

Measuring Wellbeing in Time Diary Surveys

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Wellbeing Outline

- Wellbeing in context with other diary measures
- Why measuring wellbeing matters
- What exactly are we measuring?
- Overview of measuring wellbeing in diaries
- Comparability issues
- IPUMS Time Use wellbeing data plans

Diary Domain Considerations

- Measure key dimensions to explain behaviours and evaluate policies regulating behaviour
- Work with the way people tell stories (fit in narrative paradigms, relevant to participants)
- Streamline diary instrument – the more detail you ask and the more people have to think about how to answer domains, the higher the respondent burden, more burden = lower response rates and greater quality variations across samples

Key Daily Activity Domains

- Established fields in diary surveys
 - Activity (single, multi-tasked, overlapping)
 - Where (including inside or out of doors; mode of transport, more recently GPS)
 - With whom
- New key measures from linked devices as well as estimations
 - Physical activity
 - Environmental impact of behaviours

Key Daily Activity Domains

- Suggested domains no longer in fashion
 - For whom
 - Whether paid for or exchanged goods or services to undertake activity
 - Self-reported weather, physical activity
 - Specific media watched / read / heard
- New key diary domains
 - Using internet or smart device
 - SWB (emotional response to moments)

Wellbeing Domain

- Increasing recognition wellbeing matters, included in recent national surveys in France, Italy, United Kingdom, and USA
- Layard reports, OECD wellbeing guidelines
- Eurostat funding experiments to develop wellbeing standards for the Harmonised European Time Use Survey guidelines
- Discussed at UNSD this week in relation to UN time use survey guidelines

Why Care About Wellbeing?

- A good life requires health, adequate resources (wealth), and emotional/spiritual wellbeing
- Have standard cross-national statistics for health (infant mortality, healthy life expectancy) and wealth (GDP, GNP) - quest to add similarly comparable well-being measures
- Comparable overall subjective wellbeing (SWB) measures developed (how satisfied are you with your life in general 0=not at all, 10=completely)

Why Care About Wellbeing?

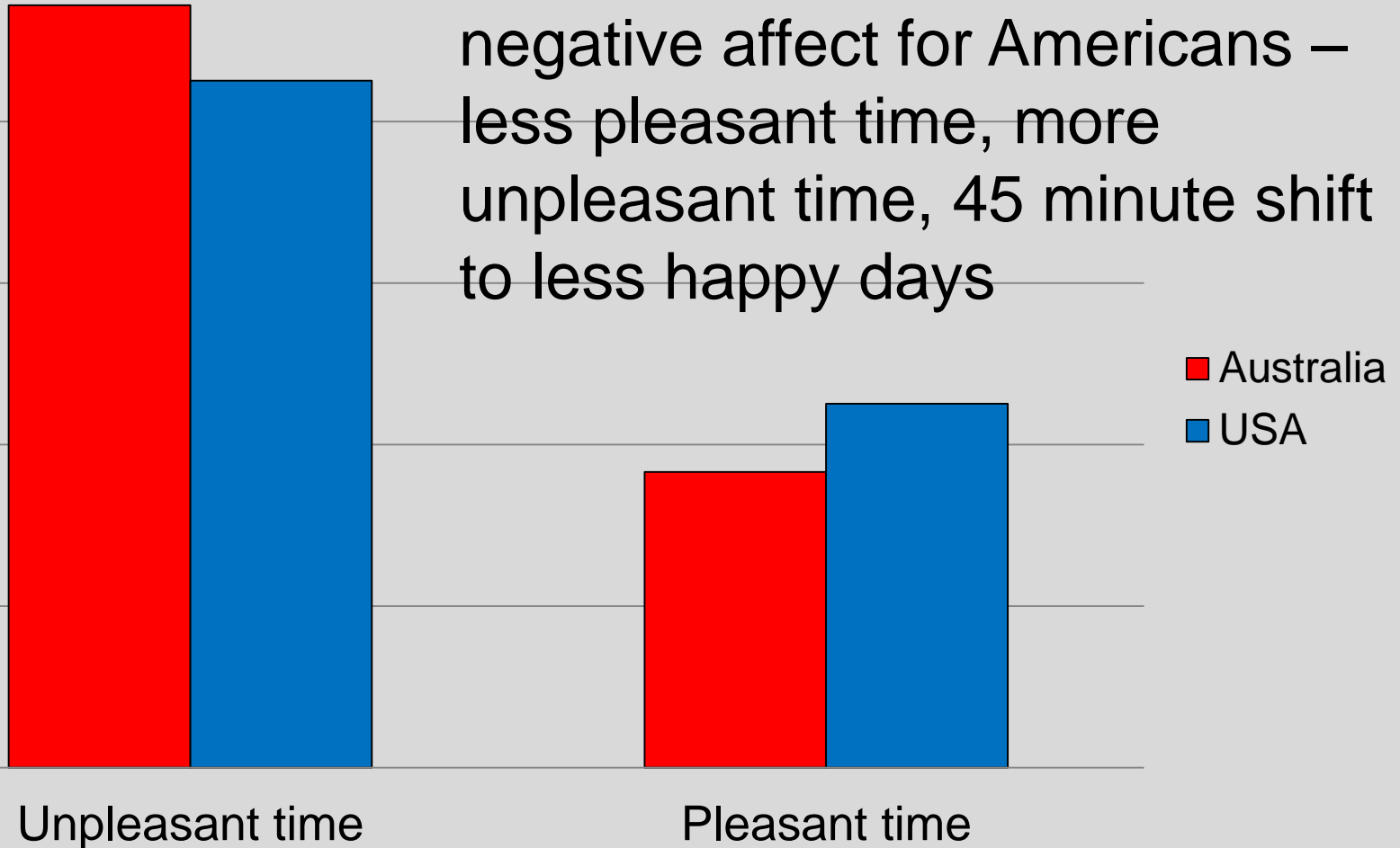
- Measuring emotional responses to behaviour patterns in context enable us to compare comparable measures across time
- Day to day wellbeing variations matter as much as overall (like weekly income/spending over a year & annual income/spending)
- We can test if changing specific behaviours makes people happier or more unhappy overall (diaries uniquely address this policy dilemma)

