

# **Well-being RCTs**

**Andrew Oswald**

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- **Medical Research Council (1948).**  
**"Streptomycin treatment of pulmonary tuberculosis". *BMJ* 2 (4582): 769–782.**

**The subjects no doubt remember**



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**"Streptomycin treatment of pulmonary tuberculosis". *BMJ* 2 (4582): 769–782.**

**It was the first centralized RCT.**

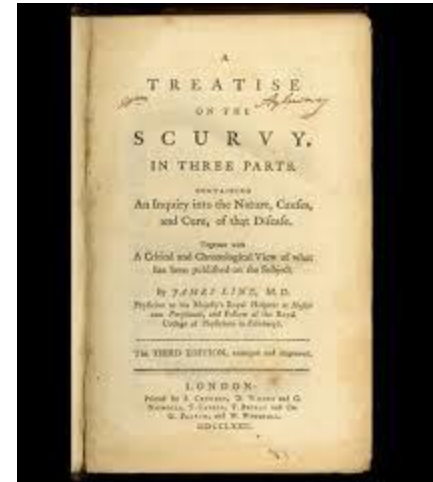
# But the roots go back to 1747



# James Lind

## The First Clinical Trial

- Scurvy affected sailors deprived of fresh foods
- James Lind of the Royal Navy - 1747
- Wrong theory: putrefaction preventable by acids
- 12 scorbutic sailors divided into 6 groups
- Same diet plus:
  - A quart of cider daily
  - 25 drops of elixir of vitriol (sulfuric acid)
  - 8 spoons of vinegar
  - Half a pint of seawater
  - Two oranges and a lemon
  - A spicy paste plus a drink of barley
- Followup with bottled juice didn't work



# James Lind in 1747





*Today*

*Today*

**Governments around the world  
are today starting to change  
what they measure.**



# Stiglitz Report 2009

[www.stiglitz-sen-fitoussi.fr](http://www.stiglitz-sen-fitoussi.fr)

**“Statistical offices [worldwide] should incorporate questions to capture people’s life evaluations, hedonic experiences ...”**



# Measuring National Wellbeing



Governments and other institutions worldwide are increasingly interested in measuring and monitoring wellbeing at the individual, social group and national levels. This POSTnote summarises the latest research on measuring national wellbeing, its components and causes, and examines some policy implications.

## Background

Wellbeing is at the core of diverse policy agendas ranging from social inclusion to environmental sustainability.

National wellbeing measures provide information for policy makers and citizens about social and economic progress, and can inform policy development. The measures reflect the effort to shift from focusing exclusively on national accounting to include people's quality of life. The main public policy questions are:

- how to measure national wellbeing in ways that provide regular assessments of how a country is doing
- how to use information on wellbeing to design and implement public policies.

## What is Wellbeing?

Definitions of wellbeing vary with several terms used (Box 1) including national wellbeing, individual wellbeing, subjective wellbeing, happiness, quality of life or life satisfaction. Some view wellbeing as wholly psychological; it is subjectively experienced by individuals. It can refer to an emotional state such as happiness or anxiety. It can also be a judgement about satisfaction with life overall or with certain domains, or the extent to which life has meaning or purpose. A contrasting view is that wellbeing refers to an objective or external assessment of people's daily living conditions such as their abilities and opportunities to live a good life. Another

## Overview

- There is growing international consensus about the need for additional national indicators of economic performance and social progress to supplement established measures such as GDP.
- Many countries are developing methods to collect and present data on wellbeing. The UK has taken a leading role by developing a national wellbeing framework.
- Happiness research has received much attention, but it is only one aspect of individual and national wellbeing.
- National wellbeing measures reflect many dimensions of people's lives and goals, and their link to sustainability and the economy.
- Wellbeing data and analysis could be used to inform central and local policy-making.

prominent view is that wellbeing results from meaningful and sustainable interactions between an individual and their social and physical environment.

## Consensus and Disagreement

Four key factors (Box 2) have influenced several countries to develop data collection tools called National Wellbeing Measures (NWBMs). Despite the many conceptions of wellbeing, consensus is that the measures should incorporate many dimensions and must include more than one subjective (for example, happiness) or objective aspect (such as income). There is disagreement on which dimensions to include and particularly if subjective wellbeing should be included. There are different views on whether and how to combine the information about the different dimensions into a single number or index. A single index number simplifies the information and enables progress to be tracked easily over time. Harmonising a core set of common indicators of national wellbeing measures and their indexing, is also needed to make international comparisons.

