Happiness, Health and Economics*

Andrew Oswald

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We are drawing closer to psychology and medicine.

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Researchers try to find what influences the psychological wellbeing of

(i) individuals
(ii) nations.

Could we perhaps learn how …

..to make whole countries happier?

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Preferably without relying on implausibly good fortune:

England 4 Croatia 0

2010 World Cup

Let me summarize some findings, and then go back to the beginning.

A taste of research (1)

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Happiness is high among:

Women
People with lots of friends
The young and old
Married and cohabiting people
The highly educated
The healthy
Those with high income

A taste of research (2)

Happiness is particularly low among:

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Newly divorced and separated people

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ps… and children have no effect on happiness

A taste of research (3)

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Plus there is some evidence that stress levels at work, and rates of depression, have been increasing.

Prescriptions for anti-depressant drugs trebled between 1991 and 2003.

A taste of research (4)

Noise levels and environmental quality matter to happiness.

Let's clean up
so all our rivers look
this good

Green

A taste of research (5)

Countries are happier if they have low unemployment and inflation, and generous welfare benefits.
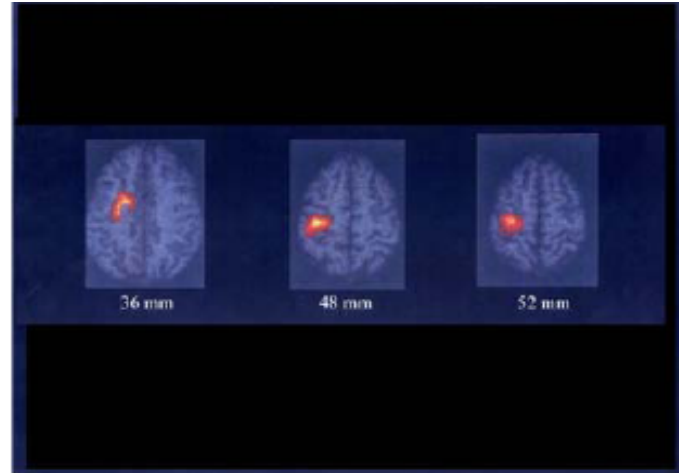
'Fear' depresses happiness.

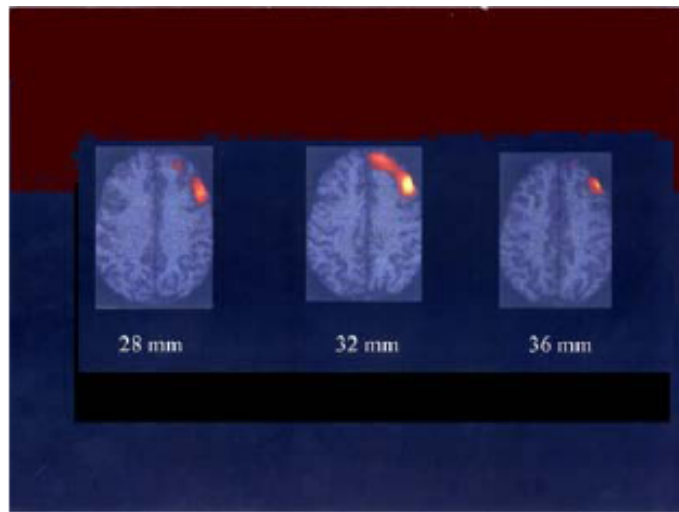*R. Di Tella, R. Macculloch, A.J. Oswald American Economic Review, 2001.*

But is it really possible to study happiness and mental wellbeing in a systematic way?

Brain Responses in Two Pictures
(MRI Scans)

Source: Richard Davidson, University of Wisconsin

Reported happiness is correlated with…

- **A person's happiness as assessed by friends, family and spouse**
- **How many times a person smiles**
- **Person's recall of good and bad events**
- **Heart rate and blood pressure response to stress**
- **The later risk of getting coronary heart disease**
- **Cortisol levels**

Other observables

We know too that reported well-being levels are predictive of

The probability of:

Other observables

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The probability of:
a marriage splitting up

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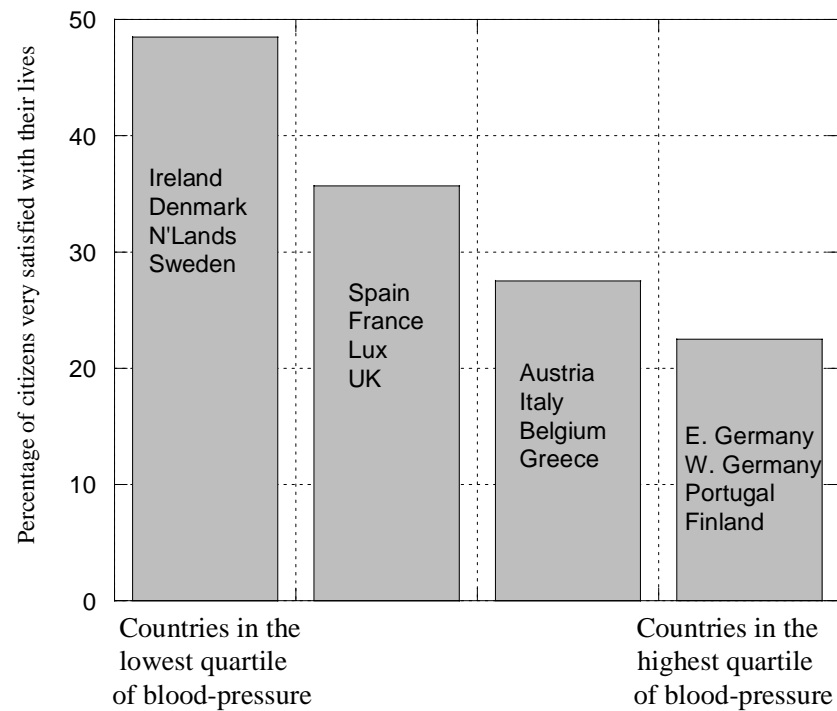
The probability of:

a marriage splitting up

a worker quitting a job

Across nations, hypertension and happiness are correlated

(Blanchflower and Oswald, forthcoming, Journal of Health Economics)

Figure 2.
The Inverse Correlation Between Hypertension and Life
Satisfaction: 16 European Nations Aggregated into Quartiles

How is 'happiness' or well-being measured?

From the U.S. General Social Survey
(sample size 40,000 Americans approx.)

