Assessing the Use of Happiness Survey Responses as Utility Proxies

Daniel J. Benjamin (Cornell and USC)

Berkeley Psych & Econ Graduate Course
2015 April 22
Co-Authors

• All of this work is joint with Ori Heffetz (Cornell) and Miles Kimball (Michigan).

• Also joint with Alex Rees-Jones (Cornell / Wharton):
  – “Can Marginal Rates of Substitution Be Inferred From Happiness Data? Evidence from Residency Choices” (forthcoming), American Economic Review.

• Also joint with Nichole Szembrot (Cornell / Trinity):
Motivation

• Revealed preference: welfare = well-informed choice.
  – Despite limitations, a reasonable starting point.
  – “Utility” is a number that represents the ordinal choice ranking.

• But in many contexts:
  – Individuals do not directly make relevant choices, or the choices not observed (e.g., public goods, policy).
  – Individuals not well-informed about consequences (e.g., policy, projection bias, hedonic misprediction).

• Thus, economists increasingly use survey-based measures of subjective well-being (SWB) as an empirical proxy for utility.
Motivation (cont’d)

• Example from GSS: 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?

• SWB treated as a utility proxy, e.g.:
  – Measuring the negative externality of neighbors’ higher earnings (Luttmer, 2005)
  – Measuring the average American’s tradeoff between inflation and unemployment (DiTella, MacCulloch, and Oswald, 2003)
  – Estimating the effect of health status on marginal utility of consumption (Finkelstein, Luttmer, and Notowidigdo, 2013)
Motivation (cont’d)

• **Implicit assumption**: Responses to commonly-used SWB questions represent what people would choose if well-informed.

• We test this assumption by comparing:
  – The choice ranking of options.
  – The anticipated-SWB ranking of options, according to commonly-used SWB measures.

• We identify overall degree of concordance, as well as systematic deviations.
Choice vs. Anticipated SWB

• Literature focuses on experienced SWB.
  – Divergences from choice are well documented, often assumed to be fully explained by misprediction. (Loewenstein, O’Donoghue, and Rabin, 2003; Gilbert, 2006)

• Crucial for our purposes to compare choice with anticipated SWB:
  – Holds constant information and beliefs under which choice is made (even if people mispredict).
  – Permits assessing individual’s intentions at time of choice.
Related Literature

• Most closely related: Tversky and Griffin (1991), Hsee (1999), and Hsee, Zhang, Yu, and Xi (2003).
  – Choice vs. affective judgments in hypothetical scenarios or very small stakes experiments designed to test theories about the choice process.

• Due to our focus on empirical economics lit:
  – SWB measures modeled on questions from large-scale social surveys.
  – Scenarios relevant for empirical work in economics.
  – We elicit predictions about other valued aspects of the options and estimate the relative choice weights.
Plan for Today

1. Evaluating responses to commonly-used SWB survey questions as utility proxies:
   - Hypothetical choice in a range of contexts: “What Do You Think Would Make You Happier? What Would You Choose?”
   - Actual choice in a high-stakes field setting: “Can Marginal Rates of Substitution Be Inferred From Happiness Data? Evidence from Residency Choices”

2. Developing methodology for constructing utility proxy by combining responses to multiple survey questions:
   - “Beyond Happiness and Satisfaction: Toward Well-Being Indices Based on Stated Preference”
What Do You Think Would Make You Happier? What Do You Think You Would Choose?†

By Daniel J. Benjamin, Ori Heffetz, Miles S. Kimball, and Alex Rees-Jones*
Can Marginal Rates of Substitution Be Inferred from Happiness Data? Evidence from Residency Choices†

By Daniel J. Benjamin, Ori Heffetz, Miles S. Kimball, and Alex Rees-Jones*
Choice Setting

• Medical students’ residency choice
  – Students submit choice ranking to NRMP
    • Gale-Shapley (1962), Roth-Peranson (1999)
  – Incentive-compatible (choice vs. prefs), deliberated, well-informed, private, identifiable moment of choice, identifiable choice set, intertemporal tradeoff, pref heterogeneity
  – But: expected income unrelated

