Why the Education system should focus on socioemotional skills: findings from the Dunedin Study

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Why self-control?

- The Dunedin Study
- Predicting adult outcomes
- Adolescent mistakes
- Costs to society
- Implications
What is Self-control?

Self-control is the ability to regulate one’s emotions, desires, and behaviours in the service of later rewards.

- Think before you speak or act
- Resist temptations
- Give considered response instead of an impulsive one
- Resist saying something inappropriate (or hurtful)
- Resist ‘tit for tat’ (hurting someone because that person hurt you)
- Resist jumping to conclusions
Self-control: Studied by all behavioural sciences

- **PERSONALITY PSYCHOLOGY** Conscientiousness, impulsivity
- **CHILD PSYCHOLOGY** Delay of gratification, difficult temperament
- **ECONOMICS** Inter-temporal choice, reward discounting
- **NEUROSCIENCE** Executive function
- **PSYCHIATRY** Inattention-hyperactivity
- **MANAGEMENT SCIENCE** Will power, self-discipline
Why Study Self-control?

Childhood self-control predicts success and failure in adult life, above and beyond intelligence and family wealth.
Self-control: More necessary today than it used to be?

- **AVOID OBESITY** in an era of ready food availability
- **MAINTAIN FITNESS** in an era of sedentary jobs
- **SUSTAIN MARRIAGES** in an era of easy divorce
- **PREVENT ADDICTION** in an era of access to substances
- **RESIST SPENDING** in an era of sophisticated marketing
- **SAVE FOR OLD AGE** in an era without guaranteed pensions
Outline

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## Retention in the Dunedin Study

<table>
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<tr>
<th>Age</th>
<th>Year</th>
<th>Number</th>
<th>Percent*</th>
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<tbody>
<tr>
<td>Birth</td>
<td>1972-73</td>
<td>1037</td>
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</tr>
<tr>
<td>3</td>
<td>1975-76</td>
<td>1037</td>
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<tr>
<td>5</td>
<td>1977-78</td>
<td>991</td>
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<tr>
<td>7</td>
<td>1979-80</td>
<td>954</td>
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</tr>
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<td>9</td>
<td>1981-82</td>
<td>955</td>
<td>92%</td>
</tr>
<tr>
<td>11</td>
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<td>925</td>
<td>90%</td>
</tr>
<tr>
<td>13</td>
<td>1985-86</td>
<td>850</td>
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<td>26</td>
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<td>980</td>
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<td>2004-05</td>
<td>972</td>
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<tr>
<td>38</td>
<td>2010-12</td>
<td>961</td>
<td>95%</td>
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*Percentage seen of those who were eligible (i.e. alive) at each age*
Measuring Childhood Self-control

- **Predictor:** A composite of ratings

- Persists across ages 3, 5, 7, 9, 11 years

- Agreed upon by multiple reporters
  - *Staff observations of child’s self-control in the clinic*
  - *Parents’ reports*
  - *4 different teachers’ reports*
  - *Child’s self-reports*
- Impulsive, acts without thinking.
- Can’t wait his or her turn.
- Low frustration tolerance.
- Dislikes effortful tasks.
- Fleeting attention, easily distracted.
- Lacks persistence, easily forgets goals.
- Often goes for the risky thing.
- Requires constant attention and motivation from an adult.
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Health Measures
Assessments of Physical Health
Cardiovascular fitness
Anthropometrics
Cardiovascular health
Blood pressure
Lung function
Dental examination
Laboratory tests
(cholesterol, inflammation, sexually transmitted infections, etc.)
Health Outcomes: A count of clinical measures in adulthood

- **Cluster of metabolic abnormalities (17%)**
  - E.g. obesity, blood pressure, cholesterol

- **Periodontal disease (20%)**

- **Sexually-transmitted infection serology (18%)**

- **Inflammation biomarkers abnormal (20%)**

- **Respiratory airflow obstruction (17%)**
Self-control gradient:
Children with low self-control had poorer health than those with high self-control.
Retinal vasculature imaging
Self-control gradient:
Children with low self-control had wider venular caliber in adulthood

