THE ORIGINS OF HAPPINESS

12 December 2016

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THE NUMBERS WE NEED

The effects of everything on wellbeing, where

(1) Wellbeing is measured in a common currency, and

(2) All effects are measured simultaneously
THE METRIC: LIFE-SATISFACTION (0-10)

• Democratic (people decide what matters to them)
• Policy-makers like it.
LIFE-SATISFACTION (LS) AFFECTS VOTING

Incumbent vote share

= 0.64 LS
+ 0.36 Economic Growth
- 0.06 Unemployment
+ 0.15 Inflation

(β coefficients)

Source: See end note for all sources.
Determinants of Adult Life-Satisfaction

Family and schooling
- Income
- Parenting
- Family break-up
- Mother’s mental health
- Schooling

Child outcomes
- Intellectual
- Behavioural
- Emotional

Adult situation
- Income
- Education
- Employment
- Family
- Crime
- Physical health
- Mental health

Adult life-satisfaction
Life-satisfaction
OUR EVIDENCE

1. Birth cohort studies

• *British Cohort Study* (1970)

• *ALSPAC* (1991/2)
2. Annual panel studies of adults

- British Household Panel Survey
- German SOEP
- Australian HILDA

Also US (BRFSS).
DISTRIBUTION OF LIFE-SATISFACTION

Extremely dissatisfied

Completely satisfied
TWO QUESTIONS

1. Absolute effect

\[ \text{Life-sat} = \alpha_1 \text{Income} + \alpha_2 \text{Education} + \text{etc.} \]

\((0-10)\) \hspace{1cm} \text{ (£)} \hspace{1cm} \text{ (Years)}\]
2. Relative explanatory power: standardised coefficients (βs)

\[ R^2 = \beta_1^2 + \beta_2^2 + \ldots \]

\[ \beta_1 = \frac{\alpha_1 SD(Income)}{SD(Life-sat)} \]
WHAT EXPLAINS THE VARIATION IN LIFE-SATISFACTION?

<table>
<thead>
<tr>
<th>Feature</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>0.09</td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.02</td>
</tr>
<tr>
<td>Non unemployed</td>
<td>0.06</td>
</tr>
<tr>
<td>Non criminality</td>
<td>0.06</td>
</tr>
<tr>
<td>Partnered</td>
<td>0.11</td>
</tr>
<tr>
<td>Physical health (no. of conditions)</td>
<td>0.10</td>
</tr>
<tr>
<td>Mental health (diagnosed dep/anx)</td>
<td>0.19</td>
</tr>
</tbody>
</table>
## WHAT EXPLAINS WHO IS IN MISERY (LOWEST 10%)?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Life-satisfaction $\beta$</th>
<th>Misery $\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>0.09</td>
<td>-0.07</td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.02</td>
<td>-0.01</td>
</tr>
<tr>
<td>Not unemployed</td>
<td>0.06</td>
<td>-0.07</td>
</tr>
<tr>
<td>Non criminality</td>
<td>0.06</td>
<td>-0.04</td>
</tr>
<tr>
<td>Partnered</td>
<td>0.11</td>
<td>-0.08</td>
</tr>
<tr>
<td>Physical health (no. of conditions)</td>
<td>0.10</td>
<td>-0.09</td>
</tr>
<tr>
<td>Mental health (diagnosed depression/anxiety)</td>
<td>0.19</td>
<td>-0.16</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.19</td>
<td>0.14</td>
</tr>
</tbody>
</table>
**WHAT WOULD MOST REDUCE THE % IN MISERY?**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Percentage points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise all incomes to 20(^{th}) percentile</td>
<td>0.5</td>
</tr>
<tr>
<td>End unemployment</td>
<td>0.4</td>
</tr>
<tr>
<td>Raise all physical health to 20(^{th}) percentile</td>
<td>1.1</td>
</tr>
<tr>
<td>Abolish depression/anxiety</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Total in misery is 10 percentage points.
<table>
<thead>
<tr>
<th>AVERAGE COST OF REDUCING THE NUMBERS IN POVERTY, BY ONE PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poverty.</strong> Raising more people above the poverty line</td>
</tr>
<tr>
<td><strong>Unemployment.</strong> Reducing unemployment by active labour market policy</td>
</tr>
<tr>
<td><strong>Physical health.</strong> Raising more people from the worst 20% of present-day illness</td>
</tr>
<tr>
<td><strong>Mental health.</strong> Treating more people for depression and anxiety</td>
</tr>
</tbody>
</table>
HOW ADULT LIFE-SATISFACTION IS AFFECTED BY CHILD OUTCOMES