• 23 schools, 561 students in main sample
• 11 days (med) b/w NRMP submission & survey
**Study Timeline**

- **Jan 15**: Ranking Submission Opens
- **Feb 1**: Matching Rankings Due
- **Feb 22**: 1st-Wave Survey Due
- **March 3**: 1st-Wave Survey Completed
- **March 11**: 2nd-Wave Survey Due
- **NRMP List Submitted**
- **1st-Wave Survey Completed**
- **2nd-Wave Survey Completed**
Survey Design

• Web survey
• Elicit top 4 choices (program + specialty)
Our Data on Choice

1. Please enter the top four programs from the preference ordering you submitted to the NRMP.

<table>
<thead>
<tr>
<th></th>
<th>Program</th>
<th>Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Choice</strong></td>
<td>Johns Hopkins</td>
<td>Anesthesiology</td>
</tr>
<tr>
<td><strong>Second Choice</strong></td>
<td>Mass. Gen Hospital</td>
<td>Radiation Oncology</td>
</tr>
<tr>
<td><strong>Third Choice</strong></td>
<td>UCLA</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td><strong>Fourth Choice</strong></td>
<td>NYU</td>
<td>Emergency Medicine</td>
</tr>
</tbody>
</table>
Survey Design

• Web survey
• Elicit top 4 choices (program + specialty)
• For each of the 4:
  – Elicit 3 anticipated-SWB measures
  – Elicit 9 expected ratings on residency attributes
  – Residencies, questions in random order
Our Data on Anticipated SWB/attr.

Thinking about how your life would be if you matriculate into the residency program in Anesthesiology at Johns Hopkins, please answer the questions below.

5. On a scale from 1 to 100, how happy do you think you would feel on a typical day during this residency?

6. On a scale from 1 to 100, how satisfied do you think you would be with your life as a whole while attending this residency?

7. On a scale from 1 to 100, where 1 is "worst possible life for you" and 100 is "best possible life for you" where do you think the residency would put you?

8. On a scale from 1 to 100, how would you rate the prestige and status associated with this residency?

9. On a scale from 1 to 100, what would you expect the quality of your social life to be during this residency?

10. On a scale from 1 to 100, taking into account city quality and access to family and friends, how desirable do you find the location of this residency?

11. On a scale from 1 to 100, how anxious do you think you would feel on a typical day during this residency?

12. On a scale from 1 to 100, to what extent do you think your life would seem worthwhile during this residency?

13. On a scale from 1 to 100, how stressed do you think you would feel on a typical day during this residency?

14. On a scale from 1 to 100, how would you rate your future career prospects and future employment opportunities if you get matched with this residency?

15. On a scale from 1 to 100, how do you expect this residency to affect your control over your life?

16. On a scale from 1 to 100, how desirable is this residency for your spouse or significant other?

Next »
<table>
<thead>
<tr>
<th>Variable label</th>
<th>Question prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happiness during residency</td>
<td>…how happy do you think you would feel on a typical day during this residency?</td>
</tr>
<tr>
<td>Life satisfaction during residency</td>
<td>…how satisfied do you think you would be with your life as a whole while attending this residency?</td>
</tr>
<tr>
<td>Ladder</td>
<td>…where 1 is “worst possible life for you” and 100 is “best possible life for you” where do you think the residency would put you?</td>
</tr>
<tr>
<td>Residency prestige and status</td>
<td>…how would you rate the prestige and status associated with this residency?</td>
</tr>
<tr>
<td>Social life during residency</td>
<td>…what would you expect the quality of your social life to be during this residency?</td>
</tr>
<tr>
<td>Desirability of location</td>
<td>…taking into account city quality and access to family and friends, how desirable do you find the location of this residency?</td>
</tr>
<tr>
<td>Anxiety during residency</td>
<td>…how anxious do you think you would feel on a typical day during this residency?</td>
</tr>
<tr>
<td>Worthwhile life during residency</td>
<td>…to what extent do you think your life would seem worthwhile during this residency?</td>
</tr>
<tr>
<td>Stress during residency</td>
<td>…how stressed do you think you would feel on a typical day during this residency?</td>
</tr>
<tr>
<td>Future career prospects</td>
<td>…how would you rate your future career prospects and future employment opportunities if you get matched with this residency?</td>
</tr>
<tr>
<td>Control over life</td>
<td>…how do you expect this residency to affect your control over your life?</td>
</tr>
<tr>
<td>Desirable for significant other</td>
<td>…how desirable is this residency for your spouse or significant other?</td>
</tr>
</tbody>
</table>
Survey Design

