



Measuring Dimensions of Subjective Wellbeing: The Role of Official Statistics

Arthur A. Stone
Professor, Department of Psychology
Director, USC Dornsife Center for Self-Report Science
University of Southern California

Disclosures: AAS is a Senior Scientist with the Gallup Organization, a Senior Consultant with ERT, Inc., and a Consultant with Johnson & Johnson, Inc.

Setting the Stage



- **Subjective Wellbeing** is a component of Wellbeing, and a convenient one summarizing the impact of all wellbeing factors, perhaps even as a direct measure of economic *utility*.
- "...refers to how people experience the quality of their lives and includes both emotional reactions and cognitive judgments."

There are Components of Subjective Wellbeing



- Eudemonic or purpose and meaning
- Life satisfaction or evaluative
- Hedonic or Affective or Experiential
 - Panel adopted Experienced Wellbeing or *ExWB*
- “Happiness” is confusing
 - *Either* life satisfaction or hedonic WB
- Components covary, but not always
 - Low ExWB yet high Sense of Purpose in going to medical school

Dissatisfaction with GDP as a measure of Utility: From Robert Kennedy’s 1968 speech at University of Kansas



“Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials.

It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything in short, except that which makes life worthwhile”

Broad Uses of SWB in Policy



- Covered in next two presentations
- Standard Cost-benefit analysis
 - Locating “pockets” of misery
 - Identifying successful policies
 - Tracking health/unemployment/taxation policies
 - Tracking quality of life in older age
 - Understanding work environments
 - Impact of commuter policies, volunteering
 - Potential that SWB impacts morbidity and mortality
 - Impact of environment on wellbeing
- “De-shrouding” from David Halpern
 - Currently, population knows little about WB associated with various occupations or activities
 - Given how poor we are at predicting future WB (focusing-illusions make this is especially important)
 - Implications for various health issues, such as end-of-life

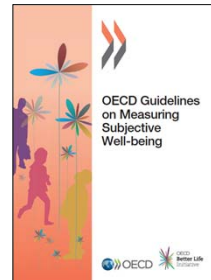
Recent developments in Wellbeing



- Commission on the Measurement of Economic Performance and Social Progress: “Sarkozy Commission” 2009
 - *“..... should be measured separately to derive a more comprehensive appreciation of people’s lives....[subjective well-being] should be included in larger-scale surveys undertaken by official statistical offices.”*
- World Health Organizations’ definition of Health
 - *“Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.”*
- Kingdom of Bhutan’s Wellbeing program
 - Gross National Happiness: environmental emphasis
- Gallup Organization’s polls
 - World Poll; Daily Poll

Recent developments in Wellbeing

- UK's Office of National Statistics (ONS) recent surveys
 - December 2011; 4,000 Adults
 - Annual Population Survey: 80,000 Adults
- Organization for Economic Cooperation and Development (OECD; 34 member countries) report on measuring SWB & Second Commission



Why measure it and recent history

- Legatum Institute, Commission on Wellbeing and Policy
 - "...we should measure wellbeing more often and do so comprehensively.... This would help governments improve policies, companies raise productivity, and people live more satisfying lives."

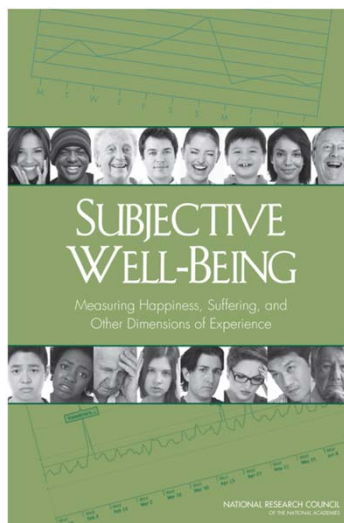
Selected Conclusions and Recommendations from the NSA Report

Panel on Measuring Subjective Wellbeing in a Policy-Relevant Framework

Commissioned by the National Institute on Aging of the US National Institutes of Health and the UK Economic and Social Research Council.

Extensive set of presentations to the Panel.

Expert review of Panel's report.



