How Do Subjective Consumption Vectors Vary with Age?

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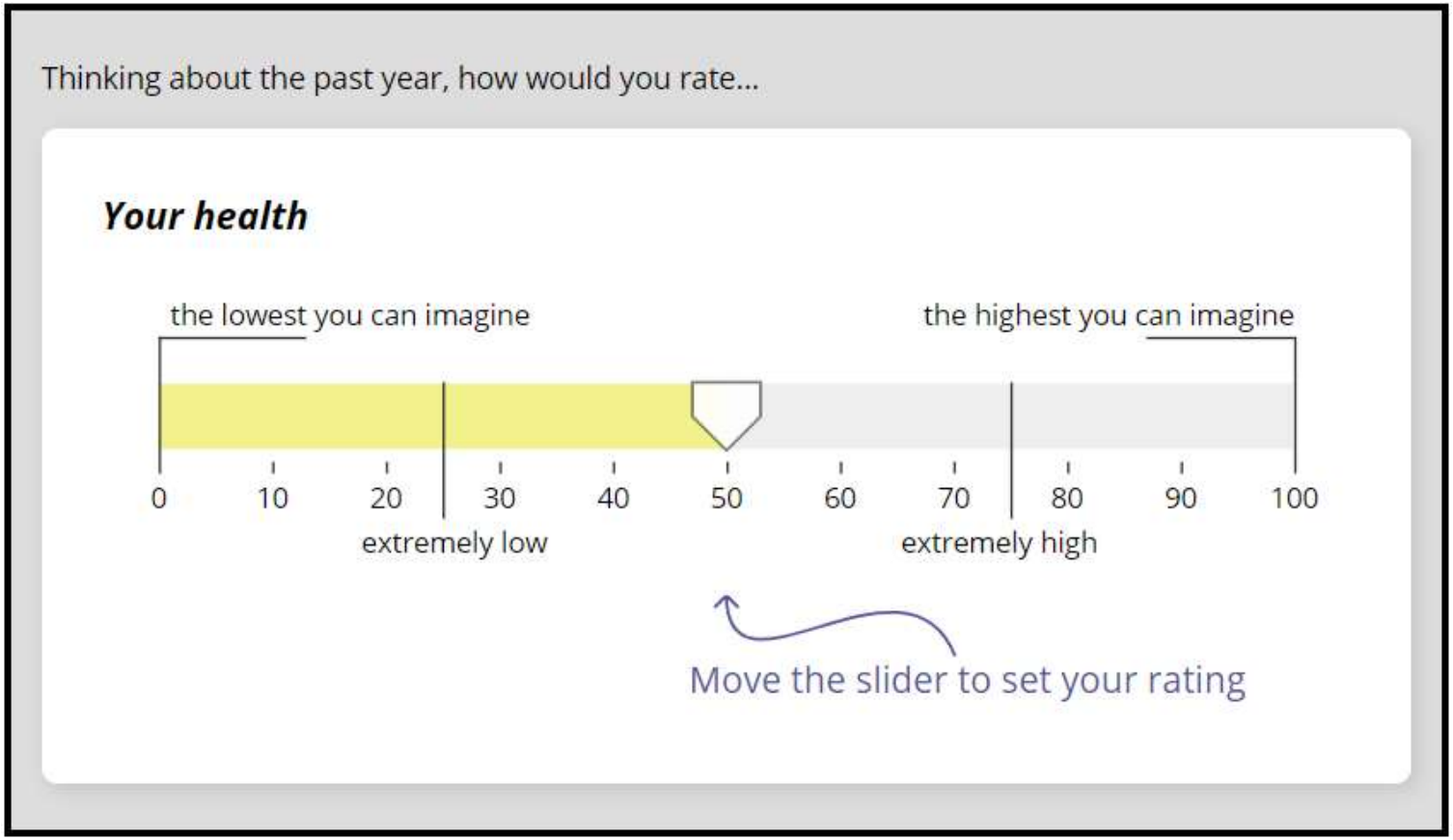
If well-being varies with age, why?