Means adjusted for sex and retinal arteriolar caliber
Personal Interviews
(drug and alcohol dependence or addictions)
Health Outcomes:

DSM-IV substance dependence diagnoses in adulthood

- Tobacco dependence (19%)
- Alcohol dependence (8%)
- Cannabis dependence (5%)
- Harder Drug dependence (3%)
- Corroborated by informant reports
Self-control gradient:
Children with low self-control had more substance-use problems than those with high self-control.
Wealth Measures
Assessments of Financial Success
Adult wealth outcomes in adulthood

- Income in NZ dollars
- Occupational prestige
Self-control gradient:
Children with low self-control had less wealth than those with high self control
Financial planfulness in adulthood

- **Attitudes toward saving and saving behaviour**
  - E.g.
  - *Is saving for the future important to you?*
  - *Do you save money by putting money away and not touching it?*

- **Financial building blocks**
  - E.g.
  - *Home ownership*
  - *Investments*
  - *Retirement plan*
Self-control gradient:
Children with low self-control had not begun planning for the future.
Financial struggles in adulthood: self & informant reports

- Money-management difficulties
  E.g.
  - Do you find it difficult to meet the cost of...
    • Rent, mortgage
    • Phone or heating bills
    • Major repairs to car or house
    • Do you find yourself living paycheck to paycheck?

- Credit problems
  E.g.
  - Turned down for a credit card
  - Sold belongings to a pawnbroker
  - Declared bankrupt
Self-control gradient:
Children with low self-control had more financial problems than those with high self-control.
Crime Measures
Assessments of Criminal Outcomes
Criminal court convictions, age 18 to adulthood

New Zealand and Australian Police
Self-control gradient:
Children with low self-control had more crime conviction than those with high self-control.
Self-control gradient:
Children with low self-control had more single-parent child-rearing than those with high self-control.
Self-control gradient:

Children with low self-control were less warm/sensitive/stimulating parents with their own child.

Videotaped observations of parent-child interaction, when offspring were 3 years old.
All analyses shown today controlled for four main alternative explanations…

- **Gradients looked the same in**
  - *Children from high-income families*
  - *Children with above-average IQ*
  - *Girls*
  - *Children without ADHD diagnoses*
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Children with low self-control were more likely to make mistakes as teens...
In the “utopian” subsample of the cohort who as teens...

- did not smoke
- did not drop out of high school
- did not have an unplanned baby
Income

- Self-control gradient in utopian subsample
- Effect of snares
- Self-control gradient in full cohort

Adult Wealth Outcome: Z-Score

Childhood Self-control in Quintiles

Low | High

[Graph showing the relationship between childhood self-control quintiles and adult wealth outcome Z-scores, with lines indicating self-control gradient and effect of snares.]
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Costs to Government

Poor childhood self-control predicts duration of welfare-benefit use in adulthood

Welfare-benefit use records are from the New Zealand Ministry of Social Development
But are they happy?

Are people with very high self-control less satisfied with life?
Life satisfaction

Children with high self-control were more satisfied with life
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Multiple outcomes: Implications

- Enhancing self-control might reduce costs of...
  - crime control
  - health care
  - social welfare
  - a healthy and financially secure old age
  - improve the life chances of the next generation


Childhood vs. adolescence: Implications

- Preventing adolescent mistakes is not enough to eliminate the gradient of life success

- Consequences of self-control start accumulating from early childhood

- Early intervention for best cost/benefit ratio
Human Capital Investment

Rate of return to investment at different ages

Source: James J. Heckman
The self-control gradient: implications

- Targeted vs. universal intervention?

- Even children above average on self-control can benefit from better self-control skills

- Even intelligent children from well-to-do homes can benefit from better self-control skills

- The gradient implies universal enhancement
Teaching SAVING teaches SELF-CONTROL

www.sesamestreet.org/parents/topicsandactivities/toolkits/save
Is it time for modern nations to teach self-control skills to all children?
Acknowledgements

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For copies of research articles referred to in this presentation or other information on the Study, contact Michelle McCann:

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http://dunedin study.otago.ac.nz