- *"Taken all together, how would you say things are these days - would you say that you are very happy, pretty happy, or not too happy?"*

Typical GHQ mental-strain questions

Have you recently:

Lost much sleep over worry?
Felt constantly under strain?
Felt you could not overcome your difficulties?
Been feeling unhappy and depressed?
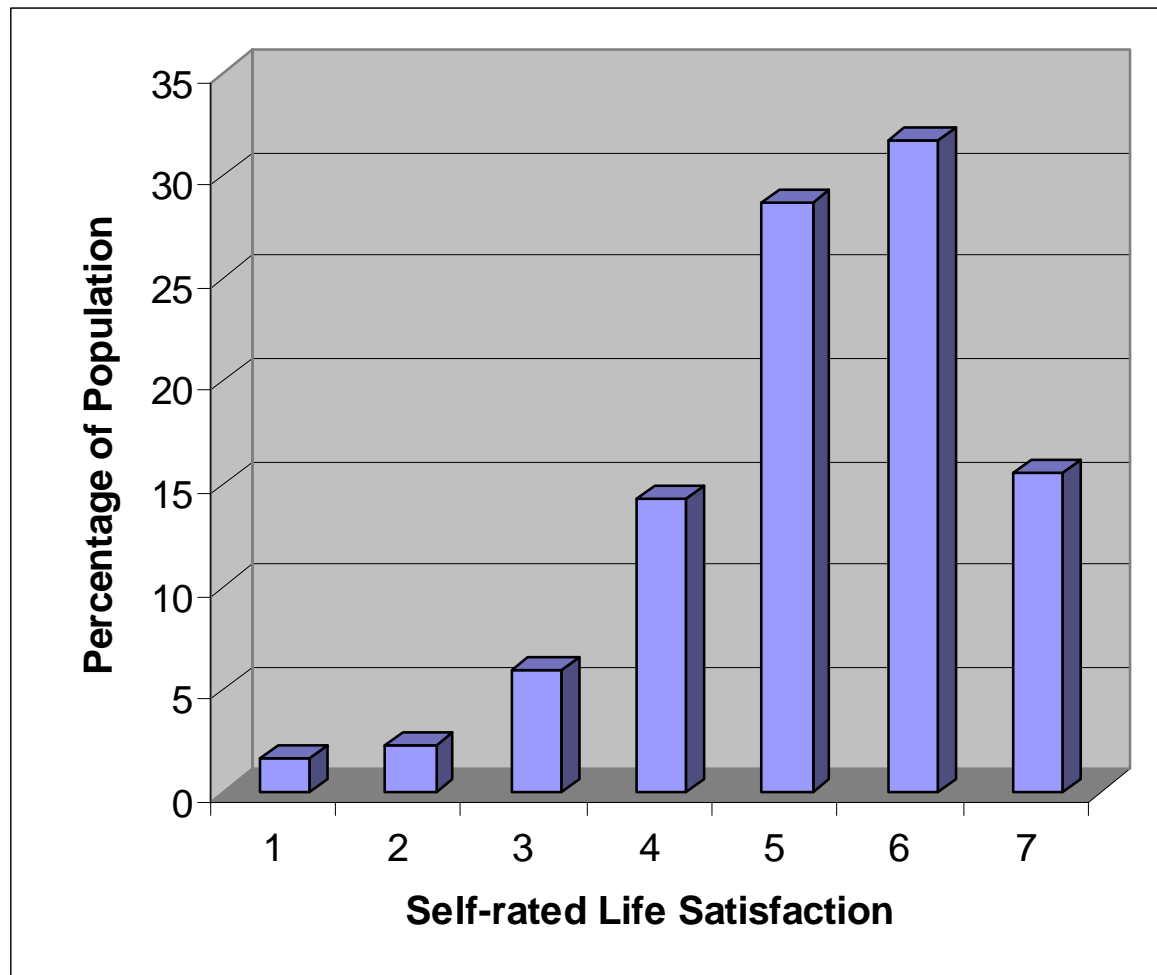Been losing confidence in yourself?
Been thinking of yourself as a worthless person?

Some cheery news:

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In Western nations, most people seem happy with their lives

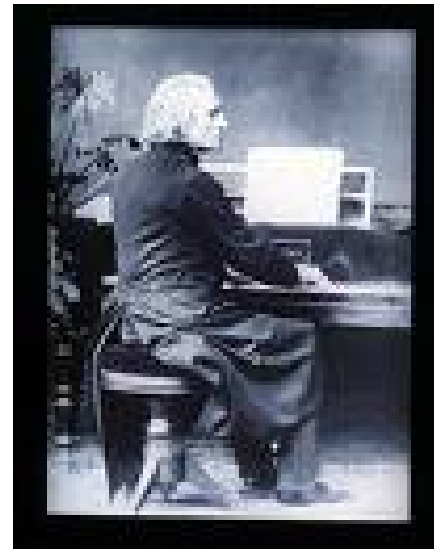# The distribution of life-satisfaction levels among British people

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

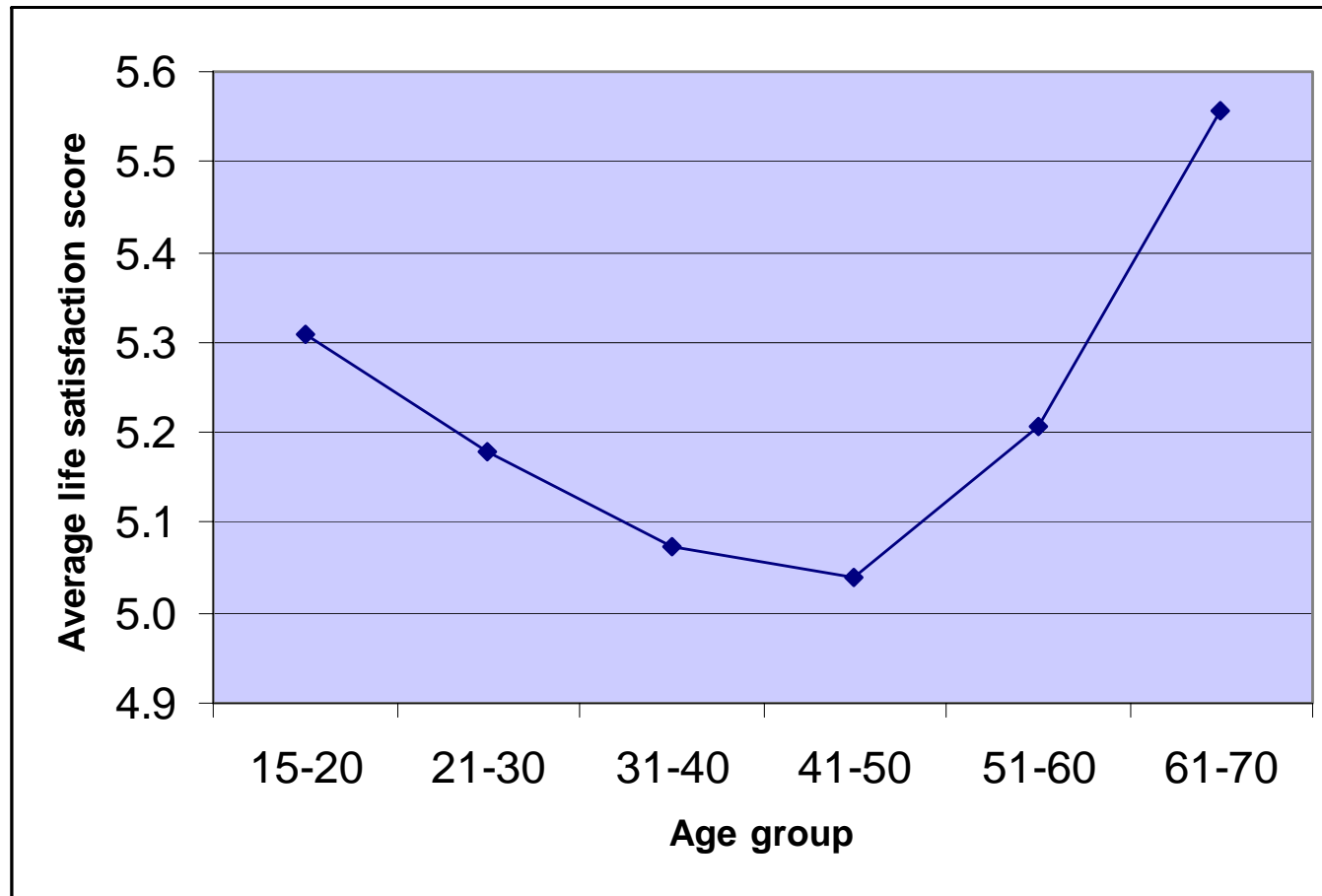**Statistically, wellbeing in panels is strongly correlated with life events**