Why Care About Wellbeing?

- We can compute national wellbeing scores (from time diaries, this score reflects wellbeing across a society on any given day) – a companion measure to GDP (money does not always make people happier)
- Helps shape policies to reduce harm
- Provides natural experiment – we can overlay activity wellbeing scores of one country on the patterns of another country to see if people would be happier living like others

Work with Roger Patulny

Shifting to Australian lifestyles would lead to an overall negative affect for Americans – less pleasant time, more unpleasant time, 45 minute shift to less happy days



American's Potential Affect Changes By Activities

- Gain more **pleasant** personal care time
- Gain more **unpleasant** housework time
- Gain more **unpleasant** TV time alone
- Men gain **unpleasant** commuting
- **Lose** **pleasant** social time with friends and associates doing in-home leisure
- **Lose** **unpleasant** paid work time



Why Care About Wellbeing?

- Rating SWB is a part of our daily experience, has become part of narrative structure with which people describe their days
- SWB matters to people, testing of UK MCS, UKELS, Italian & French HETUS surveys found this domain meaningful to participants
- No impact on response rates in ATUS & French HETUS ATUS response rates: 2007: 52.5%; 2008: 54.6%; 2009: 56.6%; **2010: 56.9%**; 2011: 54.6%; **2012: 53.2%**
- Better response when SWB included in UKELS

What Does Wellbeing Measure?

- Some surveys link diary SWB to activities
 - Yields range of assessment of an activity for a group of people across contexts
 - Assumes behaviours key drivers of SWB
- Other surveys link diary SWB to moments
 - Assumes any diary domain can drive SWB
- Consider eating dinner outside at a restaurant with a companion

What Does Wellbeing Measure?

- Immediate, in the moment reactions (in which case the closer the report is to the event the better)



or

- Assessed reactions after people have had a chance to reflect on the reaction in context (in which case reporting within 48 hours of the event is fine)

What Does Wellbeing Measure?

- Scale based on collection of emotions
 - Works with limited sample of diary
 - + & - / health-related & pure emotion
 - More person-level **dimension** variation

or

- 1 or 2 measures of all activities
 - Captures sequence driven SWB, day rhythms
 - Captures SWB driven episode change
 - More person-level **day** variation
- More cross-time / nationally comparable?  

What Scale Best Reflects Wellbeing?