- Age trends are a persistent finding
  - U-shaped for life satisfaction and some emotional/hedonic/affective measures (e.g., Blanchflower & Oswald, 2004, 2008, 2017; Stone, Schwartz, Broderick, & Deaton, 2010)
  - Increasing for some emotional measures (e.g., Stone, Schwartz, Broderick, & Deaton, 2010; Carstensen et al., 2011)
- Some explanations involve more optimization
  - Time horizon piece of socioemotional selectivity theory – e.g., Carstensen, Fung & Charles, 2003
  - "Time crunch" theory (suggested by Steptoe, Deaton, & Stone, 2015)
- Some explanations involve less
  - Emotional regulation piece of socioemotional selectivity theory
  - Unmet aspirations (e.g., Schwandt, 2016)
- Optimizing theories predict co-movement in subjective consumption vector

Empirical strategy

- U = f(types of subjective consumption: ***aspects of well-being***)
  - 2,187 aspects (anything people care about)
- New survey (MTurk)
  - Rating aspect levels on 0-100 scale
  - Calibration questions for scale-use adjustment
- Today: pilot data (N=996) on 1,846 aspects

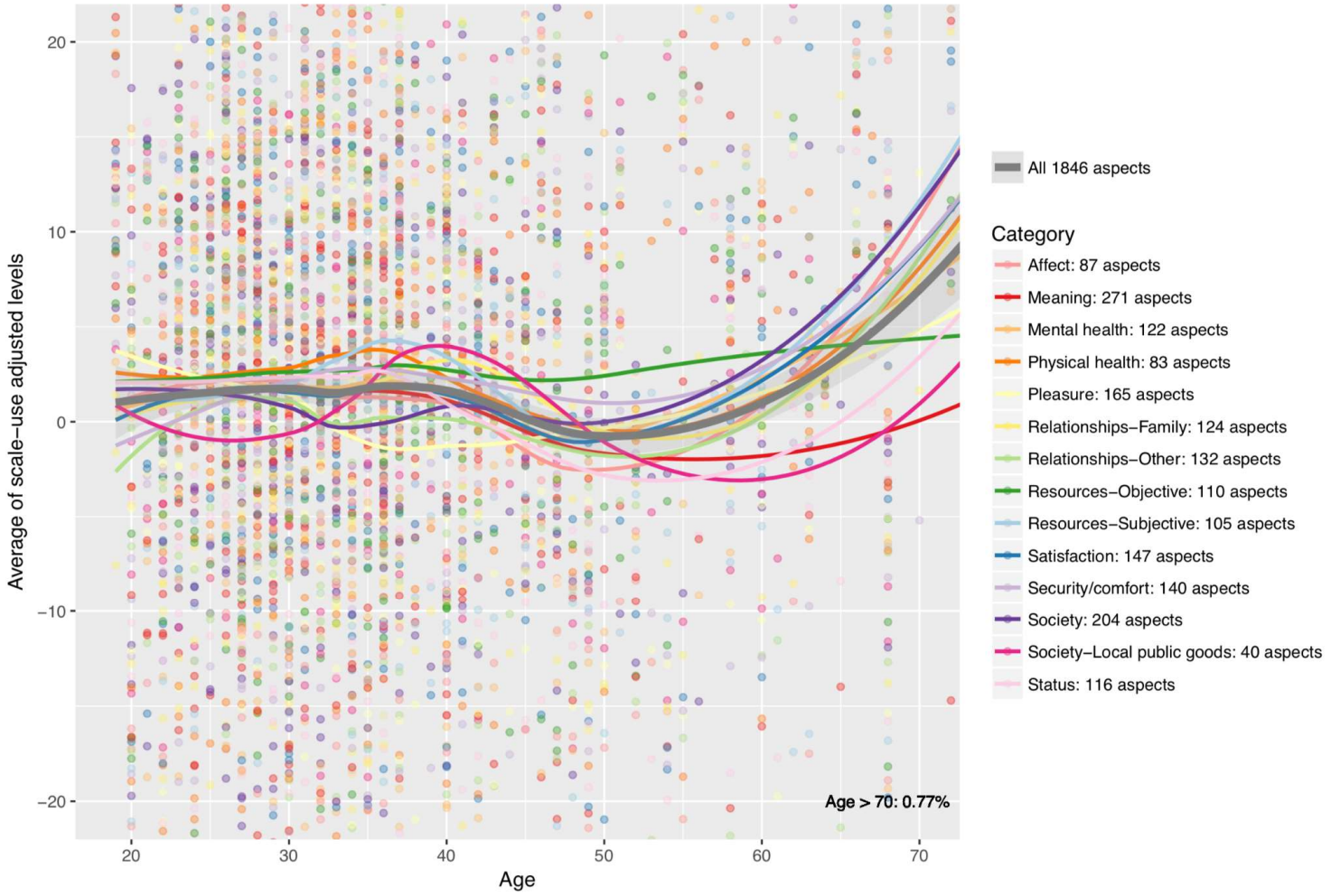
Example rating question



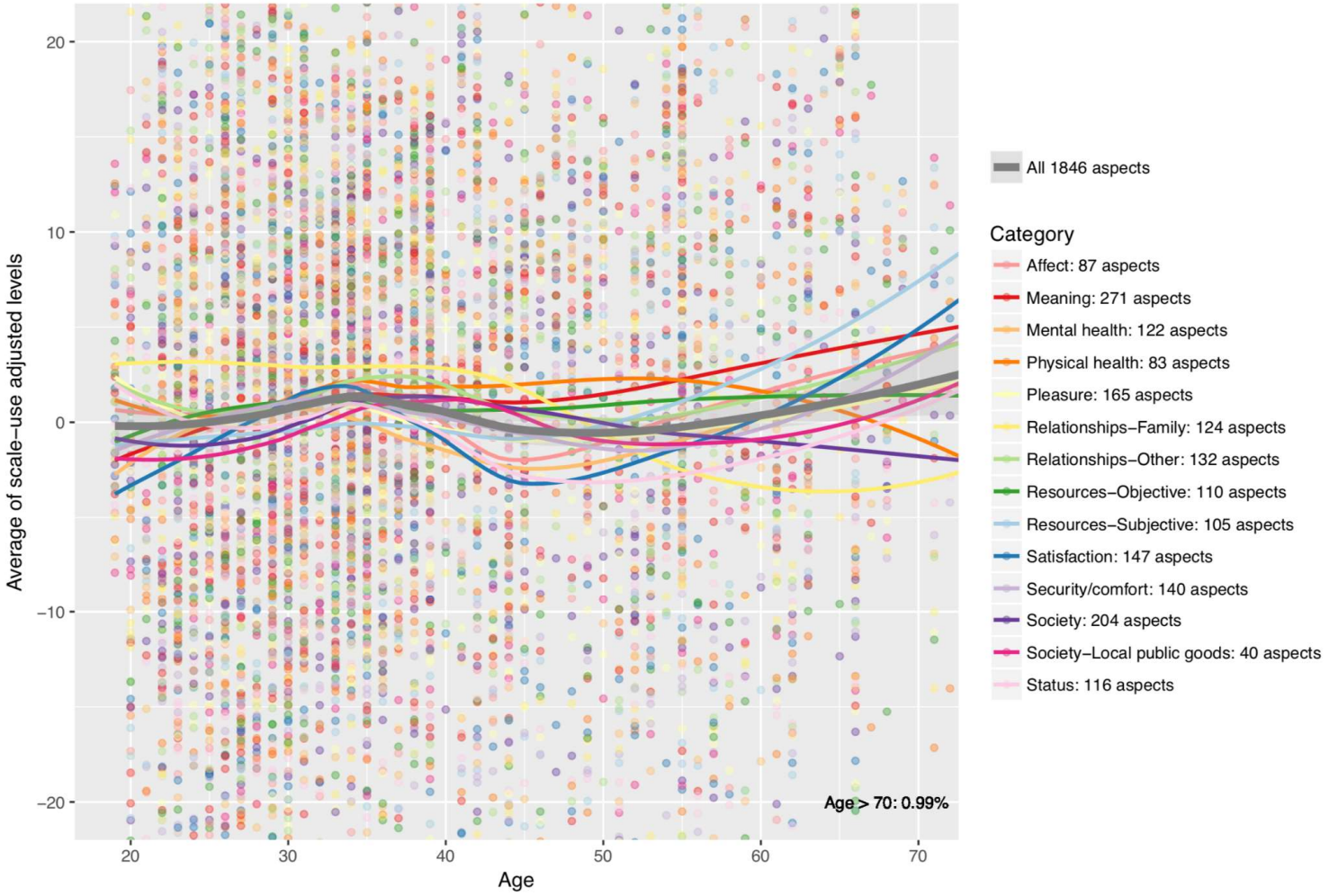
Empirical strategy (continued)