..good and bad.

There is also an intriguing life-cycle pattern

Happiness is U-shaped over the life cycle

The pattern of a typical person's happiness through life
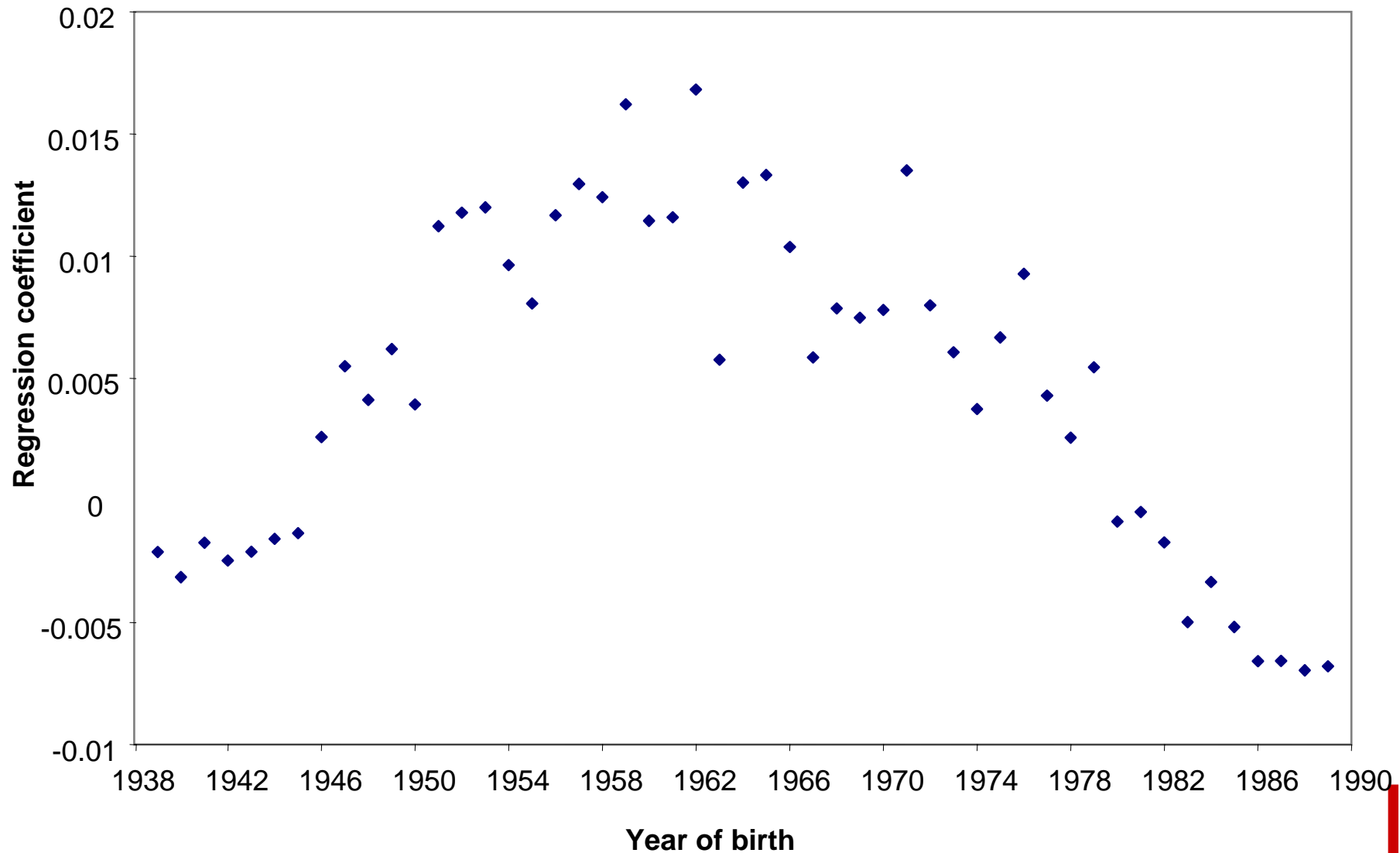
This holds in various settings