- Want to capture most policy relevant affect
- More variation when people report negative than positive emotions
- 5, 7, 10, 11 scale points?
- 1 to n 0 to n -n → 0 → +n
- See full scale on diary, or
- Only see your selection?
- No consensus on how to compare designs

Key Developers of Diary SWB

- **Post-diary activity questions** - William Michelson, Frank Stafford, F Thomas Juster
- **ESM** – Mihaly Csikszentmihalyi, Jiri Zuzanek
- **Diary context column** – John Robinson, Jonathan Gershuny
- **Day Reconstruction Method** - Alan Krueger, Daniel Kahneman
- **Smart device diary emoticons** - Kai Ludwigs

American's Use of Time 1975-76

- Rate 22 activities on 0 (dislike a great deal) to 10 (enjoy a great deal) scale
- How much do you enjoy:
 - 1) Cleaning the house;
 - 2) Cooking;
 - 3) Repairs around the house;
 - 4) Making things for the house;
 - 5) Gardening;
 - 6) Grocery shopping;
 - 7) Other shopping;
 - 8) Your job;
 - 9) Looking after your children;
 - 10) Playing with your children;
 - 11) Talking with your children;
 - 12) Taking children places;
 - 13) Talking with your friends;
 - 14) Entertaining at home;
 - 15) Going to church;
 - 16) Volunteering;
 - 17) Watching TV;
 - 18) Reading papers;
 - 19) Reading books or magazines;
 - 20) Playing sports or exercising;
 - 21) At cinema, live sport or event;
 - 22) Trips and outings

Single, Whole Diary Measures

- American's Use of Time 1985 – how much did you enjoy this activity, 0=disliked a great deal; 10=liked a great deal
- 1986-87 Hungarian national time use survey
- 2008-09 Italian Harmonised European TUS
- 2009-10 French HETUS 7 point scale (- 0 +)
- 2014-15 UK Everyday Life Survey 7 point scale
- 2014-15 (aged 14) UK Millennium Cohort Survey 5 point scale (mixed mode, all options shown on paper & web modes; only selection on app mode)

2009-10 French HETUS Diary

15. Question F8 below should be included in the time-use diary filled out by respondents.
See below for an example.

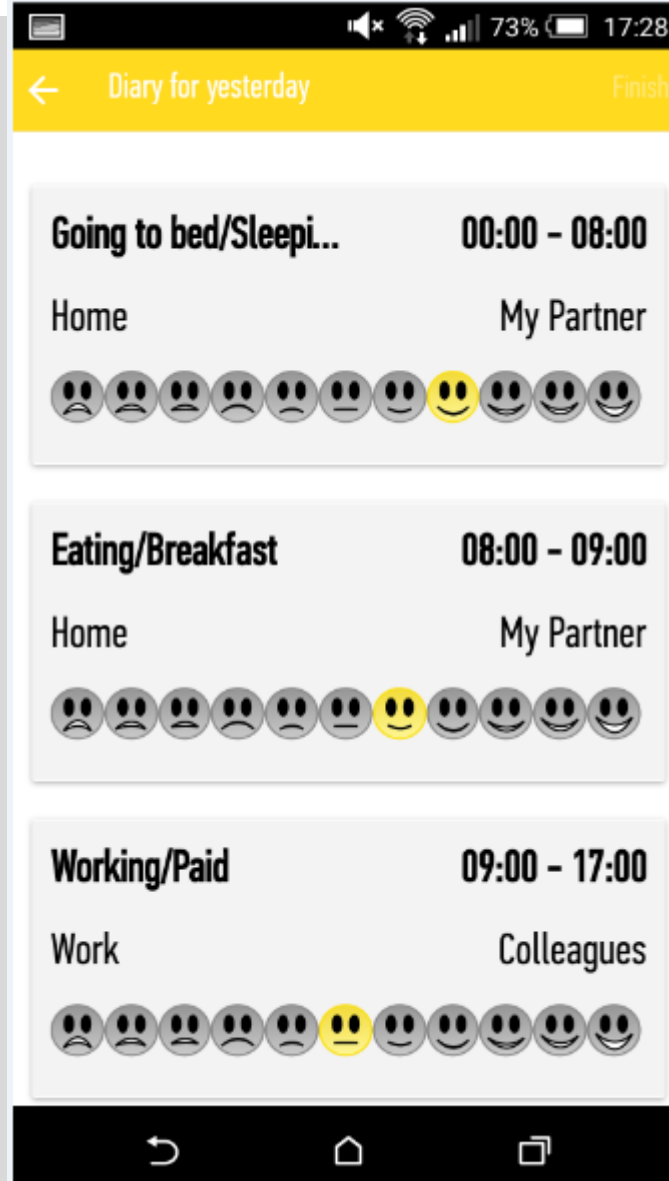
16. F8. Was this moment pleasant or unpleasant? [from -3: very unpleasant to +3: very pleasant]