Panel Members

ARTHUR A. STONE (*Chair*), Department of Psychiatry and Behavioral Sciences, Stony Brook University
NORMAN M. BRADBURN, Department of Psychology, University of Chicago
LAURA L. CARSTENSEN, Department of Psychology, Stanford University
EDWARD F. DIENER, Department of Psychology, University of Illinois at Urbana-Champaign
PAUL H. DOLAN, Department of Social Policy, London School of Economics and Political Science
CAROL L. GRAHAM, The Brookings Institution, Washington, DC, and School of Public Policy, University of Maryland, College Park
V. JOSEPH HOTZ, Department of Economics, Duke University
DANIEL KAHNEMAN, Woodrow Wilson School of Public and International Affairs, Princeton University
ARIE KAPTEYN, Center for Economic and Social Research, University of Southern California, and RAND Corporation
AMANDA SACKER, Research Department of Epidemiology and Public Health, University College London
NORBERT SCHWARZ, Department of Psychology, University of Michigan
JUSTIN WOLFERS, Gerald R. Ford School of Public Policy, University of Michigan

CHRISTOPHER MACKIE, *Study Director*
ANTHONY S. MANN, *Program Coordinator*

Panel's Charge I



- Review the current state of research and evaluate methods for measuring self-reported hedonic (or experienced) well-being that are useful for monitoring, informing, and policy analysis purposes.
- The report should not assess the value of evaluative well-being measures.

Panel's Charge II



- Assess whether research on, and the methods to study, ExWB have advanced to a point that warrants the federal government collecting data in surveys and constructing indicators, accounts, or other statistics to inform social and economic policies.

Panel's Charge III



- Recommend strategies for implementing data collection on ExWB, or, if premature, outline work that needs to be done before moving measurement of ExWB to statistical agency agendas.

Report Table of Contents



1. Introduction
2. Conceptualizing Experienced (Hedonic) Wellbeing
3. Measuring Experienced Wellbeing
4. Additional Conceptual and Measurement Issues
5. Subjective Wellbeing and Policy
6. Data Collection Strategies

A total of 18 Conclusions and 15 Recommendations

Importance of Acknowledging and Employing Experiential SWB Measures



CONCLUSION 2.1

ExWB is distinctive enough from overall life evaluation to warrant pursuing it as a separate element in surveys; their level of independence demands that they be assessed as distinct dimensions.

Experiential WB has both Positive and Negative Components; Both need to be considered



CONCLUSION 2.3

Both positive and negative emotions must be accounted for in ExWB measurement Assessments of ExWB should include both positive and negative dimensions in order for meaningful inferences to be drawn.

A Focus on Suffering has been Overlooked



RECOMMENDATION 2.2

A scale of suffering that has a duration dimension would be a useful measurement construct and should be developed. Such a measure might capture and distinguish between things like minutes of pain or stress versus ongoing poverty, hunger, etc.

Experienced Subjective Wellbeing should include Pain



RECOMMENDATION 2.5

Pain may be an important dimension of ExWB given that it affects people's ability to engage in day-to-day activities.

Meaning of Experiences should be Measured



CONCLUSION 2.4

An important part of people's experiences may be overlooked if concepts associated with purpose and purposelessness are not included alongside hedonic ones like pleasure and pain in measures of ExWB.

Sophisticated methods for assessing Experiential WB will not be practical in many applications



CONCLUSION 3.1

Momentary assessment methods are often regarded as the gold standard for capturing experiential states. However, these methods have not typically been practical for general population surveys because they involve highly intensive methods, are difficult to scale up to the level of nationally representative surveys

Despite extensive use in literature,
more validation for Day
Reconstruction Method



RECOMMENDATION 3.3

Additional research is needed to better establish the evidence base for determining when the DRM is an adequate substitute for EMA methods of measuring ExWB.

Brief Description of the BLS's American Time Use Study (ATUS)



- The standard in the US for time use
 - Bureau of Labor Statistics (BLS)
 - Data collection is via CATI
 - Activity blocks are systematically captured through the day
 - Coded with three-tier system, yielding tremendous activity specificity
 - Interview takes between 15-20 minutes
- Experimental WB Module 2010 data
 - Over 12,000 respondents
 - Sampled 3 random episodes from each respondent's day
- 2012 now available

Strong support for continuing and expanding the American Time Use Survey



RECOMMENDATION 3.4

While it may not be practical to run the ATUS as a full DRM—although this would yield very valuable information—it may be possible to explore differences between the ATUS SWB module and a full DRM by using a pilot consisting of a sample of ATUS respondents.