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For example, we see the same age pattern in the probability of depression among a recent sample of 800,000 UK citizens:
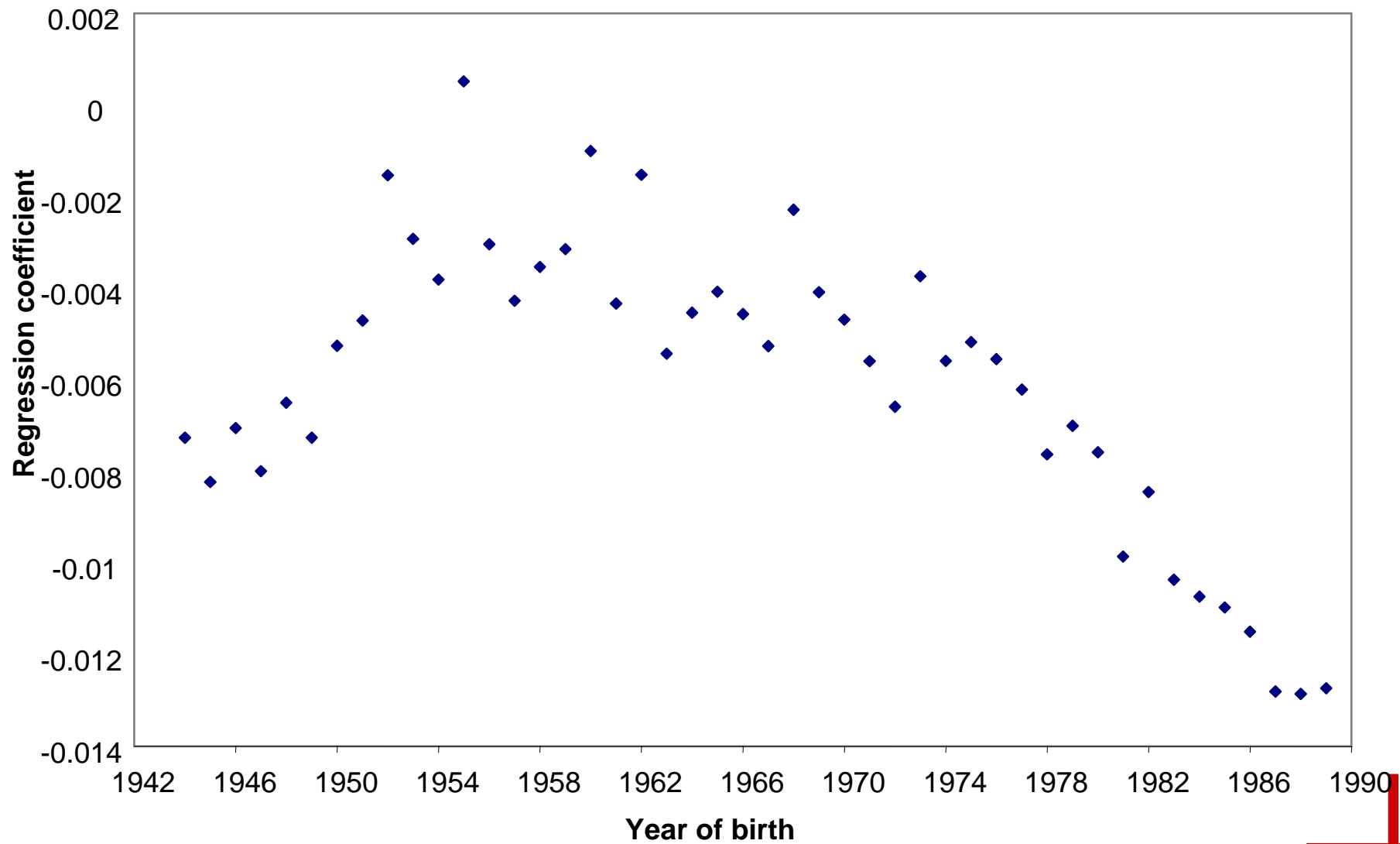
[Blanchflower and Oswald, 2006]

The probability of depression by age

Males, LFS data set 2004-2006

Depression by age among females: LFS data 2004-2006Q2

Now what about money?

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The data show that richer people are happier and healthier.

For example

Di Tella et al <u>REStats</u> 2003 and Luttmer <u>QJE</u> 2005 show income is monotonic in happiness equations for 11 industrial countries.

Relative things matter

In terms of economic theory:

$$u = u(y/y^*)$$

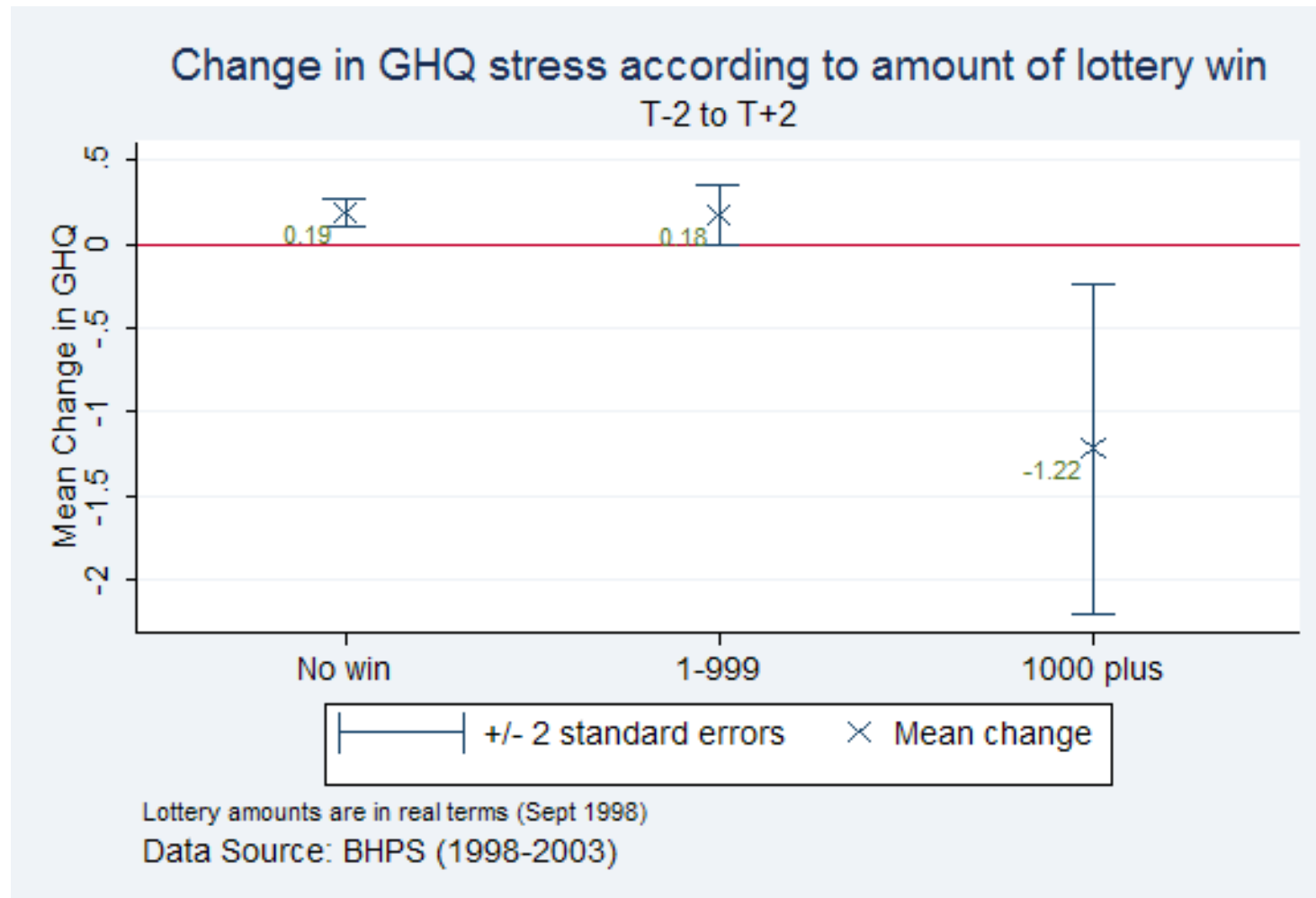*where y* is what other people earn.*

On £ and happiness

Is there really good <u>causal</u> evidence?

