

A New Online Tool for Valuing Health States: Eliciting Personal Utility Functions for the EQ-5D-5L (OPUF)

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Preference elicitation techniques

- Time trade-off (TTO)
- Discrete choice experiment (DCE)
- Standard gamble (SG)
- Best-Worst scaling (BWS)
- ...

Decompositional

12345

I have no problems in walking about

I have slight problems washing or dressing myself

Moderate problems with usual activities

I have severe pain or discomfort

I am extremely anxious or depressed

Decompositional

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⇒ 0.3

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EQ-5D-5L Scoring Algorithm

	Partial value
Mobility	
Slight	0.058
Moderate	0.076
Severe	0.207
Unable	0.274
Self-care	
Slight	0.050
Moderate	0.080
Severe	0.164
Unable	0.203
Usual activities	
Slight	0.050
Moderate	0.063
Severe	0.162
Unable	0.184
Pain/discomfort	
Slight	0.063
Moderate	0.084
Severe	0.276
Extreme	0.335
Anxiety/depression	
Slight	0.078
Moderate	0.104
Severe	0.285
Extreme	0.289

Compositional

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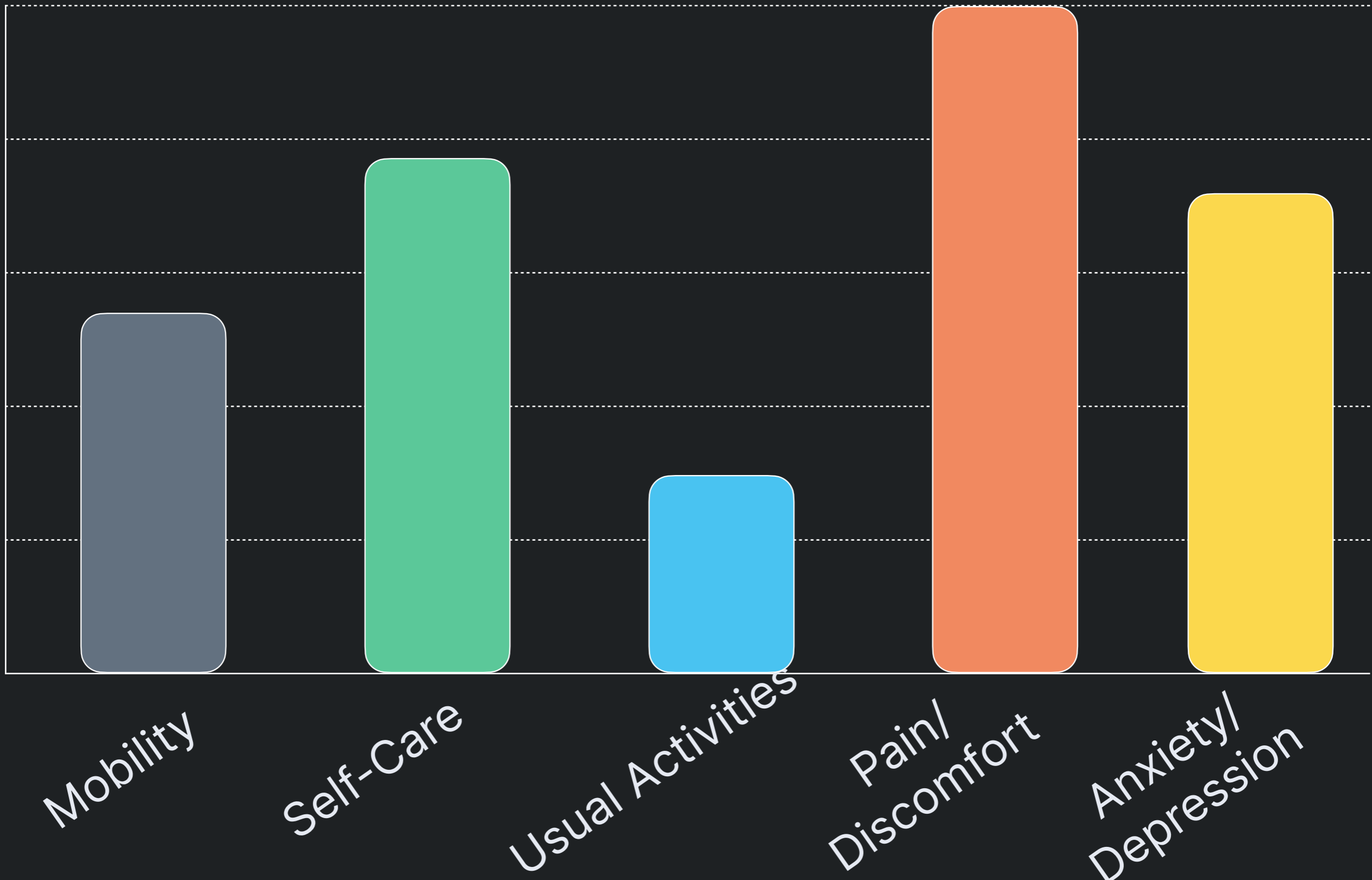
⇒ 0.3

