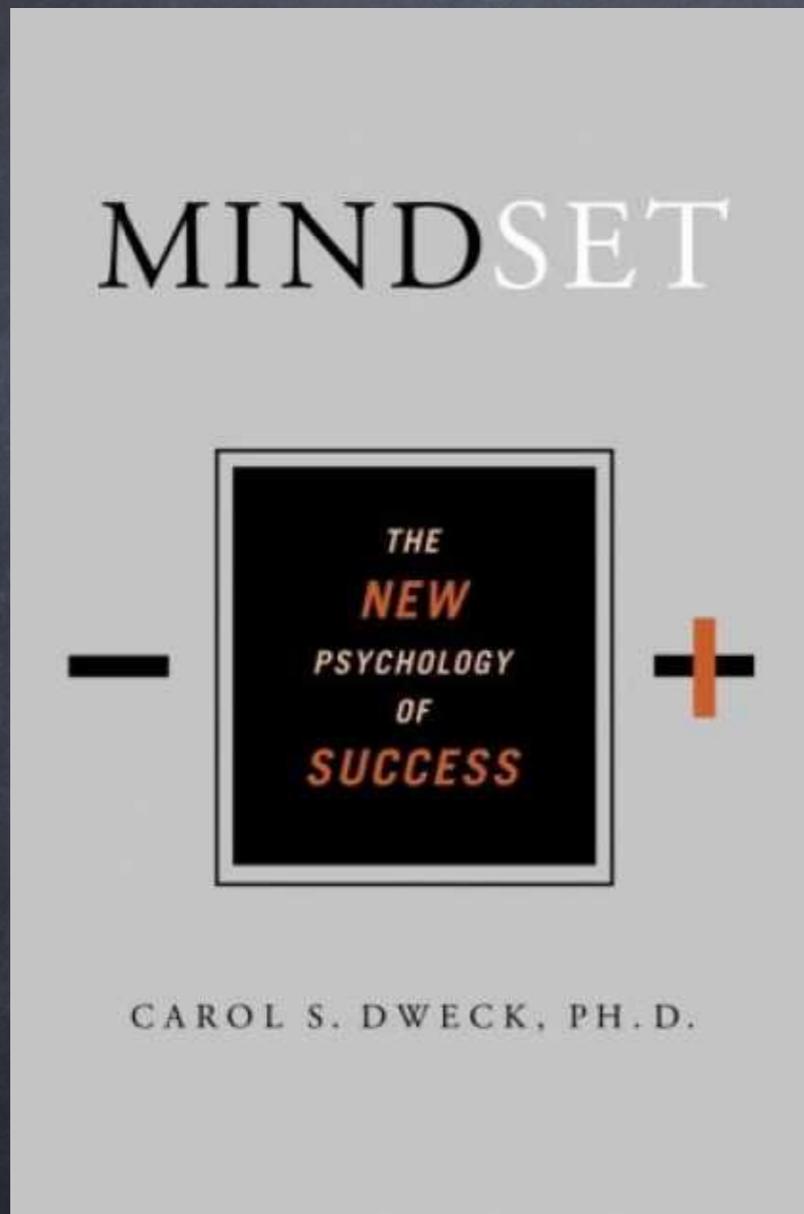


Growth Mindset

Presented to :
Remsenburg-Seponk PTO
March 2016

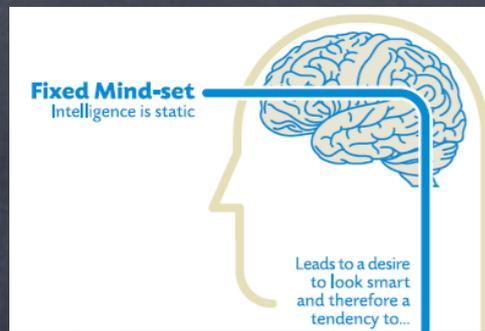
Ron Masera, Ed.D
Adrienne Cirone

Carol Dweck, Ph.D.

