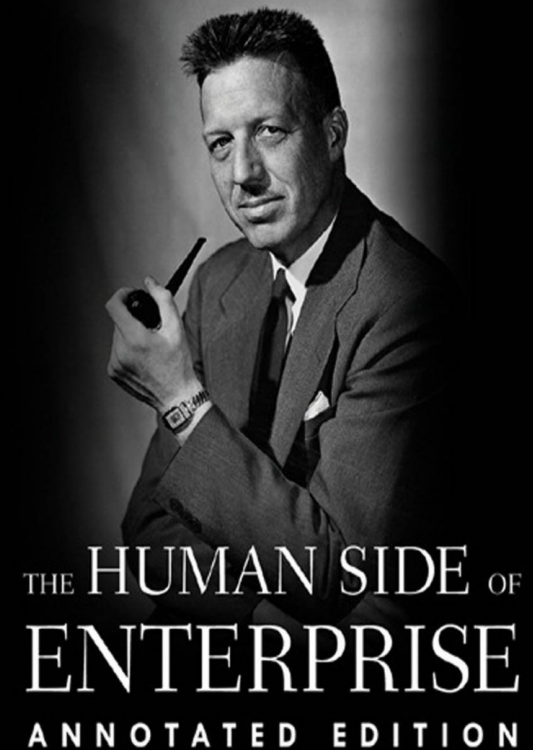
- Dr. Douglas McGregor, 1960
- Leadership's beliefs about what motivates employees



Theory X vs. Theory Y

- **Theory X:** people are inherently lazy and avoid responsibility, require extrinsic motivation
- **Theory Y:** people are intrinsically motivated, seek ownership, want to perform well