EQ-5D-5L Scoring Algorithm

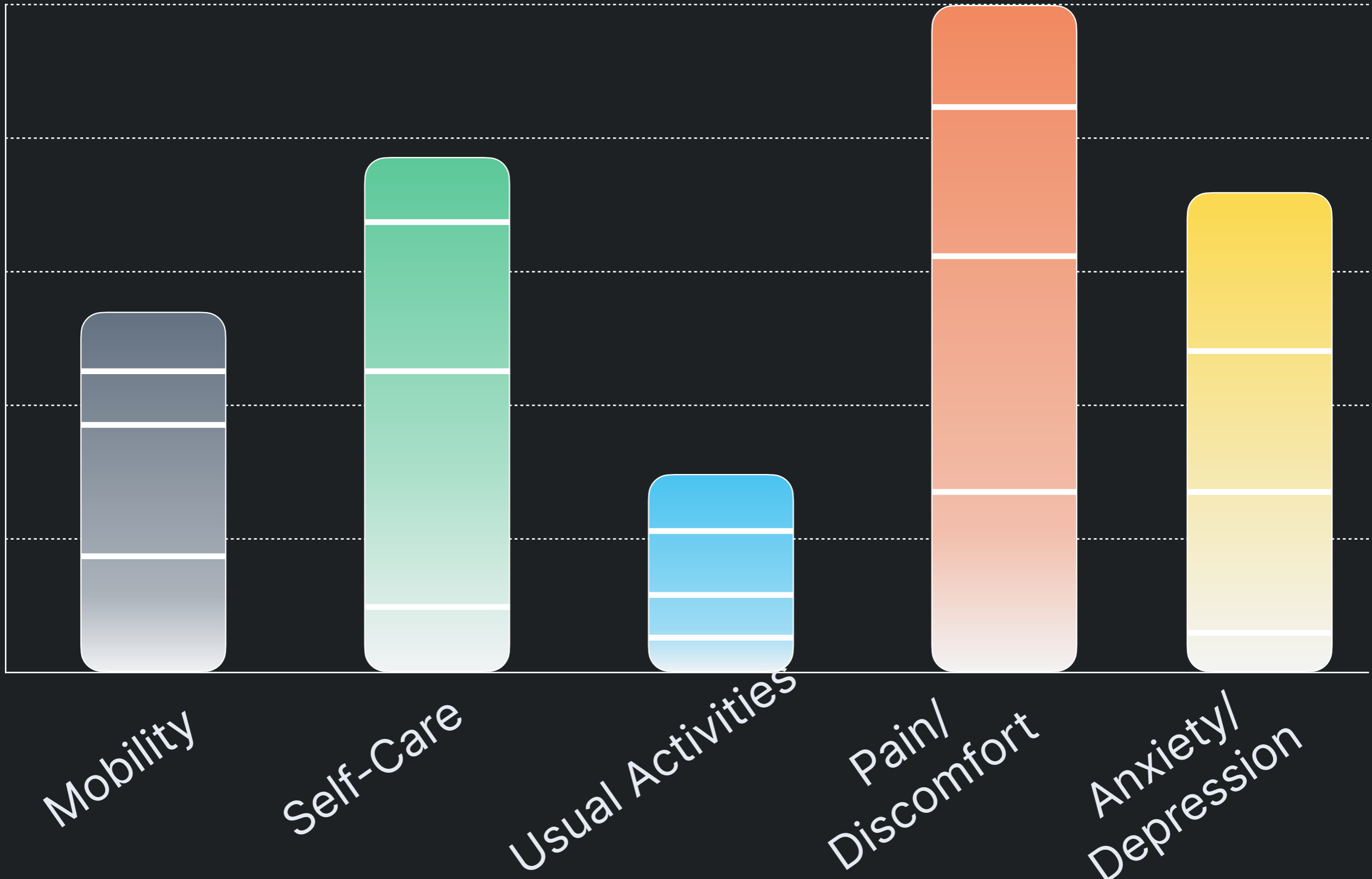
