The Psychology of Achievement

David Meketon
Department of Psychology
University of Pennsylvania
Cookie Monster Learns to Practice Self-Control
What is Self-Control?

The ability to voluntarily regulate thoughts, emotions, and behavior in the service of a valued goal.
Questionnaire Measures of Self-Control

• Brief Self-Control Scale, Children’s Behavior Questionnaire ...

• Inexpensive, quick, and reliable, but...
  – Response bias
  – Social desirability bias
  – Memory recall limitations
  – Acquiescence bias
  – Halo effects
  – And so forth...
Self-control: resisting the “hourly temptations”
8
-1

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7
2
-6
-8

Do math

Play game or watch movie

Play game or watch movie

Do math
Will Power

“I consider myself to be of basically average talent…”

“The key to life is on a treadmill...When I say I am going to run three miles, I run five. With that mentality, it is actually difficult to lose.”

– Will Smith
High vs. Moderate Challenges

“People seem to have the idea that the way to eminence is one of great self-denial, from which there are hourly temptations to diverge...This is true enough of the great majority of men, but it is simply not true of the generality of those who have gained great reputations.”

—Galton (1892)
• Cox (1926) common traits of 300 geniuses
  – *Tendency not to abandon tasks in the face of obstacles.* Perseverance, tenacity, doggedness.
  – *Tendency not to abandon tasks from mere changeability.* Not seeking something fresh because of novelty. Not “looking for a change.”

• Willingham (1985)
  – Follow-through, “evidence of purposeful, continuous commitment to certain types of activities versus sporadic efforts in diverse areas” was the best predictor of success in college other than SAT and high school rank
## Grit Scale

### Passion for long-term goals

<table>
<thead>
<tr>
<th>Statement</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>New ideas and new projects sometimes distract me from previous ones.</td>
<td>*</td>
</tr>
<tr>
<td>I become interested in new pursuits every few months.</td>
<td>*</td>
</tr>
<tr>
<td>My interests change from year to year.</td>
<td>*</td>
</tr>
<tr>
<td>I have been obsessed with a certain idea or project for a short time but later lost interest.</td>
<td>*</td>
</tr>
<tr>
<td>I often set a goal but later choose to pursue a different one.</td>
<td>*</td>
</tr>
<tr>
<td>I have difficulty maintaining my focus on projects that take more than a few months to complete.</td>
<td>*</td>
</tr>
</tbody>
</table>

### Perseverance for long-term goals

<table>
<thead>
<tr>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have overcome setbacks to conquer an important challenge.</td>
</tr>
<tr>
<td>I have achieved a goal that took years of work.</td>
</tr>
<tr>
<td>I am diligent.</td>
</tr>
<tr>
<td>Setbacks don’t discourage me.</td>
</tr>
<tr>
<td>I finish whatever I begin.</td>
</tr>
<tr>
<td>I am a hard worker.</td>
</tr>
</tbody>
</table>
Skill as a function of deliberate practice

Figure adapted with permission from “The scientific study of expert levels of performance” by K.A. Ericsson, p. 90, © 1998
National Spelling Bee
Deliberate practice is hard
...and not that fun

Spelling Bee Preparation

Deliberate Practice  Testing  Verbal Leisure Activities

Enjoyment  
Effort

15
West Point Beast Barracks
Grit predicted summer retention

- Grit predicted summer retention (94% of the incoming cadets) more robustly than did self-discipline, Whole Candidate Score (high school rank, SAT, leadership potential rating, physical aptitude)
- Grit predicted drop outs better than all other measured variables combined
- Grit and SAT score were weakly inversely related ($r = -.05, p < .09$)
West Point Summer Retention

Quartile

Grit

Whole Candidate Score

Summer Retention

Quartile

1 2 3 4
Counterfactual thinking
Counterfactual Comparison

B = -0.59*

Grit

B = -0.31*

Retention

B = 1.78*

(B = -0.05)
Willpower: trying hard not to do something that you really want to do
Some children tend to act more self-controlled than others
Global goal: Academic success
Temptation: Angry Birds

THE ROOTS OF EDUCATION ARE BITTER, BUT THE FRUIT IS SWEET
-ARISTOTLE
Sloane Study of Youth and Social Development (N = 1228)
How *important* is what you are doing to your *future goals*?
Are you happy?
Domain-specific impulsive behaviors in children

- I forgot something I needed for class
- I couldn't find something because my desk, locker, or bedroom was messy
- I did not remember what my teacher told me to do
- My mind wandered when I should have been listening
- I lost my temper at home or at school
- I interrupted other students while they were talking.
- I said something rude
- I talked back to my teacher or parent when I was upset
Results:
Self-discipline predicts final GPA above and beyond Intelligence.
Intelligence