One recent attempt (Gardner-Oswald, <u>Journal of Health Economics</u> 2007):

Studying windfalls is one approach:-

.

Lottery wins raise mental well-being

Change in GHQ stress according to amount of lottery win
T-2 to T+2

Mean Change in GHQ

No win   0.19
1-999   0.18
1000 plus   -1.22

+/- 2 standard errors   ✕ Mean change

Lottery amounts are in real terms (Sept 1998)
Data Source: BHPS (1998-2003)

One puzzle remains

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There is a delay.

The longitudinal lottery work finds the effect of a win <u>takes one to two years</u> to show up in mental well-being scores.

In the literature, one broad feature is striking:

The state of the mind may well determine the health of the body

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Those with high status live longer
(being promoted may be more important than a healthy diet and exercise)

Married people are healthier *(marriage helps offset smoking)*

To the gentlemen:

To the gentlemen:

If you must smoke,

it is essential to get married.

Another intriguing feature of the data:

Humans are adaptive.

They have great resilience:
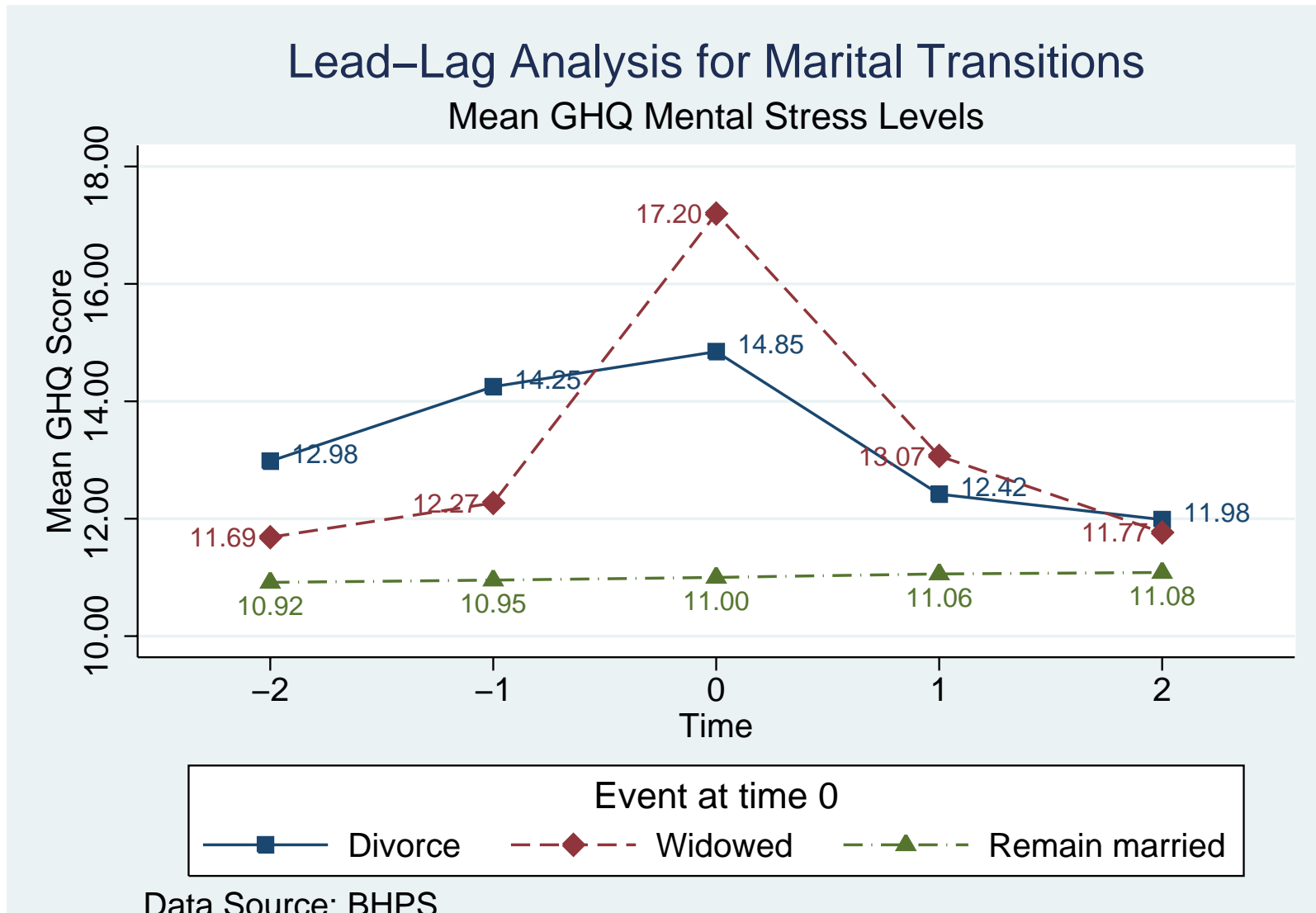eg. to
(i) divorce
(ii) disability.

Here we can use recent longitudinal data, with sources like the BHPS.

An example

Comparing two years <u>before</u> divorce to two years <u>after</u>, there is an improvement in psychological health (on a GHQ score).

"Do Divorcing Couples Become Happier By Breaking Up?", J. Gardner and A.J.Oswald, <u>Journal of the Royal Statistical Society</u>, 2006, 169, 319-336.

Divorce eventually makes people happier

Lead–Lag Analysis for Marital Transitions

Mean GHQ Mental Stress Levels

Event at time 0

Divorce — Widowed — Remain married

Data Source: BHPS

Human beings also bounce back remarkably from, say, disability.