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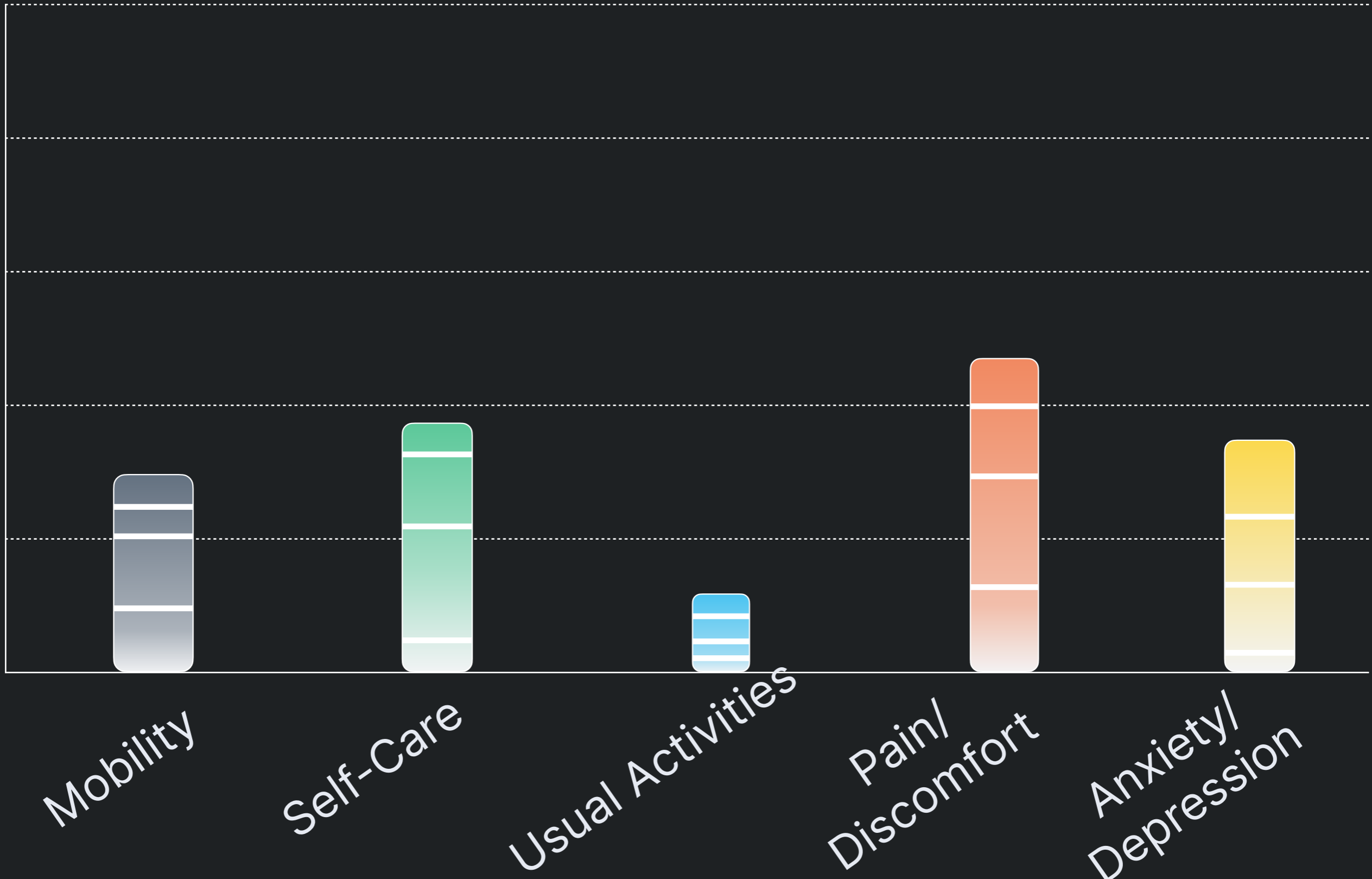
1 Criteria Weighting