- Multi-dimensional approach offers…
  - Breadth to test for age trends
  - Depth to explore potential mechanisms
  - Stylized facts to help build/refine theories
- Caveats
  - Preliminary
  - Categorization a first pass
  - Cohort effects (e.g., Blanchflower & Oswald, 2008)
  - Sample selection (Heffetz & Rabin, 2013)
- A key "stylized fact" so far: **co-movement** in subjective consumption vectors

Results (scale-use adjusted): Men (N=390)



Results (scale-use adjusted): Women (N=606)



Optimizing theories generate co-movement from substitution possibilities and diminishing returns

- Market good consumption
  - Substitution possibilities: budget constraint
  - Budget constraint (after saving) + preferences → consumption vector
  - Typically assumes normality, predicts **co-movement**
    - Normality from "strong enough" diminishing marginal utility
- Subjective good consumption from household production
  - Life capital vector K
  - Exogenous factors Z
  - Substitution possibilities: consumption/investment (C/I) possibility frontier
  - Consumption possibility frontier(I,K,Z) + preferences → consumption vector
- Why co-movement in consumption?
  - Normality (diminishing MP as well as diminishing MU)
  - Co-movement in capital vector (diminishing returns again)

Back to theories of life-cycle WB movement

- Optimizing theories
  - Exogenous factors can generate exceptions to co-movement
    - Evidence? Women: Society and Relationships-Family
  - Time horizon theory
    - Longer time horizon → invest more
    - Evidence? Both: Some increases but Resources not decreasing
  - Time crunch theory
    - Age-specific investment opportunities → U-shape with long trough
    - Evidence? Men: Pleasure decreasing, then start of U-shape
- Theories with less optimization
  - Emotional regulation
    - Evidence? Women: Meaning strictly increasing
  - Unmet aspirations
    - Evidence? Resources-Objective flat

Discussion

- Current evidence keeps many theories in the running
  - Time horizon
  - Time crunch
  - Unmet aspirations
- Future research directions
  - Testing time crunch theory
    - Effect of kids
    - Careers with time-sensitive investment
  - Why/how does life-capital vector get depleted in middle age?

Thank you!

Selected citations:

- Benjamin, Daniel J., Ori Heffetz, Miles S. Kimball, and Alex Rees-Jones (2014). **Can Marginal Rates of Substitution Be Inferred From Happiness Data? Evidence from Residency Choices**. *American Economic Review,* 104(11): 3498–3528.
- Benjamin, Daniel J., Ori Heffetz, Miles S. Kimball, and Alex Rees-Jones (2012). **"What Do You Think Would Make You Happier? What Do You Think You Would Choose?"** *American Economic Review*, 102(5), 2083–2110.
- Benjamin, Daniel J., Kristen B. Cooper, Ori Heffetz, and Miles S. Kimball (2017). **"Challenges in Constructing a Survey-Based Well-Being Index."** *American Economic Review*, forthcoming.
- Benjamin, Daniel J., Ori Heffetz, Miles S. Kimball, and Nichole Szembrot (2014). **"Beyond Happiness and Satisfaction: Toward Well-Being Indices Based on Stated Preference."** *American Economic Review*, 104(9), 2698-2735.
- Blanchflower, Daniel, and Andrew Oswald (2008). **"Is well-being U-shaped over the life cycle?"** *Social Science & Medicine*, 66(8):1733-49.
- Carstensen, Laura L., Helene H. Fung, and Susan Turk Charles (2003). "**Socioemotional Selectivity Theory and the Regulation of Emotion in the Second Half of Life**." *Motivation and Emotion*, 27(2):103-123.
- Heffetz, Ori, and Matthew Rabin (2013). **"Conclusions Regarding Cross-Group Differences in Happiness Depend on Difficulty of Reaching Respondents."** *American Economic Review*, 103(7): 3001–3021.
- Schwandt, Hannes (2016). **"Unmet Aspirations as an Explanation for the Age U-shape in Wellbeing."** *Journal of Economic Behavior & Organization*. 122(1):75-87.
- Steptoe, Andrew, Angus Deaton, and Arthur Stone (2015). **"Psychological wellbeing, health and ageing."** *Lancet*. 385(9968): 640–648.
- Stone AA, Schwartz JE, Broderick JE, Deaton A (2010). "**A snapshot of the age distribution of psychological well-being in the United States**." *Proc Natl Acad Sci USA*, 107(22):9985–9990.