CONCLUSION 3.6

Capturing the time-use and activity details of survey respondents enhances the policy relevance of ExWB measures by embedding information about relationships between emotional states and specific activities of daily life.

Cultural effects on SWB need to be better understood



RECOMMENDATION 4.1

More study is needed about the role of cultural effects on ExWB. In particular, the value placed on high-arousal positive states versus low-arousal positive states and the acceptance of negative states, like anger and sadness, likely varies considerably by age and cultural context, which suggests that subpopulations assess ExWB differently.

There are Methodological Issues that need further work



RECOMMENDATION 4.3

Given the potential magnitude of survey mode and contextual effects (as shown in findings related to work by ONS and elsewhere), research on the magnitude of these effects and methods for mitigating them should be a priority for statistical agencies during the process of experimentation and testing of new SWB modules.

SWB Adaptation to Environments is not fully understood and can Impact Policy Implications



CONCLUSION 4.1

The evidence with regard to adaptation suggests that it cannot be characterized as a process that occurs uniformly; people adapt differently to different events and life changes, in some part due to norms and expectations. Ideally, question structures should be designed to allow researchers to decompose changes in response scores into scale recalibration (or other measurement errors) and true quality-of-life change components.

Experiential WB may have a specific Niche for Policy Decisions



CONCLUSION 5.1

ExWB data are most relevant and valuable for informing specific, targeted policy questions, as opposed to general monitoring purposes. At this time, the panel is skeptical about the usefulness of an aggregate measure intended to track some average of an entire population.

The Core Recommendation Experiential SWB as a National Statistic



RECOMMENDATION 6.1

ExWB measurement should, at this point, still be pursued in experimental survey modules. The panel encourages inclusion of ExWB questions in a wide range of surveys so that the properties of data generated by them can be studied further; at this time, ExWB questions should only be considered for inclusion in flagship surveys on a piloted basis. Numerous unresolved methodological issues, such as mode and question-order effects, question wording, and interpretation of response biases need to be better understood before a module should be considered for implementation on a permanent basis.

Look for Opportunities to Use Experiential SWB in Ongoing Surveys



RECOMMENDATION 6.2

ExWB questions or modules should be included (or should continue to be included) in surveys where a strong case for subject-matter relevance can be made—those used to address targeted questions where SWB links have been well researched and where plausible associations to important outcomes can be tested.

Conclusion



- The Panel was enthusiastic about the future prospects of Experiential Wellbeing as a national statistic
- We did strike a cautionary note regarding Official Statistics recommendation
- And we did see a way forward for bringing Experiential Wellbeing measures into a prominent role for understanding and improving human welfare

UK Experiences in Measuring National Well-being

Ed Humpherson
Director General for Regulation
UK Statistics Authority

Adam Bede

“His happy love...was to his thoughts what the sweet morning air was to his sensations: it gave him a consciousness of **wellbeing** that made activity delightful” *Adam Bede* by George Eliot, p394

Evaluative well being

“as Arthur seated himself in his velvet chair... He was conscious of that quiet **wellbeing** which perhaps you and I have felt on a sunny afternoon when, in our brightest youth and health, life has opened up a new vista for us...” *Adam Bede* by George Eliot, p444

Experienced well being

What did the papers say at the beginning?

Daily Mail

A £2m bill to find out that most of us are fairly happy

THE INDEPENDENT



Yasmin Alibhai-Brown
Austerity Britain

Don't be fooled. We're not all in this together

THE INDEPENDENT

Happiness is... the end of pointless surveys like this

THE Sun

THE £2M PRICE OF HAPPINESS

DAILY EXPRESS

Anger at £2m a year survey ...to find out if we're happy

DAILY Mirror

Tories' £2m happy poll 'ridiculous'

What are the papers saying now?

BBC NEWS UK

Mark Easton

Home editor

More from Mark Follow Mark on Twitter

Why wellbeing is not a silly season filler

INTERNATIONAL BUSINESS TIMES

Budget 2014: Britons Enjoy Wellbeing Boost as Life Satisfaction Improves

The Telegraph

Home News World Sport Finance Comm
Politics Investigations Obit Education Earth

HOME > NEWS > UK NEWS > ROAD AND RAIL TRANSPORT

Commuters 'are more miserable'

THE TIMES

We are happier, but don't feel healthier

The Daily Telegraph

Money buys a bit more contentment ...

theguardian

How does commuting affect wellbeing?

