

Psychology and Economics

14.13 Lecture 22: Happiness and mental health

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End-of-semester festivities

- Cumulative final exam online:
 - (1) One longer question similar to (easier) pset questions
 - (2) True/false/uncertain questions
 - (3) Multiple choice questions
- Same procedures as for mid-term exam but longer and (a bit) harder
- Final review in recitation on Thursday and Friday (May 7 and 8)

How can you prepare for the final exam?

- Make sure you understand the lecture and recitation slides.
- Go back to starred readings if needed.
- Make sure you understand the psets and solutions.
- Previous psets and exams should be helpful too.
- Ask (and answer) questions on Piazza!
- Alex and Aaron will provide a review in recitation.
- Make sure to sleep enough!

Plan for today and Monday

- Today: Happiness and subjective wellbeing
 - Rationality and revealed preferences
 - Utility
 - Happiness
 - Mental health
 - Llama/goat visit!
- Monday (May 11): Policy with behavioral agents

Rationality in classical economics

- “Beliefs, preferences, and actions are rational if they are mutually consistent.”
- Using this definition of rationality. . .
 - It’s possible to be a rational cocaine addict.
 - It’s possible to rationally commit suicide.
 - It’s possible to rationally marry someone you met six hours ago.
 - It’s possible to be a rational violent offender.
- In mainstream economics, rationality is a maintained assumption.
- It is the researcher’s job to identify the preferences that are consistent with observed human behavior.

Basic idea behind the theory of revealed preferences

- Actors make choices.
- Economists observe their choices.
- Economists impute the preferences that would generate these choices *if* the actor were perfectly rational.
- Economists then give these imputed preferences normative meaning.

A mainstream economists might reason:

- Jack prefers taking cocaine to quitting.
- Jack's speeches about wanting to quit are just cheap talk.
- Jack might be better off if he were clean.
- But getting clean is too costly (withdrawal costs).
- Jack probably didn't expect to be an unhappy addict when he first tried cocaine.
- But, this bad outcome was sufficiently unlikely that his early experiments with cocaine made sense.
- Finally, cocaine should be legalized unless it generates externalities.

Do people act in their best interest?

- Economists assume there exists a rational relationship between a person's choices (behavior) and the hedonic consequences of those choices (true well-being).
- Economists believe that most of the time people act (approximately) in their best interest.
- We should be skeptical about this assumption (Nisbett and Wilson, 1977).
- How can we check whether this assumption is appropriate?
 - It would be great if we could measure behavior and the hedonic consequences of behavior (well-being).

Decision utility

- Economists use the word “utility” (or “utility function”) to describe the preferences that rationalize observed choices.
- Kahneman calls these revealed preferences “decision utility.”
 - Preferences that rationalize decisions
 - Preferences that coincide with “wanting” and “choosing”
- For an addict, the decision utility of drug consumption exceeds the decision utility of quitting.

Experienced utility

- Kahneman also measures the hedonic consequences of choices.
- He calls these hedonic experiences, “experienced utility.”
 - Preferences that coincide with “doing”
- This is how Jeremy Bentham (1748-1832) conceived of utility (pleasure and pain)
- How can we measure hedonic experiences (e.g. wellbeing)?
- How do people aggregate these experiences over time?

Techniques for measuring experienced utility

- Observer ratings, facial measures
- Real-time self-reports of mood, pain, pleasure, or happiness
- Autonomic measures (autonomic nervous system, including electrodermal, respiratory, and cardiovascular)
- Vocal measures (pitch, loudness, tone, quality, timing)
- Left brain asymmetry (electroencephalogram – EEG)
- Responses to emotion-sensitive tasks. Example: “Would you like to talk with a good friend?” – “No? – Then you are probably in a bad mood.”

Why might decision utility and experienced utility differ?

- A few examples
 - Inaccurate memories of past hedonic experiences
 - Poor forecasts of preference dynamics
 - Failures to anticipate adaptation (marriage, paraplegic injuries, winning the lottery, denied promotion)
 - Emotional (visceral, impulsive) decision-making
- Much of this course is about disconnects between decision utility and experienced utility.

Remembered utility

- Our memory of a hedonic experience remembered utility exhibits **duration neglect**.
- You remember the quality, not the length of the experience.
- Remembered utility follows **peak-end rule**.
Retrospective evaluations are predicted by an average of:
 - (i) peak affective response recorded during an episode, and
 - (ii) end value recorded just before the termination of an episode.