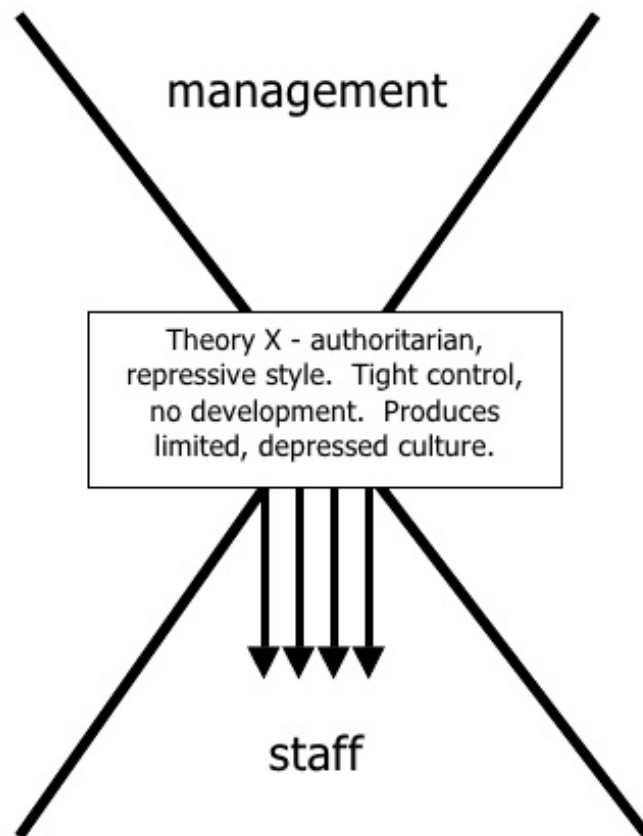
DOUGLAS MCGREGOR



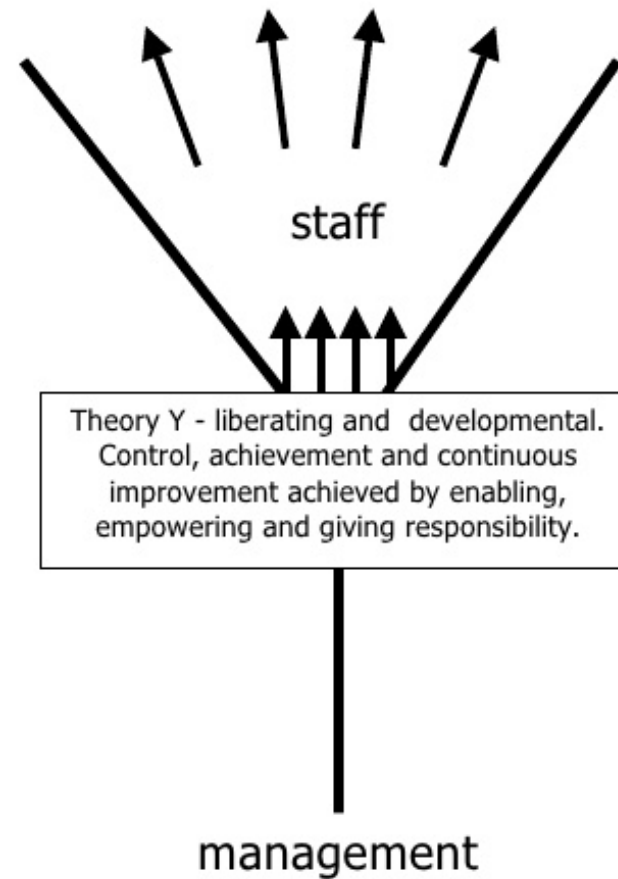
THE HUMAN SIDE OF
ENTERPRISE
ANNOTATED EDITION

*Updated and with new commentary by
Joel Cutcher-Gershenfeld*

'Theory X'



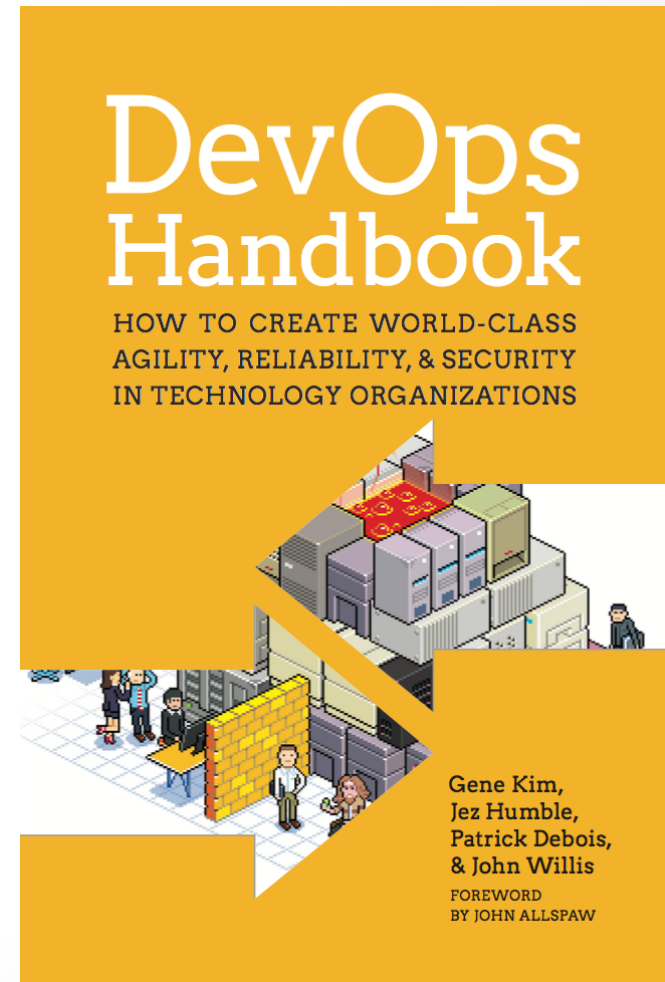
'Theory Y'



Westrum

Organizational Model

- Generative Organization
 - Trust and Sharing
- Bureaucratic Organization
 - Rules and Processes
- Pathological Organization
 - Fear and Threat



Psychological Safety



re:Work

- Team is **safe for interpersonal risk-taking**
- “Being able to show and employ one’s self without fear of negative consequences”
- More important than any other factor in team success

**“If you can’t change your
organization,
change your organization.”**

– Martin Fowler



Confidence Spectrum



“Whether you think that you can or you can’t, you are usually right.”