FINANCIAL TIMES

Home UK World Companies Markets Global Economy
Columns Analysis Opinion The A List Editorial Blogs Letters

Moving from GDP to economic well-being

Emily Cadman | Apr 07 10:11 | 1 | Share

Conditions for the launch of well being measures

- A. Intellectual climate
- B. Political interest
- C. Civil engagement
- D. Methodological/technical choices
- E. Presentation
- F. Economic scepticism

A. Intellectual climate

- Stiglitz/Fitoussi
- Layard
- Legatum, OECD, nudge, etc....



B. Political interest

- UK politics in 2010
 - David Cameron – aid, environment, Big Society, nudge, wellbeing
 - Coalition Government



C. Civil engagement

- ONS started with a national debate on 'what matters to you?'
- Aim: To gain basis and public support for methods of measuring national well-being.
- Employed both conventional and innovative methods of communicating.



D. Methodological/technical choices 1

- Overall, how satisfied are you with your life nowadays?
- Overall, how happy did you feel yesterday?
- Overall, how anxious did you feel yesterday?
- Overall, to what extent do you feel the things you do in your life are worthwhile?

Evaluative

Experienced

Existential

0 to 10 scale, where 0 = 'not at all' and 10 = 'completely'

D. Methodological/technical choices 2

It wasn't just the right questions. ONS also:

- Developed framework of domains and measures based on what people said 'mattered', alongside existing research
- Distinguished national well-being from personal well-being (and seized opportunities to promote)
- Identified an appropriate survey and a good name ('personal' well being)

E. Presentation

- ONS made a series of key presentational choices





Overall change between years – and not just focussing on the mean

How **Satisfied**

are you with your life nowadays?

27% Say 9 or more out of 10

▲ 0.8 percentage points on previous year

Personal Well-being in the UK, 2013/14



Office for National Statistics

To what extent do you feel that the things you do in your life are

Worthwhile?

33% Say 9 or more out of 10

▲ 1.2 percentage points on previous year

Personal Well-being in the UK, 2013/14



Office for National Statistics

How **Happy**

did you feel yesterday?

33% Say 9 or more out of 10

▲ 1.7 percentage points on previous year

Personal Well-being in the UK, 2013/14



Office for National Statistics

How **Anxious**

did you feel yesterday?

39% Say 1 or less out of 10

▲ 1.4 percentage points on previous year

Personal Well-being in the UK, 2013/14



Office for National Statistics

F. Economic scepticism

GDP puzzles:

- productivity
- household income
- experience versus evidence
- revisions

IMPACTS

- Policy need
- Policy appraisal
- Policy evaluation
- Other evidence of impact, including international

Challenges

- Legitimacy
 - “it’s not as real as GDP”
 - “it’s not right to measure happiness”
 - “it’s interesting but there’s no practical application”
- Building a multi-pronged approach and understanding quality
- Causal inferences and policy impact
- The search for the perfect measure

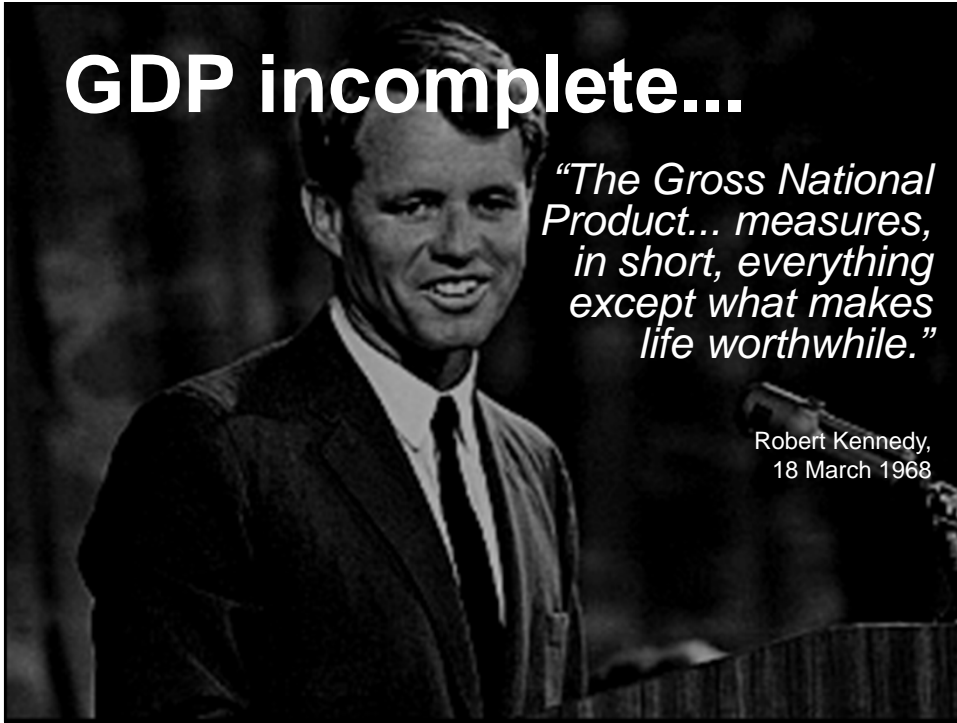
UK Experiences in Measuring National Well-being