Evidence of duration neglect and peak-end evaluations

- Immersion of one hand in cold water: cold-pressor task (Schreiber & Kahneman)
- Colonoscopy (Katz, Redelmeier, & Kahneman)
- Plotless films of pleasant/unpleasant subjects, such as low-level flying over an African landscape or of amputation
- Aversive sounds of varying loudness and duration
- Shocked rats

Cold pressor (Schreiber & Kahneman)

- Short trial: hand in 14 degree water (60 sec)
- Long trial: hand in 14 degree water (60 sec), then temp rises to 15 degrees (30 sec)
- 65% of subjects chose to repeat the long trial (decision utility \neq experienced utility)
- Result replicated with aversive noise

Colonoscopy (Katz, Redelmeier, & Kahneman)

- Control group: regular colonoscopy
- Treatment group: procedure lengthened by one minute with colonoscope inside the body but stationary
- The nature of experiment was not explained to the subjects!
- Extra minutes was uncomfortable, but not very painful.
- Treatment group had significantly better memories of the overall experience

Measuring happiness and life satisfaction with survey questions

- One approach: simply ask people directly how happy they are
- Ladder question: “How satisfied are you with your life as a whole these days?”
- Affect question: “Did you experience [insert emotion here] yesterday?”
- Some researchers argue such happiness measures should form basis for judging well-being (and become policy objective).
- Lots of interesting graphs [HERE](#).

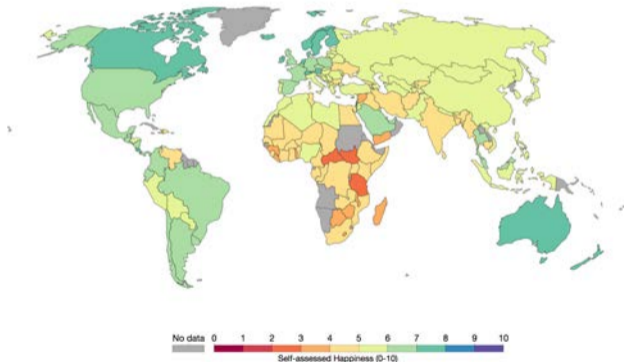
Measuring happiness is problematic.

- In general, correlation and causality are hard to pin down.
- Strack, Martin, and Schwarz (1988): correlation between “general happiness” and “happiness with dating”
 - If general happiness question is asked first: 0.16
 - If general happiness question is asked second: 0.55

Life satisfaction around the globe

Self-reported Life Satisfaction

Life satisfaction is self-reported as the answer to the following question: "Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"



Source: World Happiness Report (2017)

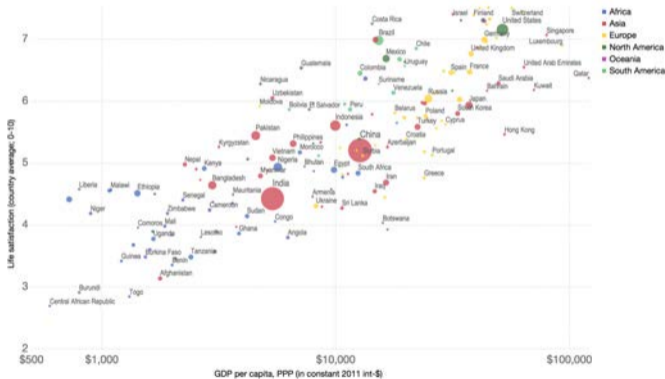
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Life satisfaction and income: comparisons across countries

GDP per capita vs Self-reported Life Satisfaction, 2014

Vertical axis shows national average self-reported life satisfaction in the Cantril Ladder (a scale ranging from 0-10 where 10 is the highest possible life satisfaction). Horizontal axis shows GDP per capita based on purchasing power parity (i.e. GDP per head after adjusting for inflation and cross-country price differences).