- Qualifications
- Behaviour at 16
- Emotional health at 16
THE NEW ELEMENT: BEHAVIOUR

- Family and schooling
  - Child outcomes
    - Intellectual
    - Behavioural
    - Emotional
  - Adult behaviour and other outcomes
    - Others’ behaviour and other outcomes
      - Own adult happiness
        - Happiness of other adults
CRIME

A. Each crime reduces others’ \( \sum LS_i \) by 1 point year.

B. Each crime reduces criminal’s LS by 0.3 point years.
HOW IS NATIONAL LIFE-SATISFACTION PREDICTED BY DIFFERENT NATIONAL VARIABLES?

<table>
<thead>
<tr>
<th>Variable</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>0.11</td>
</tr>
<tr>
<td>Generosity</td>
<td>0.07</td>
</tr>
<tr>
<td>Social supp</td>
<td>0.20</td>
</tr>
<tr>
<td>Freedom</td>
<td>0.18</td>
</tr>
<tr>
<td>Income</td>
<td>0.38</td>
</tr>
<tr>
<td>Health</td>
<td>0.24</td>
</tr>
</tbody>
</table>
Objective: Maximise sum of life-satisfaction, subject to constraints.

How evaluate a policy

(1) Estimate $\Delta LS$ using trials and this book

(2) Cost-effectiveness analysis ($\Delta LS$/Cost)
Assume total expenditure fixed.

Then fund any policy which gives sufficient wellbeing per buck.

That is, do if

\[
\frac{\text{Extra point–years of LS}}{\text{Net public cost}} \text{ high enough.}
\]
WHAT CUT OFF?

Trial and error. Where to start?

NHS has required \[ \frac{\Delta \text{QALYs}}{\Delta \text{Cost}} > \frac{1}{\£25,000} \]

We could require \[ \frac{\Delta \text{LS point-years}}{\Delta \text{Cost}} > \frac{1}{\£2,500} \]

Slide 8. British Cohort Study. Ages 34 and 42.

Slide 11. Mostly British Household Panel Survey (BHPS), using pooled cross-sections. The non-criminality result comes from the British Cohort Study using arrest data up to age 34. The mental health result comes from cross-sectional analysis of the Australian HILDA and U.S. BRFSS, which both give very similar results.

Slide 12. As above.

Slide 13. Mostly BHPS except for depression (as above). All figures in the table are got by running

\[ Misery(1,0) = \sum \alpha_i D_i (1,0) + etc. \]

where each \( D_i \) is a dummy for the characteristic in question. The figures in the table are \( \alpha_i \) times the prevalence of the characteristic.

Slide 14. The following costs are assumed

- Raising the average person below 20\(^{th}\) percentile to 20\(^{th}\) percentile costs £4,500 (CASE)
- The cost per extra person not unemployed using active labour market policies is around £4,000 per year.
- In principle the NHS only uses treatments which deliver 1 QALY for not more than £25,000. We assume that the policy described requires 0.3 extra QALYs per year and therefore costs at most £8000 per year. We assume £5500 per year.
- We assume that to have one less mentally ill person involves treating 2 people every 3 years. At £1500 per treatment, this costs £1000 a year. (We ignore cost savings.)
- The figures in the table are

\[ \frac{Costs \ of \ setting \ D_i \ at \ 0 \ (not \ 1) \ for \ one \ person}{\alpha_i} \]

Slide 15. British Cohort Study. Intellectual performance is highest qualification. Behaviour as reported by mother and emotional health as reported by mother and child.