[Research with N. Powdthavee of IOE London]

Figure 3: Life Satisfaction of Those Who Entered Disability at Time T and Remained Disabled in $T+1$ and $T+2$, BHPS 1996-2002
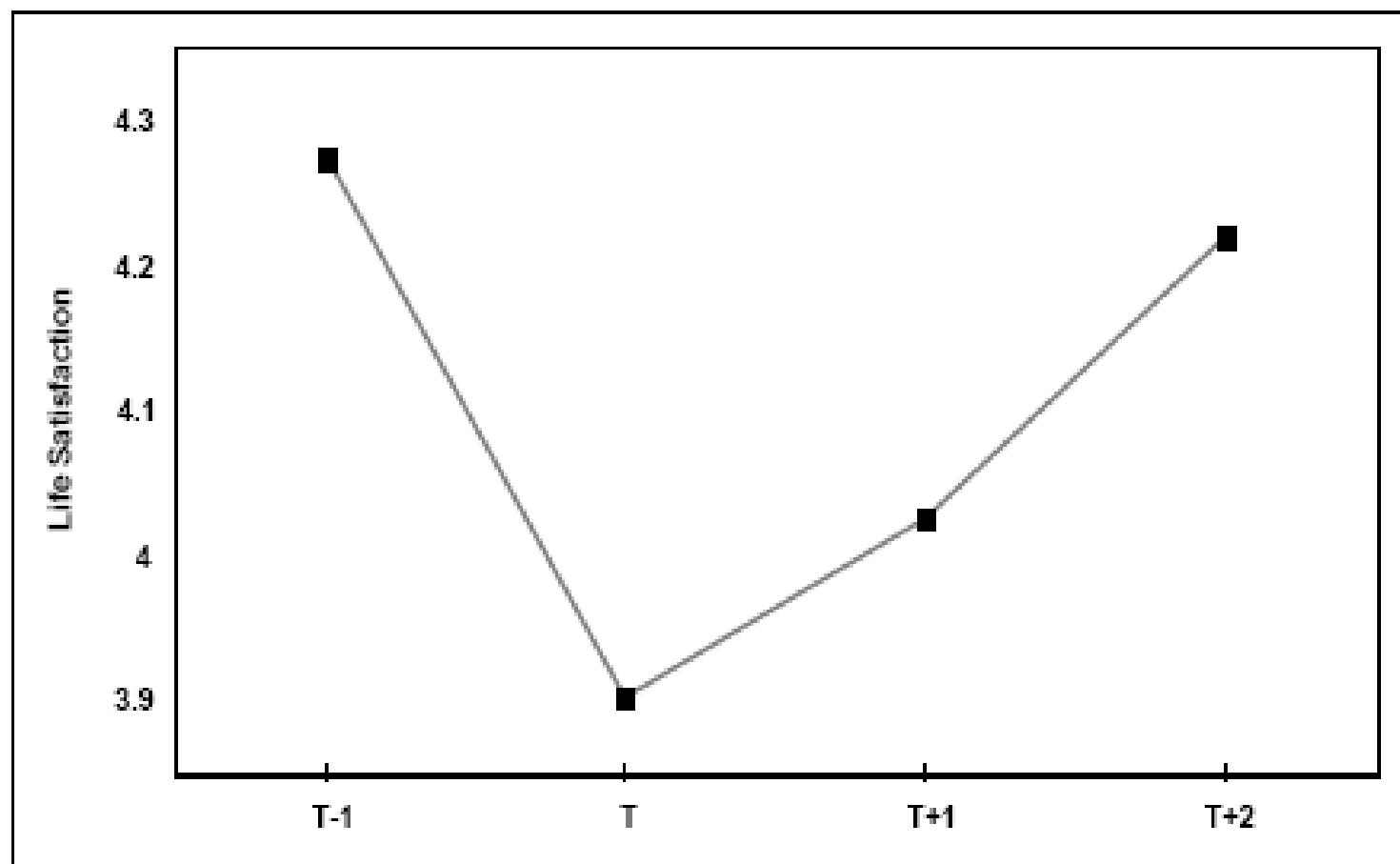
Note: There were 72 individuals who became disabled at time T and remained disabled in $T+1$ and $T+2$. The mean life satisfaction of these individuals at $T-2$ is 4.53. The t-test statistics [p-value] of whether the mean life satisfaction of the individual is equal are 1.374 [0.172] (between $T-1$ and T), -0.466 [0.642] (between T and $T+1$) and -0.738 [0.461] (between $T+1$ and $T+2$).

However, there is a downside to that adaptability (eg. marriage)