• Web survey
• Elicit top 4 choices (program + specialty)
• For each of the 4:
  – Elicit 3 anticipated-SWB measures
  – Elicit 9 expected ratings on residency attributes
  – Residencies, questions in random order
• For top 3 choices:
  – Also elicit anticipated happiness in rest of life
• Qs about: “true prefs,” match manipulation, demographics. (Use for robustness.)
<table>
<thead>
<tr>
<th></th>
<th>(1) Preferred program rates higher (Correct-prediction rate)</th>
<th>(2) The two programs have same rating</th>
<th>(3) Preferred program rates lower</th>
<th>(4) Conditional correct-prediction rate</th>
<th>(5) # Pairwise program comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happiness during residency</td>
<td>52%</td>
<td>27%</td>
<td>21%</td>
<td>71%</td>
<td>3240</td>
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<tr>
<td>Life satisfaction during residency</td>
<td>59%</td>
<td>23%</td>
<td>18%</td>
<td>77%</td>
<td>3244</td>
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<tr>
<td>Ladder</td>
<td>65%</td>
<td>18%</td>
<td>17%</td>
<td>80%</td>
<td>3245</td>
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<tr>
<td>Residency prestige and status</td>
<td>56%</td>
<td>16%</td>
<td>28%</td>
<td>67%</td>
<td>3244</td>
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<tr>
<td>Social life during residency</td>
<td>52%</td>
<td>20%</td>
<td>28%</td>
<td>65%</td>
<td>3247</td>
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<tr>
<td>Desirability of location</td>
<td>61%</td>
<td>14%</td>
<td>25%</td>
<td>71%</td>
<td>3241</td>
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<tr>
<td>Anxiety during residency</td>
<td>38%</td>
<td>29%</td>
<td>33%</td>
<td>53%</td>
<td>3236</td>
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<tr>
<td>Worthwhile life during residency</td>
<td>44%</td>
<td>40%</td>
<td>16%</td>
<td>73%</td>
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<td>Stress during residency</td>
<td>40%</td>
<td>26%</td>
<td>34%</td>
<td>54%</td>
<td>3236</td>
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<tr>
<td>Future career prospects</td>
<td>49%</td>
<td>30%</td>
<td>21%</td>
<td>70%</td>
<td>3247</td>
</tr>
<tr>
<td>Control over life</td>
<td>40%</td>
<td>30%</td>
<td>30%</td>
<td>57%</td>
<td>3235</td>
</tr>
<tr>
<td>Desirable for significant other</td>
<td>65%</td>
<td>16%</td>
<td>19%</td>
<td>77%</td>
<td>2087</td>
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<tr>
<td>Rank-ordered logit coeffs</td>
<td>(1) Choice</td>
<td>(2) Happiness during residency</td>
<td>(3) Life satisfaction during residency</td>
<td>(4) Ladder</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
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<td>----------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>Residency prestige and status</td>
<td>2.5*** (0.3)</td>
<td>0.0 (0.3)</td>
<td>0.7* (0.3)</td>
<td>0.9** (0.4)</td>
<td></td>
</tr>
<tr>
<td>Social life during residency</td>
<td>1.6*** (0.3)</td>
<td>3.3*** (0.4)</td>
<td>2.7*** (0.4)</td>
<td>3.2*** (0.4)</td>
<td></td>
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<tr>
<td>Desirability of location</td>
<td>1.7*** (0.2)</td>
<td>0.4* (0.2)</td>
<td>1.7*** (0.3)</td>
<td>1.9*** (0.3)</td>
<td></td>
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<tr>
<td>Anxiety during residency</td>
<td>-0.3 (0.3)</td>
<td>-1.3*** (0.3)</td>
<td>-0.5 (0.4)</td>
<td>-0.8** (0.3)</td>
<td></td>
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<tr>
<td>Worthwhile life during residency</td>
<td>4.4*** (0.5)</td>
<td>6.3*** (0.6)</td>
<td>7.0*** (0.6)</td>
<td>6.4*** (0.6)</td>
<td></td>
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<tr>
<td>Stress during residency</td>
<td>-0.1 (0.3)</td>
<td>-1.0*** (0.4)</td>
<td>-0.7** (0.4)</td>
<td>-0.6* (0.3)</td>
<td></td>
</tr>
<tr>
<td>Future career prospects</td>
<td>3.2*** (0.5)</td>
<td>0.9* (0.5)</td>
<td>1.8*** (0.5)</td>
<td>3.0*** (0.5)</td>
<td></td>
</tr>
<tr>
<td>Control over life</td>
<td>0.4 (0.3)</td>
<td>0.9** (0.3)</td>
<td>0.4 (0.3)</td>
<td>0.4 (0.3)</td>
<td></td>
</tr>
<tr>
<td>Desirable for significant other</td>
<td>2.6*** (0.3)</td>
<td>0.5* (0.3)</td>
<td>0.7*** (0.3)</td>
<td>1.0*** (0.3)</td>
<td></td>
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<table>
<thead>
<tr>
<th># Observations</th>
<th>2169</th>
<th>2167</th>
<th>2169</th>
<th>2168</th>
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<tbody>
<tr>
<td>McKelvey &amp; Zavoina $R^2$</td>
<td>0.40</td>
<td>0.28</td>
<td>0.35</td>
<td>0.40</td>
</tr>
<tr>
<td># Students</td>
<td>557</td>
<td>557</td>
<td>557</td>
<td>557</td>
</tr>
</tbody>
</table>
Some Findings