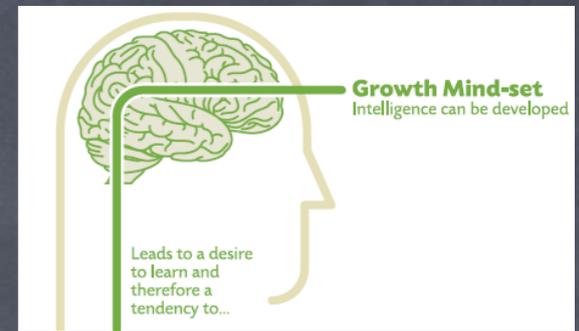


Common Characteristics of successful adults

- Perceive that the process of improvement is within their control
- Believe that process rather than innate ability leads to success



Mindset



Fixed Mindset

- Success comes from being smart
- Genetics, environment determine what we can do
- Some kids are smart, some aren't
- Teachers can't override students' profiles

Fluid (Growth) Mindset

- Success comes from effort
- With hard work, most students can do most things
- Teachers CAN override students' profile
- A key role of the teacher is to set high expectations, provide support, ensure student focus and find the **THING** that makes school work for each student

(Dweck, 2006)

Mindset Research

- 400 Seventh Grade Students
- Completed easy puzzles
- Random assignment into two groups
 - Group 1 – Complimented for innate intelligence “You must be smart at this”
 - Group 2 – Praised for effort “You must have worked hard”



Option for follow up task

- Another easy one
- Harder puzzle that promised to be a great learning experience

Results

- More than 50% of the children who were praised for innate intelligence chose the easy follow-up tasks
- 90% of those praised for their hard work chose the more difficult puzzles that would be great learning experiences

What generalizations are often made with regard to differences in achievement for students in public schools?

Think about your experiences in school, as a student and as a teacher and consider:

* Gender

* Ethnicity

* SES

* Etc...

Generalizations about achievement in School

Girls are not good in math and science (Boys better)

* Girls have neater handwriting

Higher SES = Higher achievement

Girls are better behaved

* Lower SES students receive less services (less advocacy)

* Asians are better at math

* Boys are hyperactive

Stereotype Threat

Claude Steele – Stanford University

- * When you are worried about confirming a stereotype, you get anxious and as a result perform worse



Princeton Miniature Golf Study

Claude Steele



Subjects - Black and White students at Princeton University

Before trying a ten-hole miniature golf course students were told either:

“Test of natural ability”, or

“Test of your ability to think strategically”

Results :

- * White students who were told, “Test of your natural ability” scored four strokes worse than those told, “Test of your ability to think strategically”
- * Black students who were told, “Test of your ability to think strategically” scored four strokes worse than those told, “Test of your natural ability”

Senior Citizens and Memory

* Subjects in 60s, 70s and 80s

* One group instructed to read an article about how memory fades with age *before* they took a memory test;

* Other group just took the test

* Those who did not read the article before the test:

* Remembered 58% of words

* Those who read the article before the test:

* Remembered 44% of words



Girls and Math

- * Before a challenging math test, female college students need only be reminded that they are female for them to perform worse than female students who do not receive that cue.



Aronson Texas Math Experiment



* Tested effectiveness of mindset changing interventions

Subjects – Low-Income 7th grade students

* Each student assigned a college student as mentor – two 90 minute meetings and regular email communication

- Experimental Group - growth mindset messages – *Intelligence is malleable*
- Control group - standard messages - *Drug use interferes with achievement*

* Administered the Texas Assessment of Academic Skills (TAAS)

* *Growth mindset group performed significantly better

* **Specifically for girls, where a proven stereotype threat existed– Completely closed the male- female gap (Scores rose from 74 to 84)



$$\text{If: } H_q = \sum_{\omega} h_{\omega}^k + \frac{1}{\beta} \sum_{j \in \Lambda} J_j$$

$$\text{Then: } -\frac{1}{\beta} \ln(\text{Tr} \{ e^{-\beta H_q} \}) = \sum_{j \in \Lambda} h_{j_0}^k \langle \sigma_j^k \rangle$$

$$= S_0 + \sum_{j \in \Lambda} \mathcal{L} \left(\frac{J_j}{\beta} \right)$$

$$= -S_0 + \sum_{j \in \Lambda} J_j$$

$$+ \sum_{j \in \Lambda} \left(\frac{J_j}{\beta} \right)^2 \left(\frac{1}{\beta} \right)$$

365!