Ed Humpherson
Director General for Regulation
UK Statistics Authority

GDP incomplete...

"The Gross National Product... measures, in short, everything except what makes life worthwhile."

Robert Kennedy,
18 March 1968



What Well-Being Metrics Can Contribute to Economics and to Policy

Carol Graham
The Brookings Institution

Committee on National Statistics Seminar
October 24, 2014

BROOKINGS

1

A Celebration of a new science?

- A decade ago, I was one of a very small number of seemingly crazy economists using happiness surveys – AND talking to psychologists! - and surely the only one working on developing economies
- Today - remarkable interest in the topic; momentum, reflects the work of many academics, and experiments like those of remote Bhutan - and not so remote UK - that have taken the science and the metrics seriously; UN; OECD guidelines; most recently, our NAS panel
- What we can measure is indeed amazing - whole new approach in the social sciences – and much of it is relevant to policy
- Many potential applications of the metrics to policy, but first some unanswered questions that are key to policy application
 - a) Why the particular definition of well-being matters – agency issues
 - b) Adaptation and progress paradoxes
 - c) What is a meaningful change in well-being?

BROOKINGS

2

A new science: the metrics

- Can answer questions as diverse as the effects of commuting on well-being, why cigarette taxes make smokers happier, why the unemployed are less unhappy with higher unemployment rates, and why people adapt to things like crime and corruption.
- Method well-suited for questions that revealed preferences do not answer - situations where individuals do not have the *agency* to make choices and/or when consumption decisions are not the result of optimal choices:
- a) macro/institutional arrangements individuals cannot change b) behaviors driven by imposed norms, addiction or self-control problems
- Is survey data really worse than income data?

BROOKINGS

3

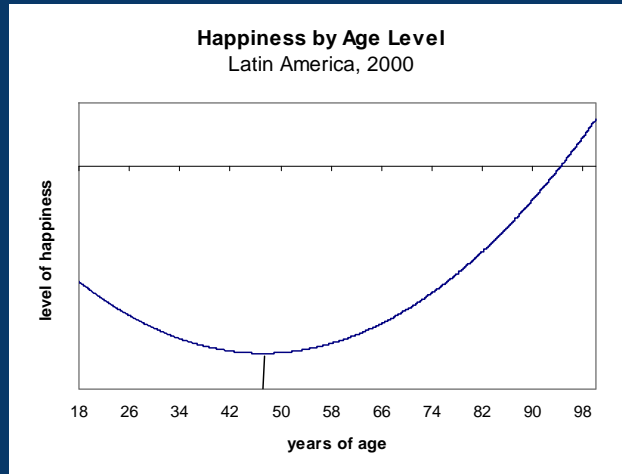
Life Satisfaction patterns across the world

- Age (figure)
- Income
- Health
- Employment
- Marriage (you can't be happier than your wife...)
- Friendships
- Gender (less clear)

BROOKINGS

4

Life Satisfaction and Age!



BROOKINGS

5

Well-Being Equations

- Econometric equations: $W_{it} = \alpha + \beta X_{it} + \varepsilon_{it}$
- W is the reported well-being of individual i at time t , and X is a vector of demographic and socio-economic characteristics (which have stable patterns). Unobserved traits are captured in the error term
- Can then explore well-being effects of things that vary or change, such as inflation and unemployment rates, environmental quality, or personal behaviors, such as smoking, exercising, and commuting time and much more
- Do not ask people if these things make them un/happy
- Works from a research perspective. Yet policy arena is blunt and brutal – need more clarity on well-being definition

BROOKINGS

6

Bentham or Aristotle in the statistics offices?