## Limitations of Economic Indicators

Gross domestic product (GDP) measures the monetary value of goods and services produced in a country. The size and growth of GDP reflects economic performance and is often used as the headline indicator of a society's success and progress. However, GDP is not necessarily a good measure of personal or national wellbeing. By focusing on

# The distribution of life-satisfaction levels among British people



**Source:** BHPS, 1997-2003. N = 74,481

# **Big effects from:**

**Unemployment**

**Income**

**Marriage**

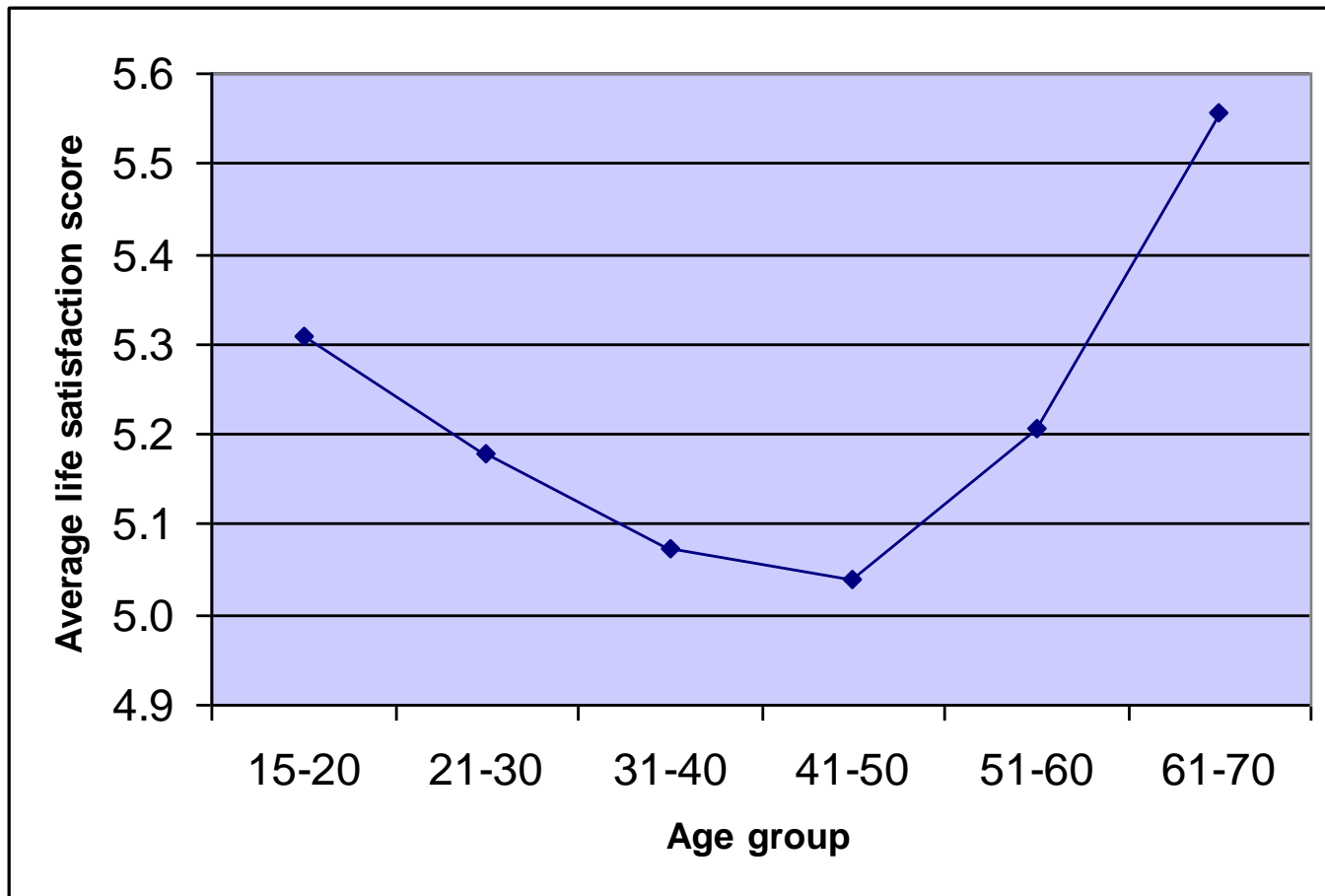
**Bereavement**

**Friendship networks**

**Health**

**[No effects from children]**

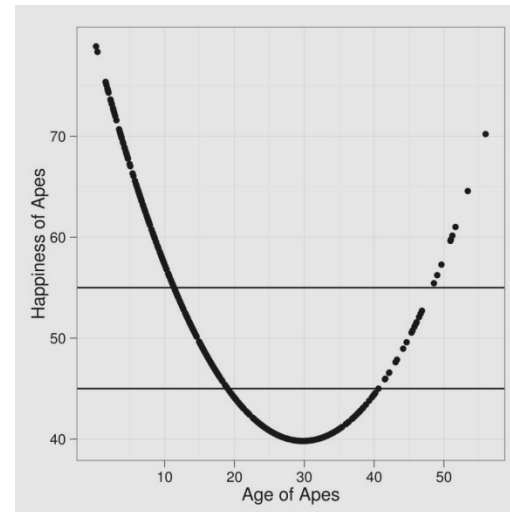
# The pattern of a typical person's happiness through life





# Great apes also have a midlife low

- We recently published the apes finding in the Proceedings of the National Academy of Sciences of the USA (joint with A Weiss et al.)



**There have been relatively few RCT  
randomized-trial experiments in  
social and economic policy.**

# One, published in Science 2012:

“Neighborhood Effects on the Long-Term Well-Being of Low-Income Adults”

- [Jens Ludwig](#)
- [Greg J. Duncan](#)
- [Lisa A. Gennetian](#)
- [Lawrence F. Katz](#)
- [Ronald C. Kessler](#)
- [Jeffrey R. Kling](#)
- [Lisa Sanbonmatsu](#)

***“Moving from a high-poverty neighborhood ... increased the happiness of low-income adults by an amount equivalent to the gains caused by a \$13,000 rise in income.”***

**J. Ludwig**

# **Another, published in NEJM 2013:**

“The Oregon Experiment: Effects of Medicaid on Clinical Outcomes”

- **Katherine Baicker et al.**

***“...Medicaid coverage generated no significant improvements in measured physical health outcomes in the first 2 years, but it did ... lower rates of depression, and reduce financial strain.”***

**K. Baicker et al.**

# A third, published in Economic Record recently:

- [Does Coordination of Welfare Services Delivery Make a Difference for Extremely Disadvantaged Jobseekers? Evidence from the 'YP4' Trial](#)