Self-Control

Homework and classroom conduct

Skills/knowledge acquired in school

Skills/knowledge acquired outside school

Report card grades

Standardized achievement test scores
The perception of uncertain, threatening circumstances

Stressful Life Events (Fall 2010) → Perceived Stress (Spring 2011)

Perceived Stress (Spring 2011) → Self-Control (Summer 2011)

Self-Control (Fall 2010) → Perceived Stress (Spring 2011)

Stressful Life Events (Fall 2010) → Self-Control (Fall 2010)

Correlation Coefficients:
- .25*** from Stressful Life Events (Fall 2010) to Perceived Stress (Spring 2011)
- -.07* from Perceived Stress (Spring 2011) to Self-Control (Summer 2011)
- -.04 from Stressful Life Events (Fall 2010) to Self-Control (Fall 2010)
- .79*** from Self-Control (Fall 2010) to Perceived Stress (Spring 2011)

Note: *** indicates p < .001, * indicates p < .05.
Strategies for Self-Control
Grit means never quit

http://www.youtube.com/watch?v=doqS35FfcUE
Psychologically distancing oneself from an angry memory

Replay the event as it unfolds in your imagination through your own eyes

VS

Replay the event as it unfolds in your imagination as you observe your distant self
...reduces negative affect

Goal setting and planning

• Goal setting
  – What *specific* goal do I want to achieve?
  – What *good thing* will happen if I achieve this goal?
  – What *obstacles* stand in the way of my reaching this goal?

• Planning where, when, and how you will get around or avoid the obstacles
  – “If it is a Tuesday at 6pm, **then** I will go to my bedroom desk and do my math homework.”

Oettingen, Gollwitzer, Duckworth, et al.
From strategies to habits

“Our virtues are habits as much as our vices...our nervous systems have grown to the way in which they have been exercised, just as a sheet of paper or a coat, once creased or folded, tends to fall forever afterward into the same identical folds...”

– William James (1899)
MCII: Goal Setting and Planning

Today’s study wish: ________________________________

Best outcome: ________________________________

Obstacle: ________________________________

If-then plan:
If ________________________________ , then ________________________________
Obstacle (where and when) Action (to overcome obstacle)

Think about yesterday. How many times did you use W.O.O.P. yesterday?

- One or zero
- Two
- Three
- Four
- Five or more
Temperament and personality questionnaires measure behavior
Brief Self-Control Scale

• I have a hard time breaking bad habits
• I often act without thinking through all the alternatives
• I say inappropriate things
• Pleasure and fun sometimes keep me from getting work done
• I have trouble concentrating
• I am lazy
What processes determine self-controlled behavior?

• Capacities (things you can do)
  – Executive function, metacognitive strategies, scripts

• Information (what you perceive or believe)
  – Schema, implicit beliefs, cognitive biases

• Motivation (what you want...and want to want)
  – Subjective benefits and perceived costs of pursuing temptation vs. global goal
Example capacity: Executive function

• Single executive function tasks correlate with parent or teacher ratings of self-control, $r = .14$
Motivation

• **What I want**
  – Sloth
  – Anger
  – Gluttony
  – Greed (impulse buying)
  – Lust

• **What I want to want**
  – Work
  – Interpersonal harmony
  – Health
  – Future savings
  – Fidelity
Unpacking domain-specificity in self-control
Self-control by Temptation Interaction

![Graph showing the relationship between Impulsive Behavior and Temptation for low, mid, and high self-control groups. The graph displays three lines: blue for low self-control, red for mid self-control, and green for high self-control. The x-axis represents Temptation, and the y-axis represents Impulsive Behavior. The lines show an increasing trend as Temptation increases, with low self-control having the highest impulse and high self-control having the lowest impulse.](image-url)
Self-control by Perceived Harm Interaction
Temptation is in the eye of the beholder
Domain-specific impulsive behaviors in children

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Productivity = Skill $\times$ Effort

Skill = Talent $\times$ Effort

Productivity = (Talent $\times$ Effort) $\times$ Effort

Productivity = Talent $\times$ Effort$^2$
CBQ Effortful Control

• When drawing or coloring in a book, shows strong concentration
• Prepares for trips and outings by planning things s/he will need
• When building or putting something together, becomes very involved in what s/he is doing, and works for long periods
• Is good at following instructions
• Approaches places s/he has been told are dangerous slowly and cautiously
Eysenck Junior Impulsiveness Questionnaire

• Do you save regularly? (r)
• Do you think that planning takes the fun out of things?
• Do you get very annoyed if someone keeps you waiting?
• Do you often do things on the spur of the moment?
• Do you sometimes get so restless that you cannot sit in a chair long?