– Henry Ford



“Despite outstanding academic and professional achievements, women who experience the **Impostor Phenomenon** persist in believing that they are really not bright and have fooled anyone who thinks otherwise.”

– Clance and Imes, 1978

- http://www.paulineroseclance.com/pdf/ip_high_achieving_women.pdf •

“We find that *professional role confidence* predicts behavioral and intentional persistence, and that **women’s relative lack of this confidence contributes to their attrition.**”

– Cech, et al., 2011

• [Cech, et al., “Professional Role Competence and Gendered Persistence in Engineering”, 2011](#) •

“Impostorism affects a wide range of people ... **70% of people will experience** at least one episode of this **Impostor Phenomenon** in their lives.”

– Jaruwan and Alexander, 2011

- [Jaruwan and Alexander, "The Impostor Phenomenon", 2011](#)

QCon NEW YORK

Speaker: Randy Shoup

Consulting CTO (former Google and eBay)



Randy Shoup is Consulting CTO. Randy has worked as a senior technology leader and executive in Silicon Valley at companies ranging from small startups, to mid-sized places, to eBay and Google. In his consulting practice, he applies this experience to scaling the technology infrastructures and engineering organizations of his client companies.

Find Randy Shoup at

<https://twitter.com/randysoup>

<http://www.linkedin.com/in/randysoup>

Keynote: Attitude Determines Altitude - Engineering Yourself

Location: **Salon A/B/C/D**

Day of week: **Thursday**

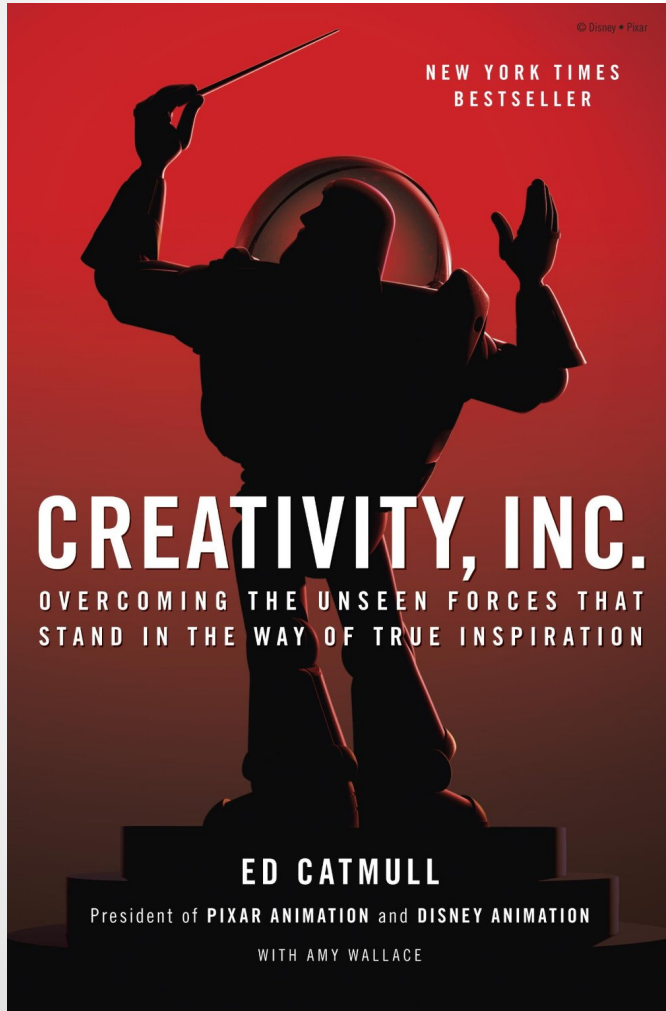
Duration: **9:00am - 10:05am**

What makes a 10x engineer, or designer, or leader? It turns out that it is a surprisingly small part aptitude -- our skill at a particular task, and a surprisingly large part attitude -- how we go about it. It is far less the contributions of genetics, or education, or circumstance, than it is how we approach challenges, limitations, and opportunities in our work.