- Substantial differences b/w choice and SWB columns; statistically and economically signif.
- But high correlations and no sign reversals.
- Evaluative (life satisfaction, ladder) closer to choice than happiness during residency.
- What about combinations of SWB Qs?
  - 4-interval-happiness index
  - 3-SWB-measure index
  - The two combined
Also in the Paper:

• Robustness
  – Survey response biases (halo effect, cog. dis.)
  – Econometric specifications (OLS+FE, ordered logit)
  – Measurement error (attributes; SWB)
  – Heterogeneity in scale use (normalization)
  – Heterogeneity in tradeoffs (sample cuts)
  – Choice vs. preferences (3 tables)
• Compare 1\textsuperscript{st} vs 2\textsuperscript{nd}, vs 3\textsuperscript{rd}, and vs 4\textsuperscript{th} choice.
Beyond Happiness and Satisfaction: Toward Well-Being Indices Based on Stated Preference

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Nichole Szembrot (Cornell / Trinity College)
Additional Motivation

• Due to many well-known shortcomings of income-based indicators, economists examining additional measures “beyond GDP”

• **This paper:** survey-based, individual-level index

• SWB may capture a wide range of experiences, including unrelated to market exchange

• National measurement advocated by many researchers (Diener, Kahneman, Krueger, Layard, Sen, Stiglitz,...)

• Recently, increasingly embraced by policymakers
The U.K. ONS Survey

Sent to ~200,000/yr households since April, 2011:
• 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?

Prime Minister David Cameron: “it’s time we focused not just on GDP but on GWB—general wellbeing.”

Other countries expressed interest, OECD & UN initiatives...