	Qu'avez-vous fait durant les 3 heures qui ont précédé la visite de l'enquêteur ?	Faisiez-vous autre chose en même temps ?	Était-ce un moment agréable ou désagréable ? (de -3 : très désagréable à +3 : très agréable)
..... h 00			-3 -2 -1 0 +1 +2 +3
10			-3 -2 -1 0 +1 +2 +3
20			-3 -2 -1 0 +1 +2 +3
30			-3 -2 -1 0 +1 +2 +3
40			-3 -2 -1 0 +1 +2 +3
50			-3 -2 -1 0 +1 +2 +3
..... h 00			-3 -2 -1 0 +1 +2 +3
			-3 -2 -1 0 +1 +2 +3

Day 1
Time: 7am – 10am

Where were you? Location, or mode of transport	Were you alone or with somebody you know? Mark all relevant boxes							How much did you enjoy this time? 1 =not at all 7 =very much
	People who live with you						Others you know	
	Alone	Spouse / partner	Mother	Father	Child aged 0-7	Other person	Others you know	
<i>At home</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>on foot</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1

Happiness R.O. App Diary



Multiple, Sampled Element Measures

- 2006 Princeton Affect and Time Use Survey (PATS) (3 random 15 minute intervals)
- 2010, 2012, 2013 American Time Use Survey Health and well-being modules (3 random activity episodes)
- 7 point scales
 - 2 + questions: how a) happy; b) meaningful
 - 4 – questions: how c) tired; d) stressed; e) sad; f) much pain
- Unhappiness (U) index: degree to which unhappy answers outweigh happy answers

ATUS Diary With Affect Questions

Time	Main Activity	Where	Who with	Happy	Sad	Stressed	U-index
4am to 7	Sleeping	Home	Partner				
7 to 7.30	Showering	Home	Alone	4	2	2	0
7.30 to 8am	Eating breakfast	Home	Partner				
8 to 9am	Commuting	Train	Strangers				
9am to 12 midday	Working	At work	Colleague				
12 to 1	Eating lunch	At work	Alone	5	1	1	0
1 to 5 pm	Working	At work	Colleague	3	2	4	1
5 to 6.30pm	Drinking socialising	Pub	Friends				
6.30 to 7pm	Cooking	Home	Partner				
7 to 7.30pm	Eating dinner	Home	Partner				
7.30 to 9pm	Watching TV	Home	Partner				
9 to 9.30	Reading	Home	Partner				
9.30 to 4AM	Sleeping	Home	Partner				

ATUS Wellbeing Module Notes

- Sleep, personal care, can't remember & none of your business activities not selected for asking the ATUS SWB questions (a contrast with the PATS, ESM and all activity surveys)
- Coding error means that in 2010 and 2012, the last activity in the diary under-selected, even if an eligible activity for selection
- Make sure you use the May 2014 or later download to make use of weights adjusting for this error

ATUS Wellbeing Module Notes

- Wellbeing data files is at an activity level – separate from person & household level variables, maps only to the sampled activities
- PATS only other survey to be added in future to IPUMS Time Use suite of extracts that is organised this way
- The IPUMS Time Use Extract System make mapping the wellbeing scores to the episode level data for a hierarchical extract easy

ATUS Wellbeing Module Notes

- Possible to follow Patulny-Fisher technique matching 2006 PATS SWB scores to 2006 Australian data to match ATUS scores to unscored activities - separately applying calculations for different demographic groups and adjusting for season (with the exception of the unobserved activities)
- Not possible to do this directly in IPUMS Time Use, but can do this in a hierarchical file extract