2 Level Rating



3 Anchoring



PUF → OPUF

1) Warm-up

2) Ranking

3) Swing rating

4) Level rating

5) DCE-Validation

6) PoD

7) DCE-Interaction

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ORIGINAL PAPER



A new method for valuing health: directly eliciting personal utility functions

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Abstract

Background Standard methods for eliciting the preference data upon which ‘value sets’ are based generally have in common an aim to ‘uncover’ people’s preferences by asking them to evaluate a subset of health states, then using their responses to infer their preferences over all dimensions and levels. An alternative approach is to ask people directly about the relative importance to them of the dimensions, levels and interactions between them. This paper describes a new stated preference approach for directly eliciting personal utility functions (PUFs), and reports a pilot study to test its feasibility for valuing the EQ-5D.

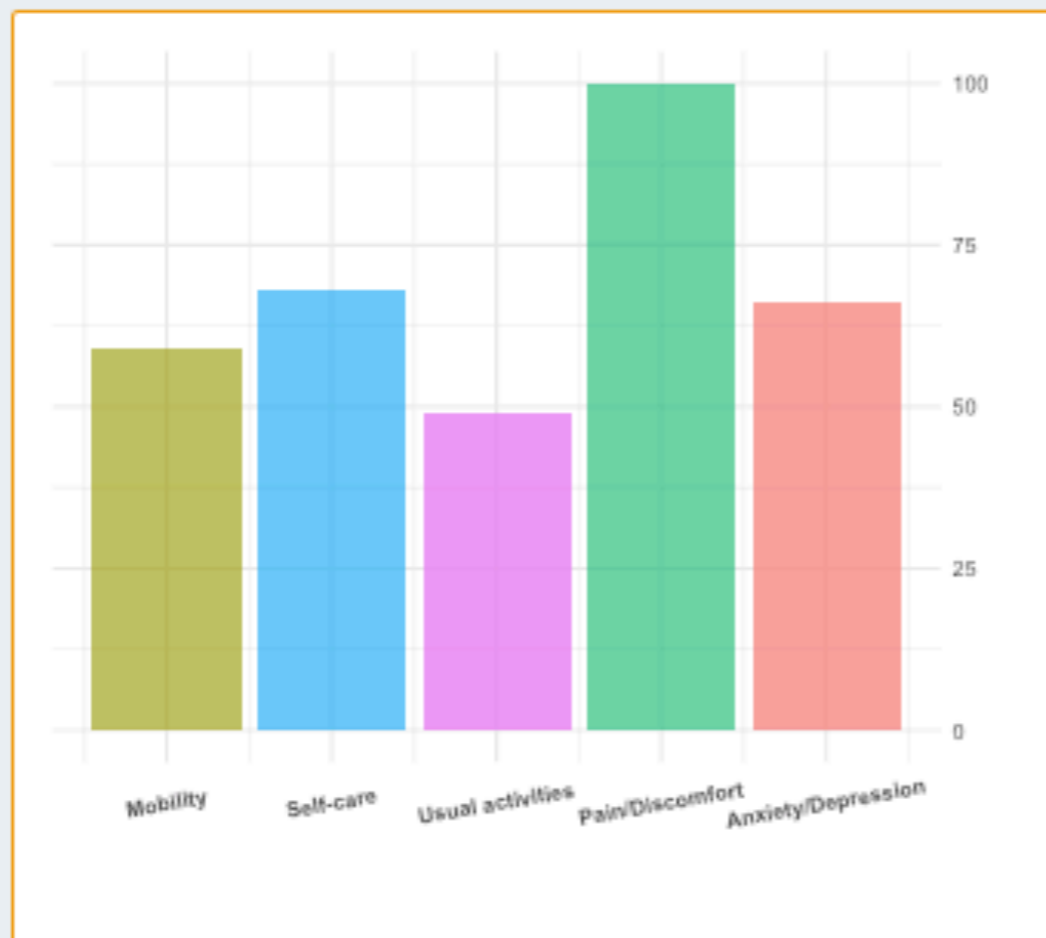
Methods A questionnaire was developed, designed to directly elicit PUFs from general public respondents via computer-assisted personal interviews, with a focus on helping respondents to reflect and deliberate on their preferences. The questionnaire was piloted in England.