This Paper

• GDP: a long history of theory & empirics
• Survey-based indices: still many open questions
• Two urgent, practical questions:
  1. Which questions should a SWB survey ask?
     • So far, no 1 question seems to capture everything
     • Different researchers have different favorite sets
  2. How should responses be weighted?
     • Current proposals virtually silent.
• Our aim: to provide systematic, principled guidance—anchored in revealed preference (though hypothetical = stated)—for developing well-being surveys and indices.
  – Many margins for improving implementation; an agenda & a first effort.
Contributions

1. We develop a simple theoretical framework.
   – An agent’s utility depends on fundamental “aspects of well-being”: $u(w)$

2. We attempt to identify, as comprehensively as possible, aspects of well-being.
   – Draw on proposals from economics, psychology, philosophy: what’s in $w$? (beyond happ and LS)

3. We demonstrate a SP survey method for estimating the aspects’ marginal utilities.
   – Respondents (Rs) state their preferences between $w_1$ and $w_2 \Rightarrow$ we estimate $u'(w)$. 
Imagine you are making a personal decision, and that you face a choice between two options: Option 1 and Option 2. The two options are predicted to have different effects over the next four years but to have the same effects after that. The table below lists these predicted differences in the next four years. Please assume that anything not listed in the table would be marked “about equal” if it were listed.

Key assumption: Stated preference an unbiased measure of true preference.
- Surely false; known deviations; the “right” prefs?; our evidence.
Standard Consumption Framework

• This paper: one individual.
• $u(c)$ depends on a vector $c = (c_1, ..., c_M)'$.

\[
\Delta u \approx \sum_{m=1}^{M} \frac{\partial u(c)}{\partial c_m} \Delta c_m \propto \sum_{m=1}^{M} p_m \Delta c_m
\]

\[
\text{index} = \sum_{m=1}^{M} \bar{p}_m c_m
\]

• Governments measure $c$ and prices.
• For small $\Delta c$, change in the index is approximately proportional to $\Delta u$.
• Perhaps main limitation: only consumption goods
Fundamental Aspects of Well-Being

Rather than focusing on standard consumption goods (e.g., rice, TVs, train rides)...

...we focus on more fundamental aspects of well-being (e.g., health, emotional states, freedoms).

More general approach in that fundamental aspects include all objects of desire.

– Consumption goods & non-consumption determinants of well-being.
Our Framework

• $u(\mathbf{w})$ depends on a vector $\mathbf{w} = (w_1, ..., w_J)'$.

$$\Delta u \approx \sum_{j=1}^{J} \frac{\partial u(\mathbf{w})}{\partial w_j} \Delta w_j$$

$$\text{index} = \sum_{j=1}^{J} \frac{\partial u(\mathbf{w})}{\partial w_j} w_j$$

• Purpose of SWB survey: measure $\mathbf{w}$; can add “objective” measures.

• For small $\Delta \mathbf{w}$, change in the index approx. proportional to $\Delta u$.

• Purpose of our SP survey: estimate the missing ingredient: the marginal utilities.
• A major obstacle to implementing our framework: **no one knows what’s in w.**
  – Different authors have proposed different aspects as important.

• Our approach: construct as comprehensive a list as we practically can.
  – Minimizes risk of missing important aspects.
  – Minimizes influence of our *ex ante* beliefs.
  – Makes the results maximally useful to researchers.
  – However, aspects on our list may overlap.
Compiling a Master List (136 items)

- Six classes of items:
  1. Single-question SWB measures from large social surveys (e.g., happiness, life satisfaction)
  2. Multi-question SWB batteries from psychology (e.g., PANAS, GHQ)
  3. Aspects of WB proposed by economists, psychologists, philosophers (from Maslow (1946) to Stiglitz et al. (2009) and beyond)
  4. Our own work, introspection, and discussions (e.g., Benjamin, Heffetz, Kimball, Rees-Jones, AER 2012)
  5. Novel combination-aspect survey questions that attempt to capture $u$ (e.g., “the overall well-being of you and your family”)
  6. Survey measures of “objective” indicators (for comparison) (GDP (also pc, growth), unemployment & inflation (misery index), equality, longevity (HDI), health)

- Combine similar aspects; vocabulary; orientation


Maslow, Abraham. 1946. “Theory of Human Motivation.” In Twentieth century psychology: recent developments in psychology, By Philip Lawrence Harriman. (When it appears below, the # refers to the aspect’s place in Maslow’s hierarchy of needs, as follows: 1. Physiological; 2. Safety; 3. Love; 4. Esteem; and 5. self-actualization.)