- Broad agreement among scholars on two related but distinct dimensions of well-being; the relevance of hedonic metrics in particular the subject of our panel
- **Jeremy Bentham:** maximizing the contentment and pleasure of the greatest number of individuals as they experience their lives on a day-to-day basis – e.g. hedonic or *experienced well-being*.
- **Aristotle:** happiness as *eudaimonia*, a Greek word that combines two concepts: “*eu*” meaning well-being or abundance, and “*daimon*” meaning the control of an individual’s destiny. Falls under the rubric of *evaluative well-being*; implicitly includes the opportunity to lead a purposeful or meaningful life.
- Hedonic well-being measures better for assessing QOL and life at the moment; evaluated well-being better for assessing people’s capacities to make choices and to seek fulfilling lives

BROOKINGS

7

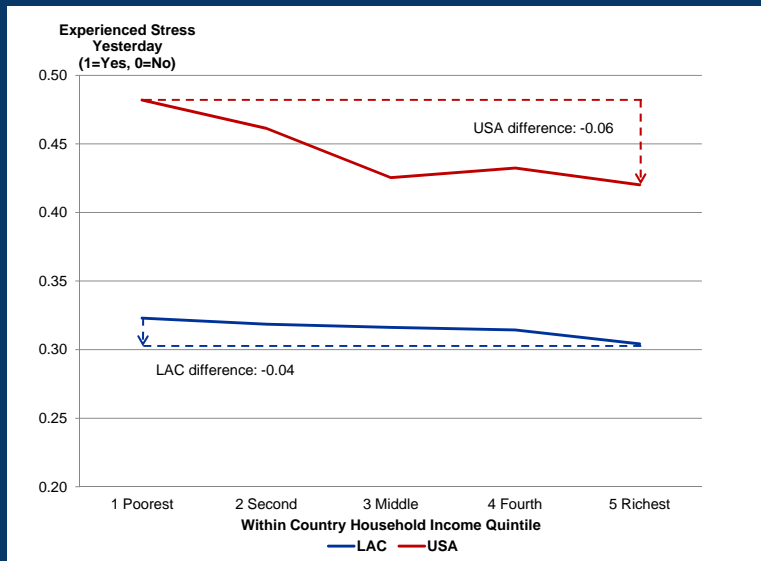
Which Dimension Matters More?

- Which dimension matters to a particular person is in part determined by his/her *capacity* to make choices about life course.
- Lacking capacity – due to poverty or to imposed norms – people may place more value on day-to-day experiences, such as friendship and religion; daily living can be a struggle, stressful; leads to short-term time horizons.
- Those with more capacity may have less time and interest in day-to-day experiences, particularly if they are very focused on some overarching objective or achievement.
- i) Income and experienced vs evaluative well-being in the US (*Kahneman and Deaton*); income as proxy for agency?
- ii) LatAm: poor and friends/family; rich and work/health (Graham and Lora); work/health = agency, friends/family = safety nets;