By: Borland, Jeff; Tseng, Yi-Ping; Wilkins, Roger

ECONOMIC RECORD Volume: 89 Issue:

287 Pages: 469-489 Published: DEC 2013

# **In-Work Benefits and Human Well-being: A Randomized Experiment**

**Andrew Oswald**

***[Joint work with Richard Dorsett]***





# **OUR EXPERIMENT**

**Our project is a large social-science experiment.**



## **In this British trial:**

**16,000 disadvantaged people --  
randomly assigned to control and  
treatment.**

**The experiment ran for 5 years.**

**For 2 years**

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**Those in the treatment group were given subsidies (and help) to encourage full-time work.**

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**Here we examine people  
particularly after more years have  
passed.**

- **So did they become richer?**
- **And did they become happier?**





- **How often would you say you have been worried about money during the last few weeks?...**



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- **How often would you say, do you run out of money before the end of the week or the month?**



- **How often would you say you have been worried about money during the last few weeks?...**
- **How often would you say, do you run out of money before the end of the week or the month?**
- **How difficult would you say your financial situation is at the moment?**



- **Thinking back over the past 12 months, how often would you say you have had trouble with debts that you found hard to repay?**



- **Thinking back over the past 12 months, how often would you say you have had trouble with debts that you found hard to repay?**
- **How often, would you say, do you have money left over at the end of the week, or if you budget by the month, at the end of the month?**