Results Seventy-six interviews were conducted in December 2015. Overall, pain/discomfort and mobility were found to be the most important of the EQ-5D dimensions. The ratings for intermediate improvements in each dimension show heterogeneity, both within and between respondents. Almost a quarter of respondents indicated that no EQ-5D health states are worse than dead.

Discussion The PUF approach appears to be feasible, and has the potential to yield meaningful, well-informed preference data from respondents that can be aggregated to yield a value set for the EQ-5D. A deliberative approach to health state valuation also has the potential to complement and develop existing valuation methods. Further refinement of some elements of the approach is required.

Personal EQ-5D 5L Value Assessment

- Start
- Tool
- Self assessment
- Dimension ranking
- Dimension swing rating
- Level rating
- Life and Death
- Time trade-off
- Demographic info
- Results



Mobility

Moving from:
I am unable to walk about

to:
I have no problems in walking about

59

Usual activities

Moving from:
I am unable to do my usual activities

to:
I have no problems doing my usual activities

49

Pain/Discomfort

Moving from:
I have extreme pain or discomfort

to:
I have no pain or discomfort

100

WELCOME

Personal Value of Health Online Tool

This is a demo version of the Online PUF survey instrument. Please feel free to start the survey, explore the tool, and try the different tasks.

The following web pages will guide you through a series of questions and exercises. In some questions, we will ask you about your own health, and to compare different health problems. In other questions, we will ask you to make choices between different scenarios involving poor health, disability, and death. There are no right or wrong answers - it's just about your own perspective.

The survey will take about 15 minutes to complete.

At the end of the survey, all your responses will be combined. You can then compare your personal results to the responses of the general population.

This is only a demo version. Your responses will not be used for the research project. All your data will be deleted at the end of this session, i.e. when you close this window.

Thank you very much for your interest in this research project!

Start the survey

<https://eq5d5l.me>

Want to receive updates?

If you would like to receive updates about this research project, want to collaborate, or if you have any other questions, please contact:

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University of Sheffield
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(Preliminary) results: UK Study

- 1,000 participants
 - Representative UK sample (age, sex, ethnicity)
 - 126 participants were excluded
- ⇒ Data from n=874 were included in the analysis

1 Criteria Weighting

Note: 100 points are assigned to Mobility - This is fixed. Use it as a yardstick to rate the other areas

- 100 points means the area is as important as Mobility
- 50 points means it is half as important
- 0 points means it is not important at all

MOBILITY
How important is this improvement to you?
I am unable to walk about → I have no problems in walking about
0 100

ANXIETY/DEPRESSION
How important is this improvement to you?
I am extremely anxious or depressed → I am not anxious or depressed
0 79 100

2 Level Rating

Health Scale

No Problems → 100%
 Slight Problems → 80%
 Moderate Problems → 50%
 Severe Problems → 30%
 Extreme Problems → 0%

3 Anchoring

Scenario A

- I am unable to walk about
- I am unable to wash or dress myself
- I am unable to do my usual activities
- I have extreme pain or discomfort
- I am extremely anxious or depressed

Scenario B

Being dead

Which is better?