BROOKINGS

8

Experienced Stress – USA vs LAC



BROOKINGS

9

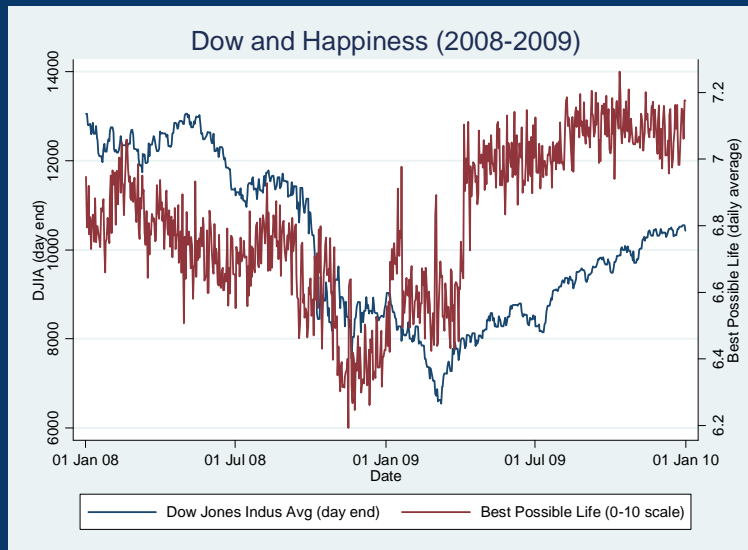
The Adaptation Conundrum

- Adaptations are psychological defense mechanisms;
- Those with limited means may emphasize the daily experience dimension of well-being over life evaluation; is this a way to preserve psychological well-being in the face of adverse conditions and low expectations?
- This may be good from an individual perspective but may also result in collective tolerance for bad equilibrium, such as high levels of crime and corruption or poor norms of health.
- Individuals are better able to adapt to unpleasant certainty – poverty, crime and corruption – than to uncertainty – pain and anxiety, volatile economic growth, and *changes* in crime rates

BROOKINGS

10

Best Possible Life and the DIJA (U Holds Even Adjusted)



BROOKINGS

11

Progress Paradoxes: Changes versus Levels

- We know that people are, on average, happier in countries with higher levels of GDP per capita, BUT.....
- a) happy peasants and frustrated achievers; unhappy migrants
- b) paradox of unhappy growth (rapid growth - rising aspirations, uncertainty? OR lower levels in t-0 – e.g. the unhappy, fast-growing countries started off at lower levels of income and well-being to begin with)
- Some uncertainty is often necessary to achieve development/change; is frustration/unhappiness necessarily associated with the process?

BROOKINGS

12

Remaining Questions for Policy Application

- In addition to adaptation and progress paradox issues:
- Definitional questions – for the most part, increasing clarity on the distinct dimensions of well-being, as well as on the associated terminology among academics; but the public clearly does not. Work to do here!
- What is a meaningful change in well-being? Do we know? How do we translate this for the public?
- Cardinality versus ordinality – e.g. reducing misery or raising aggregate levels of well-being?

BROOKINGS

13

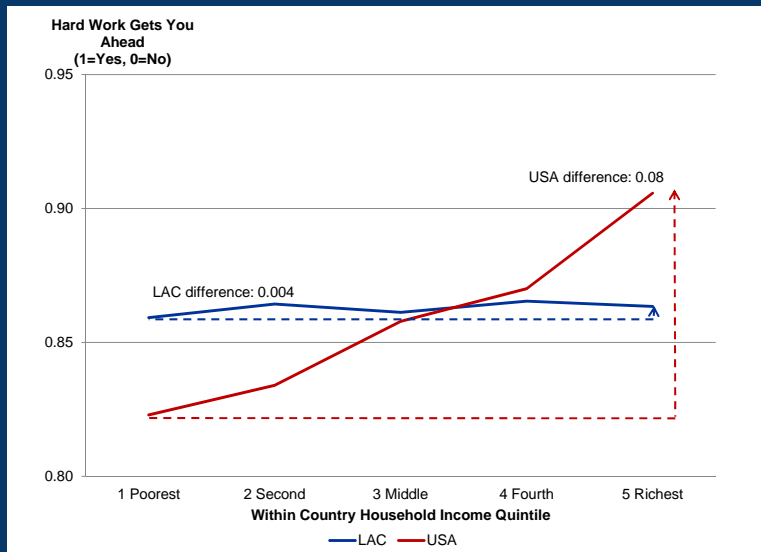
Potential Applications of Each Kind of Metric

- Hedonic metrics and policy? Best for measuring daily experience and quality of life questions – the nature of people's commutes; how stressful (or not) their working lives are; how much they enjoy their communities (UK post office example), etc.
- Health care an important area, particularly when the objective is not prolonging life but quality of life, as in end of life decisions or the effects of different care-giving arrangements
- Evaluative metrics – better for assessing people's *opportunities* for life fulfillment and over the life course; also attitudes about the future and variance across demographic and socio-economic cohorts – relevant to debates on inequality, mobility, among others (Figure)
- The two dimensions not totally separate: daily experience can undermine longer term objectives (job searches); excessive focus on the future at the expense of life today (stress markers)

BROOKINGS

14

Belief in Hard Work – USA vs LAC



BROOKINGS

15

Concluding Thoughts

- Well-being is a much more complicated concept than is income. We can compare income across people with clarity on what it seeks to measure. But it took us years to get GNP right.....
- More to do still, but we are not far from a world in which most governments around the world will be collecting well-being metrics to complement those that are in GDP, and in the same time period, so that we can compare trends across both indicators, both within and across countries
- It is already happening in many countries!

BROOKINGS

16