- **Earnings**
- **Life satisfaction**
- **Worry**
- **Out of cash**
- **Financial situation**
- **Debt**
- **Surplus at end of month**

**What exactly was the randomized treatment?**

## Details of the treatment

- **First, *job coaching*. Second, strong *financial incentives to work*. Third, they were given *training opportunities*. All these were added, in effect, to the standard benefits available to anyone in Britain.**



- **...individuals working 30 hours or more per week for 13 out of 17 weeks received a tax-free payment of £400**

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- **This was approximately a 12.5% tax-exempt boost to their weekly income.**

**We then follow people through  
their evolving lives.**

# Actual results after 5 years

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- **The treatment group became richer**



## Actual results after 5 years

- The treatment group became richer



- The treatment group became less happy, worried more, and ran out of money more often.



**On all 6 of the well-being and financial stress variables, the scores became worse\* in the treatment group (who had been given all the money and help).**

**\* at the 10% level or 5% level**

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- **The treatment group's weekly earnings increase about £10 a week *[£70 up to £80 a week]*.**
- **Life satisfaction falls about 0.1 points. *[That is approximately half the well-being effect of having advanced high school.]***

**Nobody expected this.**

**So why, conceptually, might it have happened?**

# Possibility 1

- **Plain short-sightedness and habit. The treatment group failed to foresee that they would have to curb their spending.**

## Possibility 2

- **Losing the extra money hurt disproportionately (as in Prospect Theory).**



## Possibility 3

- **The temporary subsidy money led to a permanent increase in their aspirations or 'reference' level.**

**The conclusion:**

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***Overall, it seems here that trying to help people somehow ended up hurting them.***

***Much remains to be understood about why.***

However:

**A background issue for us  
all to ponder.**

**Are we moving to a point where nearly all social science in the future will have to be randomized controlled trials (RCTs)?**



- **Medical Research Council (1948).**  
**"Streptomycin treatment of pulmonary tuberculosis". *BMJ* 2 (4582): 769–782.**

**Yet an even more important paper was about to be published. One that changed the world.**

# Richard Doll





- **Doll R, Hill AB (1950). "Smoking and carcinoma of the lung". *BMJ* 2 (4682): 739–748.**

# MALE PATIENTS WITH LUNG CARCINOMA MATCHED TO CONTROLS

## Relative risk of lung carcinoma

***Non-smokers 1***

***1- 5 cigarettes a day 8***

***6-14 a day 12***

***14-24 a day 14***

***≥25 a day 27***

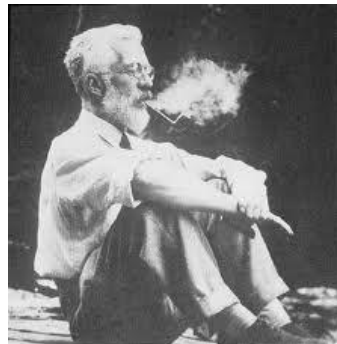
1950, BMJ

**A huge row then broke out.**



# Fisher developed:

- **The theory of the F test**
- **The idea of maximum likelihood estimation**
- **Analysis of variance**
- **The foundations of non-parametric statistics**



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unknown researcher)**

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- **Fisher showed a time series correlation of apple imports into Britain and the rise in divorce in Britain.**
- **He published in Nature a study of twins purporting to show that smoking was harmless.**



**Fisher had 5 reasons why Doll was wrong**

## Fisher had 5 reasons why Doll was wrong

- (i) **Omitted variables** (genes cause both smoking and cancer)
- (ii) **Cancer may cause the smoking**
- (iii) **The secular trend data** did not support the smoking-causes-cancer theory
- (iv) **Anomalies**: the non-inhalers of smoke got cancer more, bizarrely.
- (v) **“Richard Doll has no theory”**.

**Yet Fisher, the greatest statistician  
of his age, turned out to be wrong.**

**If the world had listened to his complaints about endogeneity etc, millions more people would have died.**



If the world had listened to his complaints about endogeneity etc, millions more people would have died. So RCTs are only one way to learn.



# **In-Work Benefits and Human Well-being: A Randomized Experiment**

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**[Joint work with Richard Dorsett, NIESR]**

*Papers downloadable at [www.andrewoswald.com](http://www.andrewoswald.com)*

# Well-being RCTs

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