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Marriage (Females)
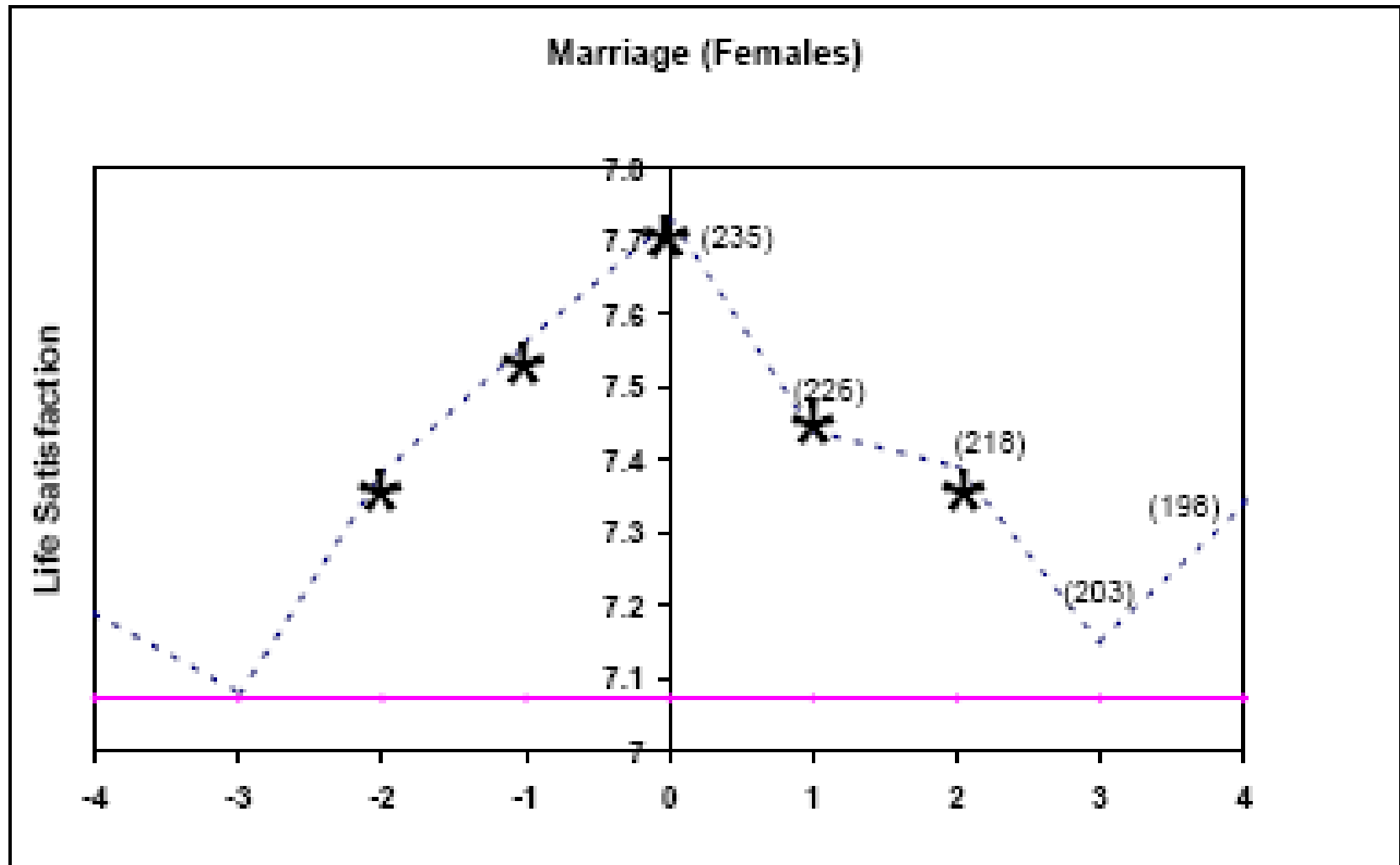
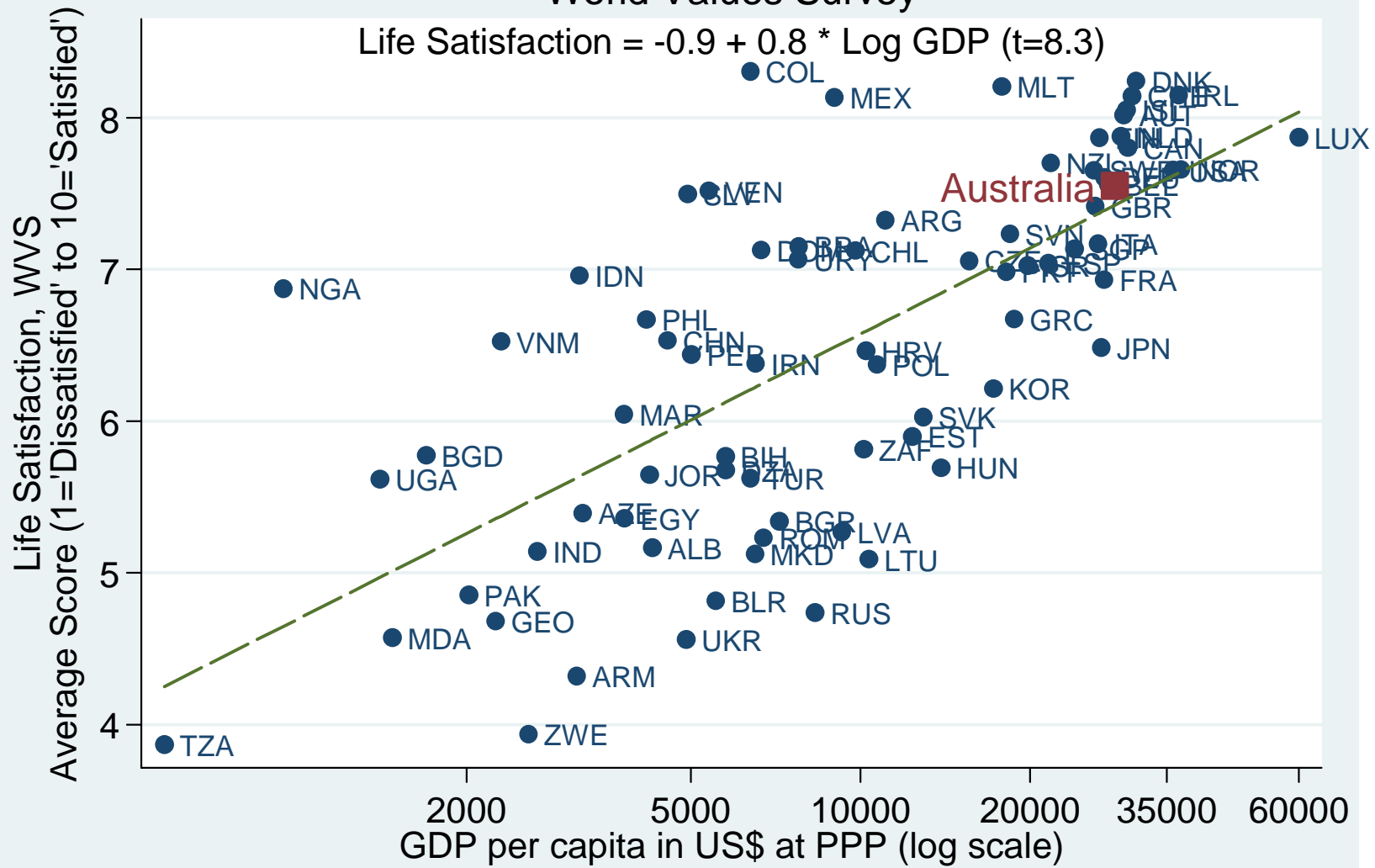# What about happiness in whole countries?

When a nation is poor, extra riches will raise happiness.