Weaving together diverse threads from Carol Dweck's growth mindset, to Daniel Pink's work on motivation, to modern DevOps culture, we will explore the outsized power of attitude. A wonderful consequence is that our ability to make an exceptional impact is more malleable than we often believe, and it is therefore more amenable to our own influence -- to being *engineered*! This talk will particularize these ideas in a software development context -- from focus and attention, to drive and motivation, to honesty and empathy, to trust and forgiveness.

You will take away a number of concrete suggestions to improve and optimize your approach to your own work -- to make yourself a more effective engineer, designer, or leader. You may be surprised at how quickly improvements in your teams, your products, and your systems will follow.

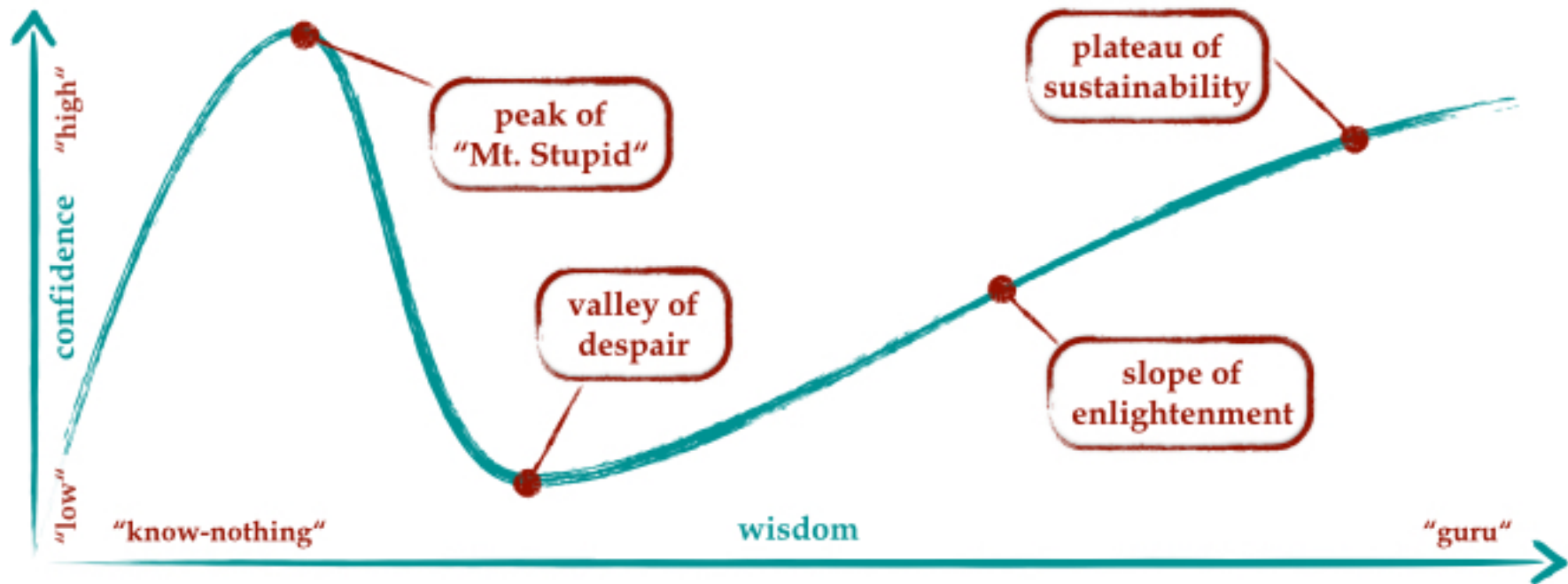
Confidence and Honesty



- Ed Catmull was interviewing at Lucasfilm in 1979 to start a computer graphics group
- George Lucas asked "Who else should we be talking to?"
- Catmull suggested <all the big names in computer graphics>
- No other candidate had shared any of those names (!)

Overconfidence and Dunning-Kruger

Dunning-Kruger effect





Growth Mindset



Trust



Confidence