I want to win The Oscar, I want to win Olympic Gold and The Pulitzer. I also want a Grammy or two and a Tony.

you’ll need talent.

I know, I know. I’m only an infant. My talent could arrive at any moment...

"anything yet?"

I feel something but it might be gas.
Giftedness:
The Gift that Keeps on Giving
Introduction

- Stable versus unstable personal traits
  - e.g. gender versus hair color
- Which is giftedness?
- Often viewed as a childhood attribute
- This reflected by a recent web search
- What are the results of googling … ?
“gifted children” → 1,440,000 hits

versus post-childhood:

- “gifted adolescents” → 39,600 hits
  - “gifted teenagers” → 1,670 hits
- “gifted adults” → 24,700 hits
- “gifted elderly” → 56 hits
  - “gifted senior citizens” → 8 hits
and versus pre-childhood:

- “gifted babies” → 6,660 hits
- “gifted infants” → 540 hits
- “gifted zygotes” → 1 hit

the latter some Jon Stewart quip!
Giftedness can be a life-long trait

- This developmental continuity is especially conspicuous when we look at the highest levels of giftedness
- e.g., top 1% rather than top 10%
Superlative Performance Threshold

PERFORMANCE

Top 1%

Top 10%

AGE
From Conception to Reputation

- Genetic conception
- Gestation
- Infancy
- Childhood
- Adolescence
- Adulthood
- Death
- Posthumous reputation
Genetic conception
Genetic conception

- It all begins with the “gifted zygote”
- Galton’s 1869 *Hereditary Genius*
- Modern behavioral genetics: Giftedness is most likely
  - *multi-polygenic* (many polygenic traits)
  - *emergenic* (multiplicative/configurational)
  - *epigenetic* (unfolds over time)
- In short, a complex, dynamic process
Gestation
Gestation

- Intrauterine environment
- e.g., Geschwind’s theory
  - elevated testosterone after 20th week
    - right > left posterior hemisphere growth
    - giftedness/savantism
      - mathematical ability
      - artistic/spatial ability
      - musical ability

- Simon Baron-Cohen: “extreme male brain”
The Developmental “Dark Ages”
- Early developmental signposts not always indicative of later giftedness
- and may even be counter-indicative (e.g., delayed speech)

So when do the Dark Ages end?

What’s the earliest age at which the gift begins to manifest itself?
Fagan Test of Infant Intelligence

- Attention to novelty at 6-12 months predicts
  - adult IQ
  - academic achievement
- but this assessment concerns general intelligence (Spearman’s $g$)
- What about more domain-specific indicators?
Jeremy Bentham: English jurist and utilitarian philosopher (early IQ 180)
- Learned alphabet before talking
- At 3 began classical education when father buys a Latin grammar; same age read Rapin’s *History of England*
Feldman/Goldsmith (1986/2000) 6 prodigies

- a child who read music before he was four,
- two children who played winning chess before they entered school,
- another who studied abstract algebra in grade school,
- a youngster who produced typed scripts of original stories and plays before his fifth birthday, and
- a child who read, wrote, began learning foreign languages, and composed short musical pieces before he was out of diapers.
Winner (1996): Gifted Children

- Michael Kearney
  - speak at 4 months;
  - read at 8 months;
  - algebra on own at age 3

- KyLee Hench
  - fascinated with letters & numbers at 1.5
  - mental arithmetic at 2
  - playing math computer games by 3
SMPY (Julian Stanley et al.)

- Terry Tao: Fields Medal recipient
  - taught himself to read before 2;
  - using portable typewriter before 2.5;
  - solved math problems typical of 8-year olds by 3.
Childhood
Childhood

- Dark Ages rarely end before ages 2-3,
- and more commonly end at the age of a late preschooler or kindergartner
- even Mozart didn’t begin composing until 5 (with father’s help)
- and J. S. Mill didn’t write his first book (a history of Rome) until 6.5 (juvenilia)
Childhood

- During this age period various environmental factors kick in including:
  - Birth order (not prenatal!)
  - Traumatic, enriching, and diversifying events
  - Domain-specific role models and mentors, and
  - Expertise acquisition (10-year rule)

- That affect the type and degree of giftedness
- The “gift” as a nature-nurture collaboration
Adolescence
Adolescence

- Although the previously mentioned factors continue to nurture growth,
- the gifted youth can also be led astray from the path of optimal development:
- Peer groups become especially critical during this phase
- e.g., Csikszentmihalyi et al.’s (1993) *Talented teenagers*
Adulthood
Adulthood

- The Great Transformation from
  - Input to Output
  - Potential to Actual Achievement
  - Giftedness to Genius
Adulthood

- Accelerated career onset
  - Abbreviated expertise acquisition (< 10 years)
  - Early achievement (viz. 1st “hit” in 20s)
- Exceptional productivity or output (e.g., Napoleon, Edison, Picasso, Mozart)
- High impact (e.g., disciples, honors)
- Long, productive career
- Early- + late-bloomers << long-bloomers
- Hence, last testaments, old-age style shifts, swan-songs
Examples

- Cervantes:  
  - *Don Quixote*,  
  - Part II,  
  - age 68,  
  - died age 69
Examples

- Galileo:
  - *Two New Sciences*
  - age 74,
  - died age 78
Examples

- Goethe:
  - *Faust*, Part II,
  - age 83,
  - died age 83
Examples

- Verdi:
  - *Falstaff*,
  - age 85,
  - died age 88
Death
Death

- Life expectancy as contingent on achievement domain

- Examples:
  - Mathematicians versus Biologists
  - Poets versus Novelists
  - Military versus Political Leaders
  - Revolutionary versus Status Quo Politicians

- Precocity negative impact on longevity
<table>
<thead>
<tr>
<th>Genius</th>
<th>Age 1st masterwork</th>
<th>Age at death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arriaga (music)</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Galois (math)</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Chatterton (poetry)</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>
Posthumous reputation
Posthumous reputation

- Eventual eminence is a direct function of lifetime achievement,
- which is most often defined by the quality and quantity of output or impact
- As a result, the highest degrees of eminence are consistent across space and stable through time
Hence ...

- Giftedness can become
- the gift that keeps on giving!
- even *longer* lasting than …
Not the End