Imagine you are making a personal decision, and that you face a choice between two options: Option 1 and Option 2. The two options are predicted to have different effects over the next four years but to have the same effects after that. The table below lists these predicted differences in the next four years. Please assume that anything not listed in the table would be marked “about equal” if it were listed.

Click here to see the instructions again

<table>
<thead>
<tr>
<th></th>
<th>OPTION 1</th>
<th></th>
<th>OPTION 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>much higher</td>
<td>somewhat higher</td>
<td>slightly higher</td>
<td>about equal</td>
</tr>
<tr>
<td>your sense that your life is meaningful and has value</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the absence of stress in your life</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Between these two options, which do you think you would choose?

<table>
<thead>
<tr>
<th></th>
<th>OPTION 1</th>
<th></th>
<th>OPTION 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Much prefer Option 1</td>
<td>Somewhat prefer Option 1</td>
<td>Slightly prefer Option 1</td>
<td>Slightly prefer Option 2</td>
</tr>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>
Survey Design

• ~4,600 U.S. adults, Dec. 2011
  (web sample *not* randomly selected, but roughly tracks Census figures *on many observables*)
  [92.5% indicated “always” or “mostly” understood what they were asked to do; 7.5% indicated “not really.”]

• Each R: 30 choices (11 personal, 5 policy; 14 exp.)
  – Different # of aspects per scenario (2, 3, 4, 6)
  – Everything randomly drawn (under constraints)

• **Econometric specification**: OLS, pooled within personal/policy, clustered by R.