(5-N)/365

(melm)

$\langle \sigma_j^k \rangle$
 $\left(\frac{J_j}{\beta} \right)$

High Achievers

Larry's Brother



- Lived in the shadows of Larry, the *gifted* athlete of the family
- Challenged his older brother daily despite always losing to him
- Kept pushing insisting to play HORSE until he won
- Cut from his HS Varsity basketball team in his sophomore year
- Constantly worked on weakest aspect of his game
- Claims ALL his motivation for hard work came from reflecting on his failures

http://www.youtube.com/watch?v=-EyR0gp9Mk#feature=player_embedded

Ted Williams

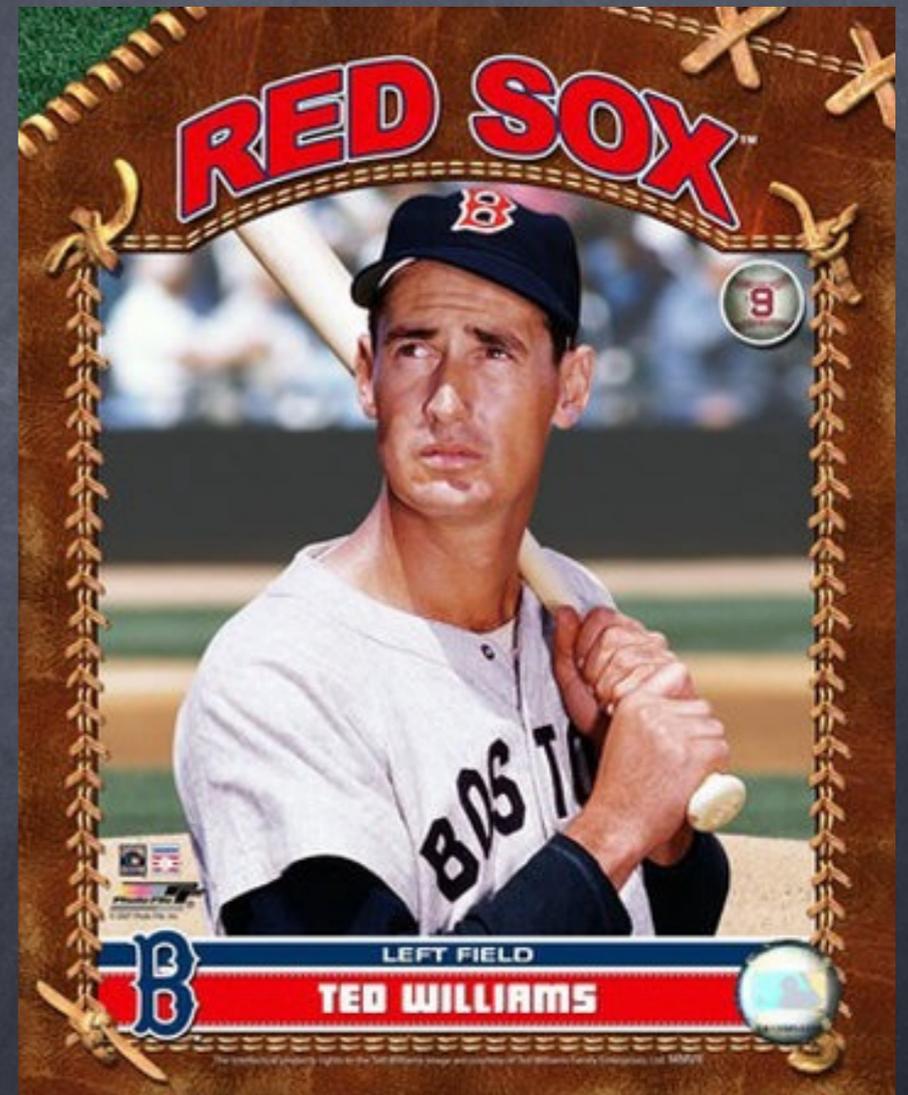
Descriptions of Ted Williams

- "Natural Ability far ahead of everybody in that era" ~Bobby Doerr
- Laser-like eyesight..."Sees more of ball than any man alive" ~ Ty Cobb

“A lot of Bull!” ~ Ted Williams

Greatness was not a *thing* to Ted Williams it was a *process*

- Super discipline not eyesight
- Practice, practice, practice
- Study – Pitchers and Science of hitting