Source: World Bank - WDI: GDP per capita, PPP (constant 2011 international \$), World Happiness Report (2017).
OurWorldInData.org/happiness-and-life-satisfaction/ - CC BY-SA

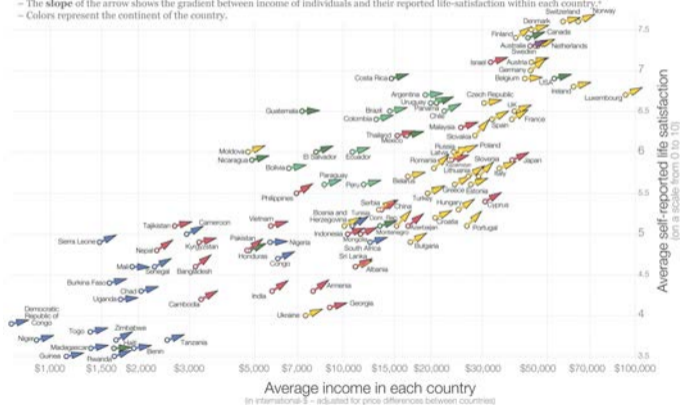
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Life satisfaction and income: comparisons within countries

People in richer countries tend to be happier and within all countries richer people tend to be happier

Our World
In Data

- The **position** of the arrow shows the average life satisfaction reported by the population of a country (vertical axis) and the average income of that country (horizontal axis).
- The **slope** of the arrow shows the gradient between income of individuals and their reported life-satisfaction within each country.
- Colors represent the continent of the country.

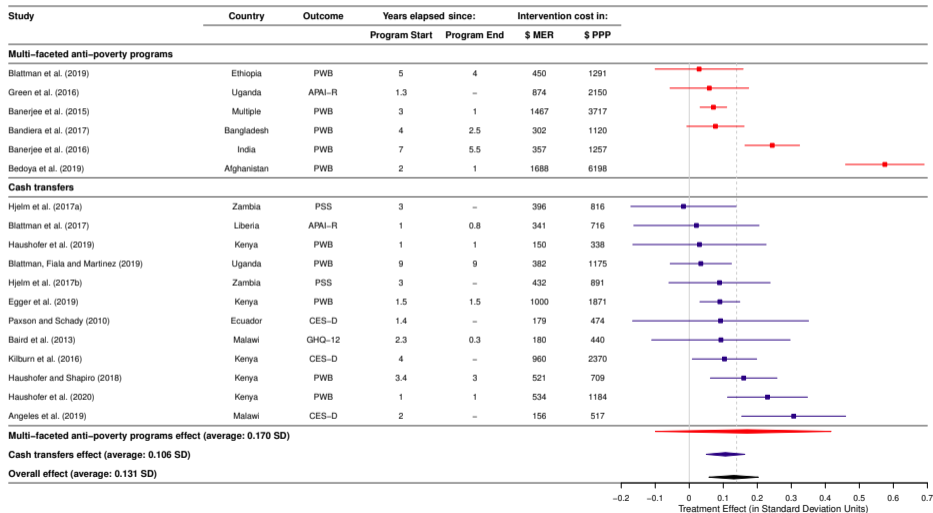


* The gradients correspond, country by country, to the regression coefficients between income quintiles and the related average life satisfaction reported by people within each income quintile.
 Data sources: World Bank for data on incomes by quintile (based on income shares by quintile and GDP per capita as the mean income); Gallup World Poll for life satisfaction by income quintile.
 The visualization is available at OurWorldInData.org. There you find the research and more visualizations on life satisfaction. Licensed under CC-BY-SA by the author Max Roser.

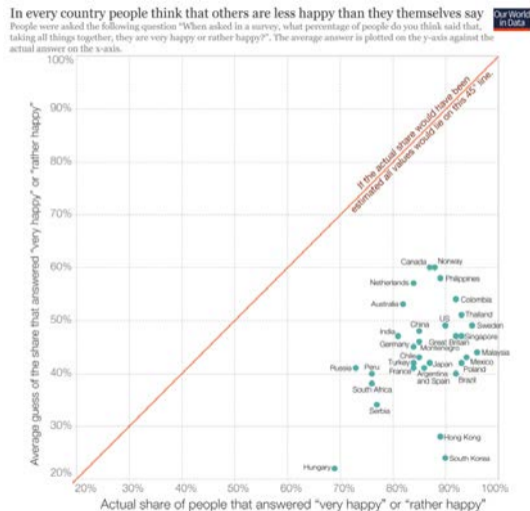
Income and mental health

- The poor are more likely to suffer from depression and/or anxiety within a given location.
- But prevalence of depression is *higher* in rich countries
 - Possibly because of other factors, e.g. inequality
 - Perhaps relative income matters more than absolute income?
- Anti-poverty programs improve mental health
- Psychotherapies are effective and increase labor supply