  \[
  \text{StatedPreference}_{s} = \alpha + \text{AspectRatings}_{s}' \cdot \beta + \epsilon_{s}.
  \]
<table>
<thead>
<tr>
<th>Aspect</th>
<th>Personal</th>
<th></th>
<th>Policy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>S.E.</td>
<td>Rank</td>
<td>Coef.</td>
</tr>
<tr>
<td>freedom from corruption, injustice, and abuse of power in your nation</td>
<td>0.39</td>
<td>0.026</td>
<td>0a</td>
<td></td>
</tr>
<tr>
<td>the overall well-being of you and your family</td>
<td>0.46</td>
<td>0.016</td>
<td>1</td>
<td>0.33</td>
</tr>
<tr>
<td>the happiness of your family</td>
<td>0.43</td>
<td>0.017</td>
<td>2</td>
<td>0.24</td>
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<tr>
<td>your health</td>
<td>0.42</td>
<td>0.017</td>
<td>3</td>
<td>0.29</td>
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<tr>
<td>you being a good, moral person and living according to your personal values</td>
<td>0.40</td>
<td>0.017</td>
<td>4</td>
<td>0.35</td>
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<tr>
<td>the quality of your family relationships</td>
<td>0.37</td>
<td>0.017</td>
<td>5</td>
<td>0.25</td>
</tr>
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<td>society helping the poor and others who struggle</td>
<td>0.30</td>
<td>0.024</td>
<td>5a</td>
<td></td>
</tr>
<tr>
<td>the morality, ethics, and goodness of other people in your nation</td>
<td>0.29</td>
<td>0.024</td>
<td>5b</td>
<td></td>
</tr>
<tr>
<td>your financial security</td>
<td>0.35</td>
<td>0.017</td>
<td>6</td>
<td>0.28</td>
</tr>
<tr>
<td>freedom of speech and people’s ability to take part in the political process and community life</td>
<td>0.29</td>
<td>0.025</td>
<td>6a</td>
<td></td>
</tr>
<tr>
<td>the well-being of the people in your nation</td>
<td>0.29</td>
<td>0.024</td>
<td>6b</td>
<td></td>
</tr>
<tr>
<td>your mental health and emotional stability</td>
<td>0.34</td>
<td>0.016</td>
<td>7</td>
<td>0.25</td>
</tr>
<tr>
<td>your sense of security about life and the future in general</td>
<td>0.33</td>
<td>0.016</td>
<td>8</td>
<td>0.26</td>
</tr>
<tr>
<td>you having many options and possibilities in your life and the freedom to choose among them</td>
<td>0.33</td>
<td>0.017</td>
<td>9</td>
<td>0.35</td>
</tr>
<tr>
<td>the amount of freedom in society</td>
<td>0.27</td>
<td>0.025</td>
<td>9a</td>
<td></td>
</tr>
<tr>
<td>your sense that your life is meaningful and has value</td>
<td>0.32</td>
<td>0.017</td>
<td>10</td>
<td>0.27</td>
</tr>
<tr>
<td>how satisfied you are with your life</td>
<td>0.31</td>
<td>0.017</td>
<td>11</td>
<td>0.19</td>
</tr>
<tr>
<td>you feeling that you have enough time and money for the things that are most important to you</td>
<td>0.30</td>
<td>0.017</td>
<td>12</td>
<td>0.21</td>
</tr>
<tr>
<td>how much you like your life</td>
<td>0.30</td>
<td>0.017</td>
<td>13</td>
<td>0.19</td>
</tr>
<tr>
<td>how peaceful, calm, and harmonious your life is</td>
<td>0.29</td>
<td>0.017</td>
<td>14</td>
<td>0.25</td>
</tr>
<tr>
<td>your nation being a just society</td>
<td>0.25</td>
<td>0.023</td>
<td>14a</td>
<td></td>
</tr>
<tr>
<td>your feeling of independence and self-sufficiency</td>
<td>0.29</td>
<td>0.016</td>
<td>15</td>
<td>0.23</td>
</tr>
<tr>
<td>your pride and respect for yourself</td>
<td>0.29</td>
<td>0.017</td>
<td>16</td>
<td>0.19</td>
</tr>
<tr>
<td>your sense that you are standing up for what you believe in</td>
<td>0.29</td>
<td>0.017</td>
<td>17</td>
<td>0.21</td>
</tr>
</tbody>
</table>
Top-Ranking Aspects

• Conspicuous at the top:

Some traditional SWB measures:

  – (family) **happiness** [rank 2], **life satisfaction** [11]

But also:

  – **family** (well-being [1], happiness [2], relationship quality [5])
    • [1] and [2] are ours!

  – **health** (general [3], mental [7])

  – **security** (about life [8], financial [6], physical [21])

  – **values** (being moral [4], meaningful life [10])
Concluding Remarks

Paper addresses some, but not all, issues in constructing well-being indices.

• Theory: aggregation across individuals
  – A central question and active area of research.
    (e.g., Fleurbaey, Schokkaert, and Decancq, 2009)
  – We propose a method in companion paper
    (Benjamin, Heffetz, Kimball, and Szembrot, 2013, AER P&P)

• Implementation: both $w$ and $u'(w)$ first shot.

• Known issues in survey measures of SWB
  – Over-sensitive, under-sensitive.
• Convergent evidence across papers:
  – Current SWB measures may be the best available single-question survey-based proxies for utility.
  – Evaluative SWB measures closer than affective.
  – But don’t fully capture family well-being.

• Some ongoing work:
  – Exploring possibility of implementing SP survey with New Zealand Treasury and Israel’s NEC
  – Developing theoretical foundations for aggregating well-being indices (joint with Gabriel Carroll)
  – Examining how Rs interpret SWB questions to try to improve them (joint with Marc Fleurbaey, Jakina Debnam)