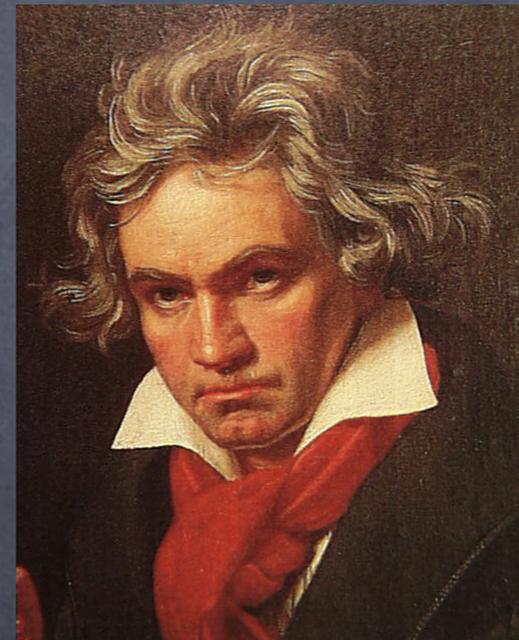


High Achievers



Mozart

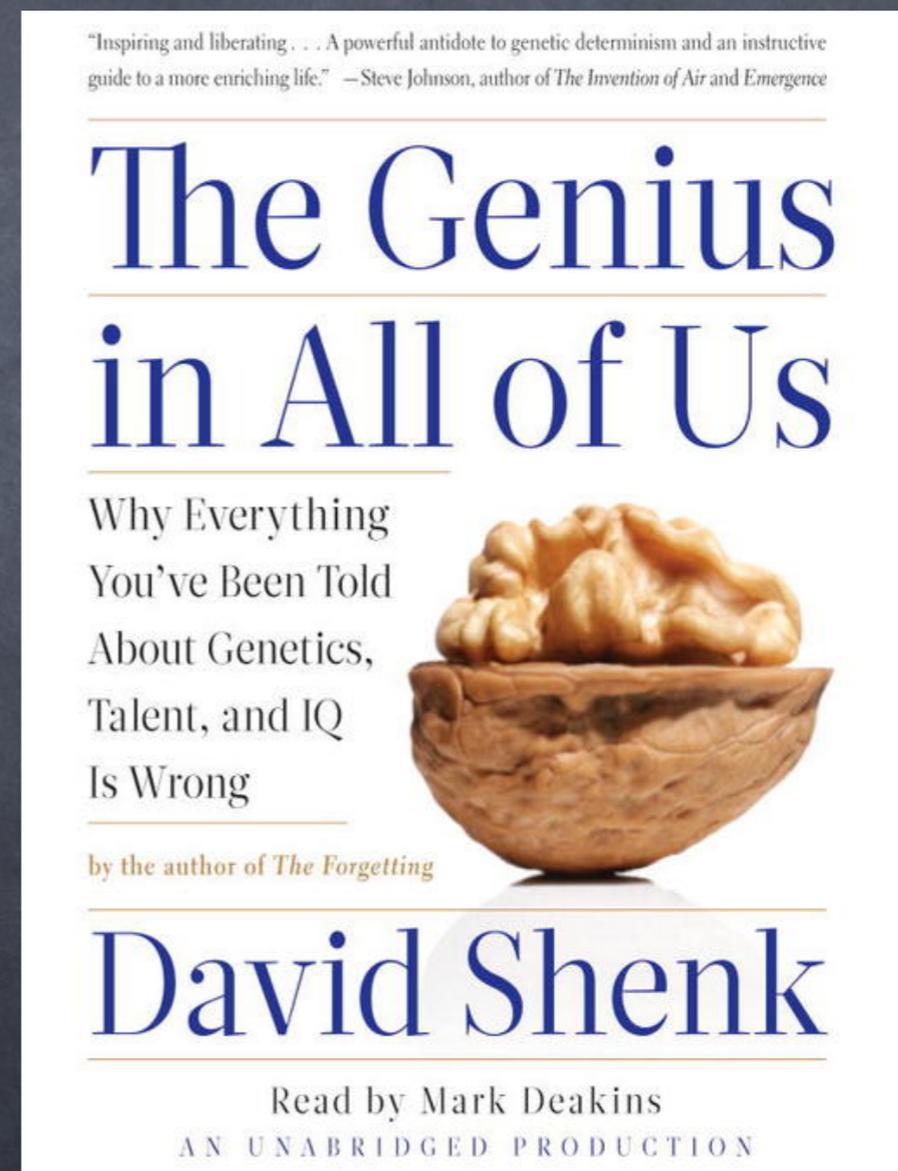
Beethoven



Yo Yo Ma

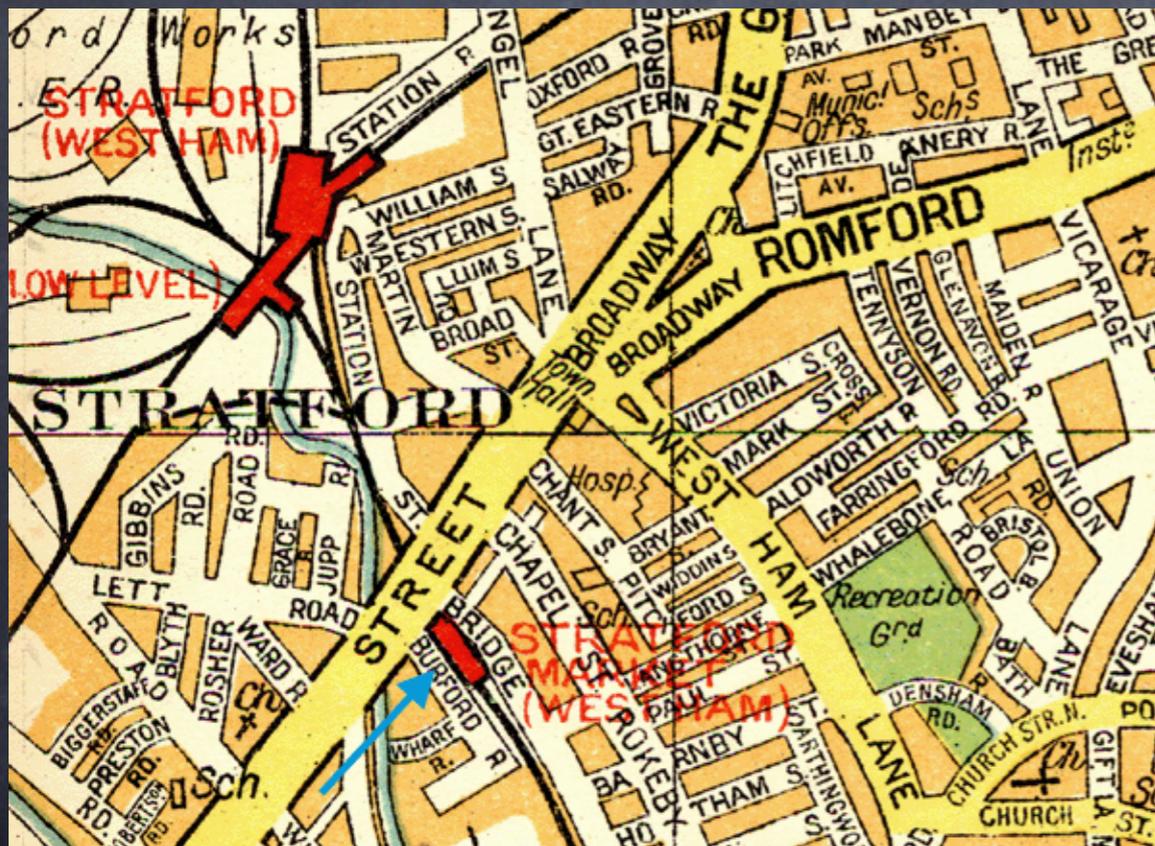
Nature VS Nurture No More

- Intelligence is not fixed
- Genes X Environment
- Genes are constantly being influenced by environmental factors



What do functional MRIs tell us?

London Cabbies



- Within a six-mile radius 25,000 streets connect and bisect at every possible angle with dead ends abound
- “the Knowledge”
- Experienced Cab Drivers had greatly enlarged posterior hippocampus – Spatial relationships
- Correlated this with experience of cab drivers

<http://www.youtube.com/watch?v=iAgX6qLJEMc>

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Shenk, David, (2010) *The Genius in All of Us*, New York: Anchor Books.

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Thank You for coming!