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Say we look at a scatter plot across many countries:
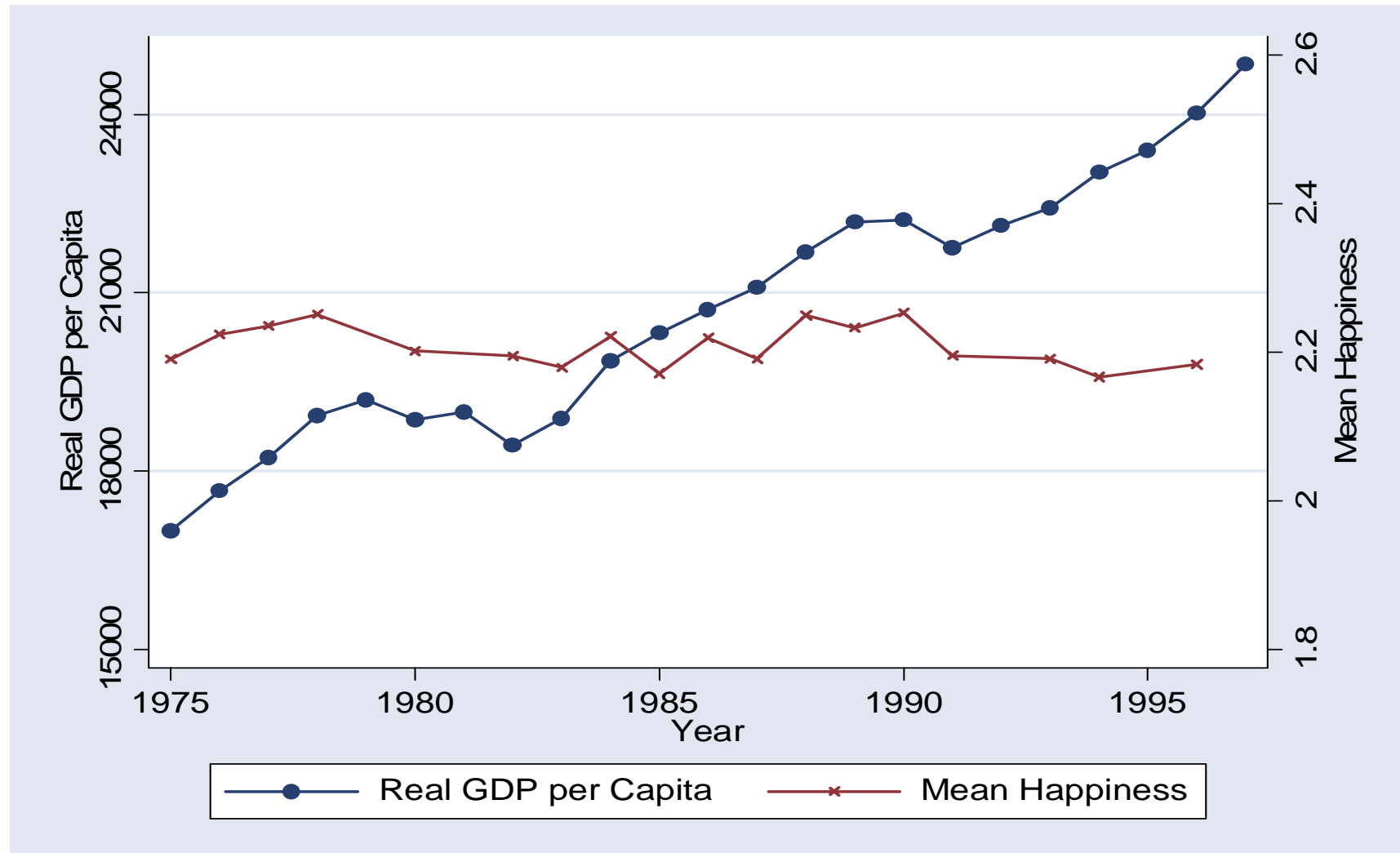
Life Satisfaction and GDP Per Capita

World Values Survey

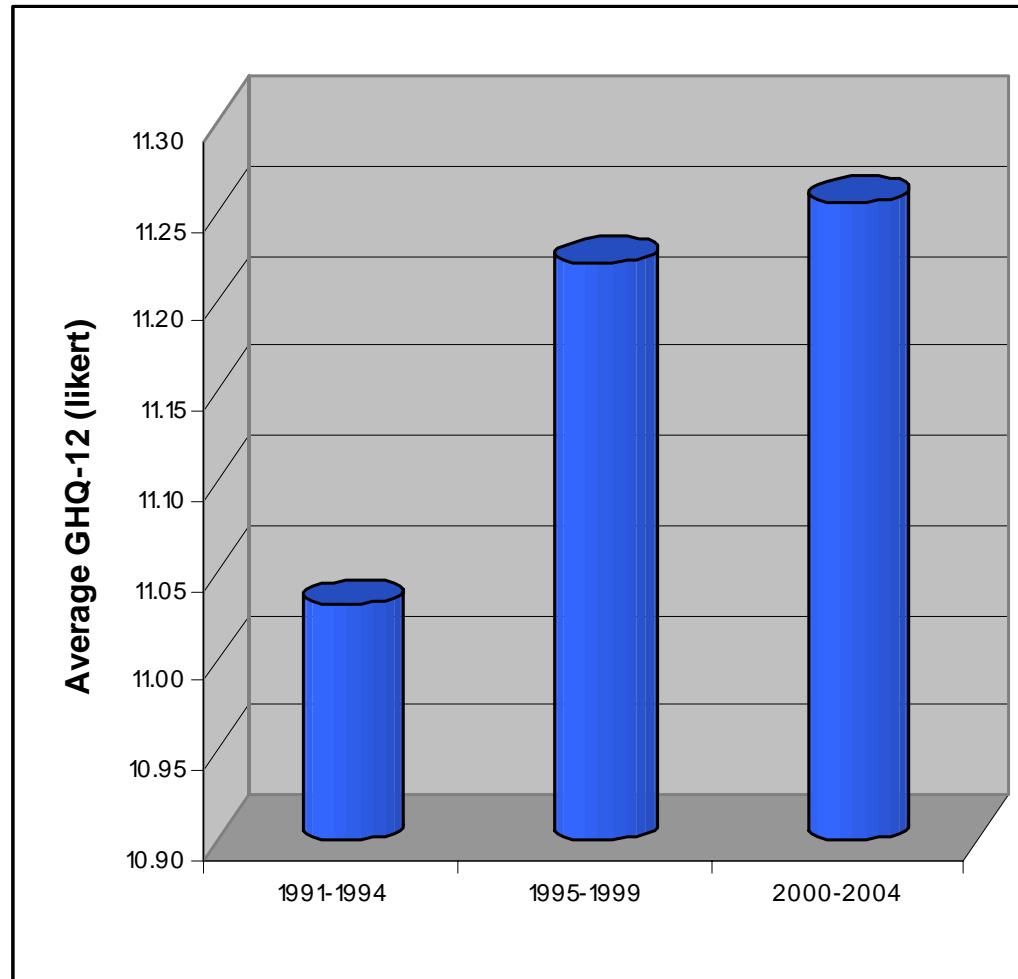Life Satisfaction = -0.9 + 0.8 * Log GDP (t=8.3)

Yet

- **Growth in income is now not correlated with growth in happiness**
- **This is the "Easterlin paradox"**

Average Happiness and Real GDP per Capita for Repeated Cross-sections of Americans.

Average GHQ Psychological Distress Levels Over Time in Britain: BHPS, 1991-2004

Also

One day, these kinds of 'happiness equations' are likely to be used a lot in the courts.

Implied per-annum hedonic damages for deaths (IV fixed-effects)

Partner	£312,000
Child	£126,000
Mother	£22,000
Father	£21,000

Thus for judges:

By using direct happiness proxies, and mental health measures, potentially we have a different way to calculate "emotional damages".

Let me draw to a close.

IN CONCLUSION

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Economists have probably been wrong to believe that economic growth makes us happier.

Happiness equations also

allow us to put £ values on important human intangibles -- noise, a child's life, the climate, pollution, art museums..

More broadly on well-being

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GNH not GDP.

Thank you.

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Papers downloadable from www.andrewoswald.com