Comparability Issues

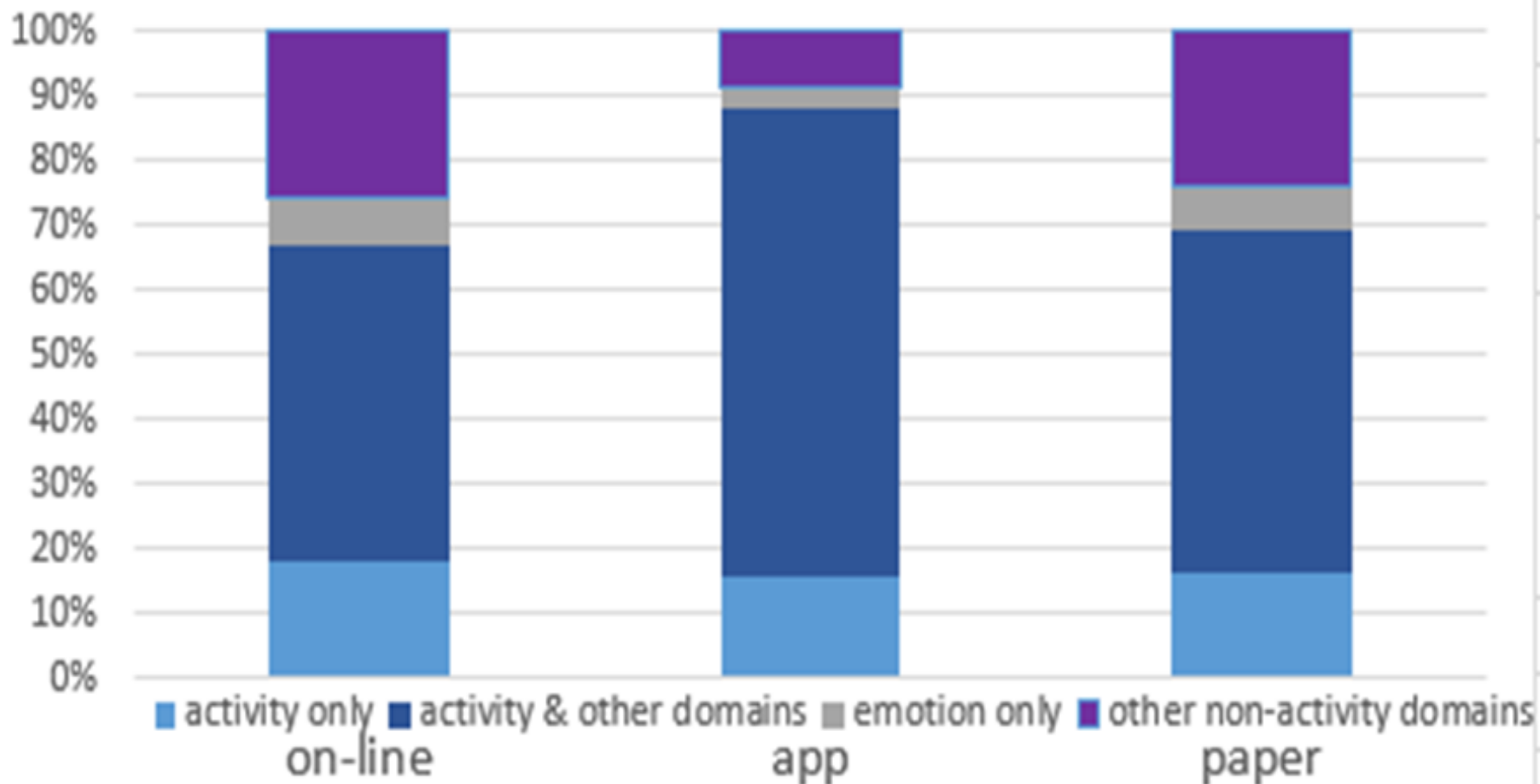
- Challenges (as range of issues not known) and opportunities (to contribute to the literature setting the standards)
- Some work by Gershuny and Robinson – useful to check range of variability across two scales for a range of activities by context (location and season), age, sex, and employment groups before choosing how to collapse or disaggregate one scale (or amend both scales)

Comparability Issues

- Unknown how telling respondents the diary covers activities, context and SWB changes their thinking as they organise their narrative
- Adding a SWB domain DRM surveys (PATS, ATUS) does not change episode counts
- Adding a SWB domain for all events increases total episodes slightly – need to think carefully about applying affect estimations to a survey that did not include this domain

2014-15 UK Aged 14 MCS

% of episodes by diary mode



Comparability Issues

- The extent to which some affect questions are functional equivalents (or not) remains unclear
- Some questions (tired, stressed) cover more health-related dimensions, while others (happy, found event pleasant) are more purely emotional
- Possible to really enjoy an activity but also be very tired or very stressed – all dimensions need not be in the same direction

Comparability Test Opportunity

- 2014-15 UK ELS survey spans 1 year, then an additional four months
- In first 6 months, a subsample of diaries included the SWB column
- As response rates were higher when diaries included this column, in the second half of the survey and the additional four months, all diaries included the affect column
- Data collection overlaps Age 14 UK MCS

Wellbeing in IPUMS Time Use

- 2010, 2012, 2013 ATUS Health & Wellbeing modules in ATUS-X now
- With next two grants – 10 years - (if funded)
 - Add PATS survey, including add SWB
 - 1985 USA (in AHTUS-X & MTUS-X now) will have SWB added
 - 2009-10 French & 2014-15 UK will be added by 2017; SWB planned for future
 - 1986 Hungarian and 2008-09 Italian added with SWB in future

Wellbeing in IPUMS Time Use

- With next two grants – 10 years - (if funded)
 - Plan to add new HETUS surveys as released, Eurostat considering adding SWB dimension to guidelines
 - No immediate plans to add MCS in next six years, but may seek to add cohort surveys in a future round

Thank you

Comments & feedback welcome

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