Anti-poverty programs improve mental health (Ridley et al. 2020)



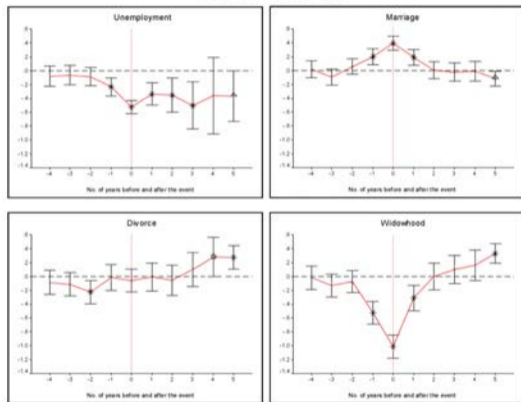
We think that that others are less happy than they say they are.



Data source: Perils of Perception by SPSS-Mat
 This visualization is available at [OurWorldinData.org](https://ourworldindata.org). Please cite the research and reuse visualizations on happiness and life satisfaction. Licensed under CC BY-SA by the author Max Roser.

Life satisfaction and life events

on women



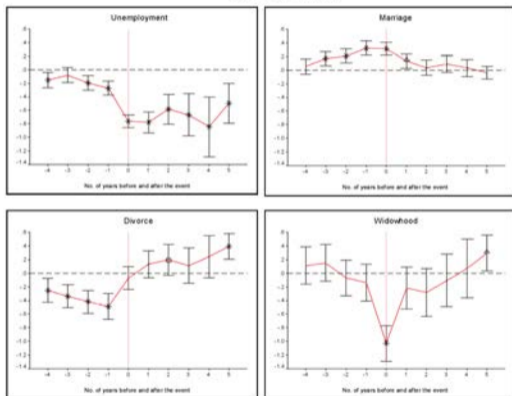
- Clark et al. (2008): data from German Socio-Economic Panel to identify groups of people experiencing significant life and labour market events
- People adapt to many changes but not to unemployment.
- Evidence of evolution of a “latent situation”: build-up toward positive or negative events.

Figure: Figures from [OurWorldinData.org](https://ourworldindata.org)

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Life satisfaction and life events

on men



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Figure: Figures from [OurWorldinData.org](https://ourworldindata.org)

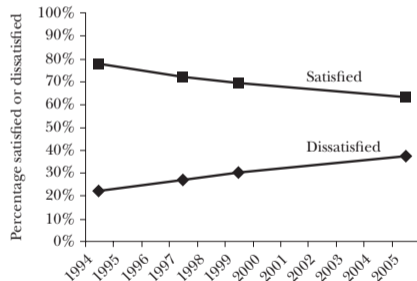
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Life satisfaction and income: comparisons over time

Figure 4

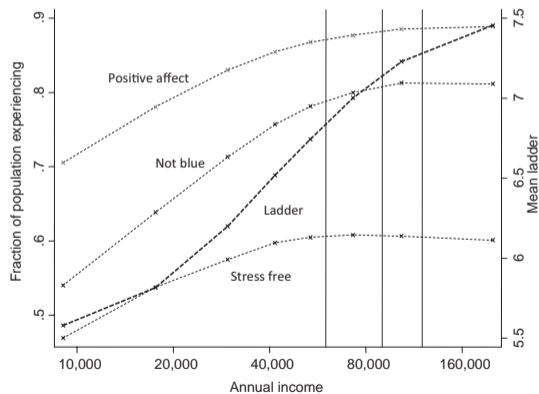
Life Satisfaction in China as Average Real Income Rises by 250 Percent

Overall, how satisfied or dissatisfied are you with the way things are going in your life today?
Would you say you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?



Ceiling effects for reported life satisfaction vs. affect

- >450,000 Americans surveyed by Gallup in 2009
- “Positive affect”: average of the fractions of the population reporting happiness, smiling, and enjoyment.
- “Not blue”: 1 minus average of the fractions of the population reporting worry and sadness.
- “Stress free”: fraction of the population who did not report stress for the previous day.
- “Ladder” (Cantril’s Self-Anchoring Scale): respondent rates his/her current life on a ladder scale in which 0 is “the worst possible life for you” and 10 is “the best possible life for you.”



Courtesy of Daniel Kahneman and Angus Deaton. "High Income Improves Evaluation of Life but Not Emotional Well-Being." *PNAS*. Sept. 21, 2010. vol. 107, no. 38.

What predicts psychological well-being?

Table 1. Life evaluation, emotional well-being, income, and the income-normalized effects of other correlates

	Positive affect	Blue affect	Stress	Ladder
Regression coefficient				
High income	0.03	-0.06	-0.03	0.64
Ratio of coefficient to log income coefficient				
High income	1.00	1.00	1.00	1.00
Insured	0.40	0.92	1.19	0.59
Old	0.79	0.93	6.28	0.50
Graduate	0.03	0.01	-1.93	0.48
Religious	1.16	-0.02	1.21	0.35
Female	0.16	-0.60	-1.89	0.29
Married	0.66	0.45	0.66	0.32
Weekend	1.13	0.72	4.83	0.01
Children	0.08	-0.37	-2.47	-0.11
Caregiver	-0.49	-1.02	-2.99	-0.25
Obese	-0.38	-0.14	-0.42	-0.31
Divorced	-0.38	-0.27	-0.88	-0.32
Health condition	-1.36	-1.22	-3.15	-0.48
Headache	-4.45	-3.41	-9.82	-0.78
Alone	-7.13	-2.10	-3.73	-0.75
Smoker	-1.01	-0.84	-2.85	-0.70

- Split sample into two: top vs. bottom: “high income” predict all measures of psychological well-being.
- Then consider the relative predictiveness of other factors.
- Strikingly important: “alone”, “headache”, and “smoker”

Courtesy of Daniel Kahneman and Angus Deaton. "High Income Improves Evaluation of Life but Not Emotional Well-Being." PNAS. Sept. 21, 2010. vol. 107, no. 38.

Wishes of the dying

- Australian nurse recorded her experiences from palliative care
- The top five regrets of the dying:
 - (1) I wish I'd had the courage to live a life true to myself, not the life others expected of me.
 - (2) I wish I hadn't worked so hard.
 - (3) I wish I'd had the courage to express my feelings.
 - (4) I wish I had stayed in touch with my friends.
 - (5) I wish that I had let myself be happier.
- How do we interpret these findings?

What kinds of things could make you happier?

- Invest in and maintain social relationships
 - Small acts can make a big difference, e.g. letters of gratitude or random acts of kindness
 - Helping others as an investment in your future happiness
- Choose meaningful work over money
- Seek support to improve your mental health
- Reduce social media usage?
- Other?

Psychotherapies can be highly effective but large treatment gaps remain.

- Lots of evidence that psychotherapies and pharmacotherapy are effective in reducing depression, anxiety
- Yet often large treatment gaps remain.
 - Stigma, shame
 - Misperceptions (low perceived effectiveness; projection bias)
 - Other behavioral biases (e.g. procrastination)
- Another view of psychotherapy: helps you figure out your objective function in life
 - What makes you happy?
 - How can you best pursue what makes you happy?
- Coaches are very common in sports. Why not also have a coach for your mind?

Do social media make you happier?

- Alcott et al. (2020) randomize paying students to deactivate Facebook for a month (before 2018 mid-term election).
- Results:
 - (i) Reduced online activity, while increasing offline activities such as watching TV alone and socializing with family and friends
 - (ii) Reduced factual news knowledge and political polarization
 - (iii) increased subjective well-being
 - (iv) Large persistent reduction in post-experiment Facebook use
- Why are people on Facebook if it doesn't make them happy?
- Of course, connecting online can also have large benefits!

Experiment more!

- We tend do the same things over and over again.
- Why don't we experiment more?
 - Immediate costs, long-term benefits
 - Default effects/inertia
 - Other reasons?
- Go out and try new things! Read more [HERE](#).

Next lecture

- Policy with behavioral agents
- Read Thaler and Sunstein (2003) – entire (short) paper.

References used in this lecture I

- Nisbett, Richard E. and Timothy D. Wilson**, “Telling More Than We Can Know: Verbal Reports on Mental Processes,” *Psychological Review*, 1977, 84 (3), 231–259.
- Thaler, Richard H. and Cass R. Sunstein**, “Libertarian Paternalism,” *American Economic Review (Papers and Proceedings)*, 2003, 93 (2), 175–179.

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