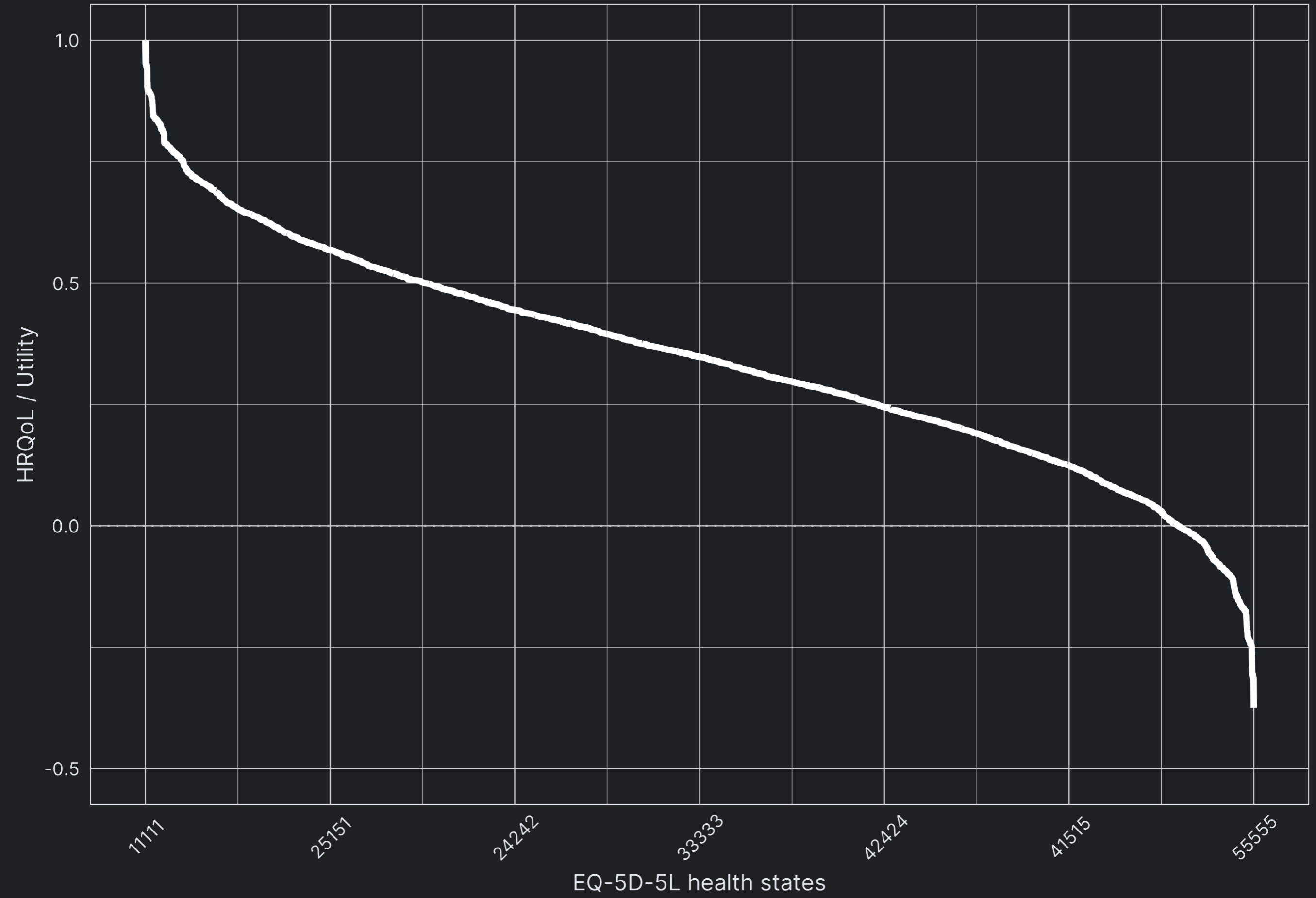
Scenario A Scenario B

Personal EQ-5D-5L Value Set	
Mobility	
Lvl 2	0.055
Lvl 3	0.123
Lvl 4	0.213
Lvl 5	0.283
Self-Care	
Lvl 2	0.055
Lvl 3	0.124
Lvl 4	0.213
Lvl 5	0.282
Usual Activities	
Lvl 2	0.048
Lvl 3	0.108
Lvl 4	0.186
Lvl 5	0.248
Pain/Discomfort	
Lvl 2	0.060
Lvl 3	0.136
Lvl 4	0.234
Lvl 5	0.309
Anxiety/Depression	
Lvl 2	0.049
Lvl 3	0.111
Lvl 4	0.192
Lvl 5	0.254

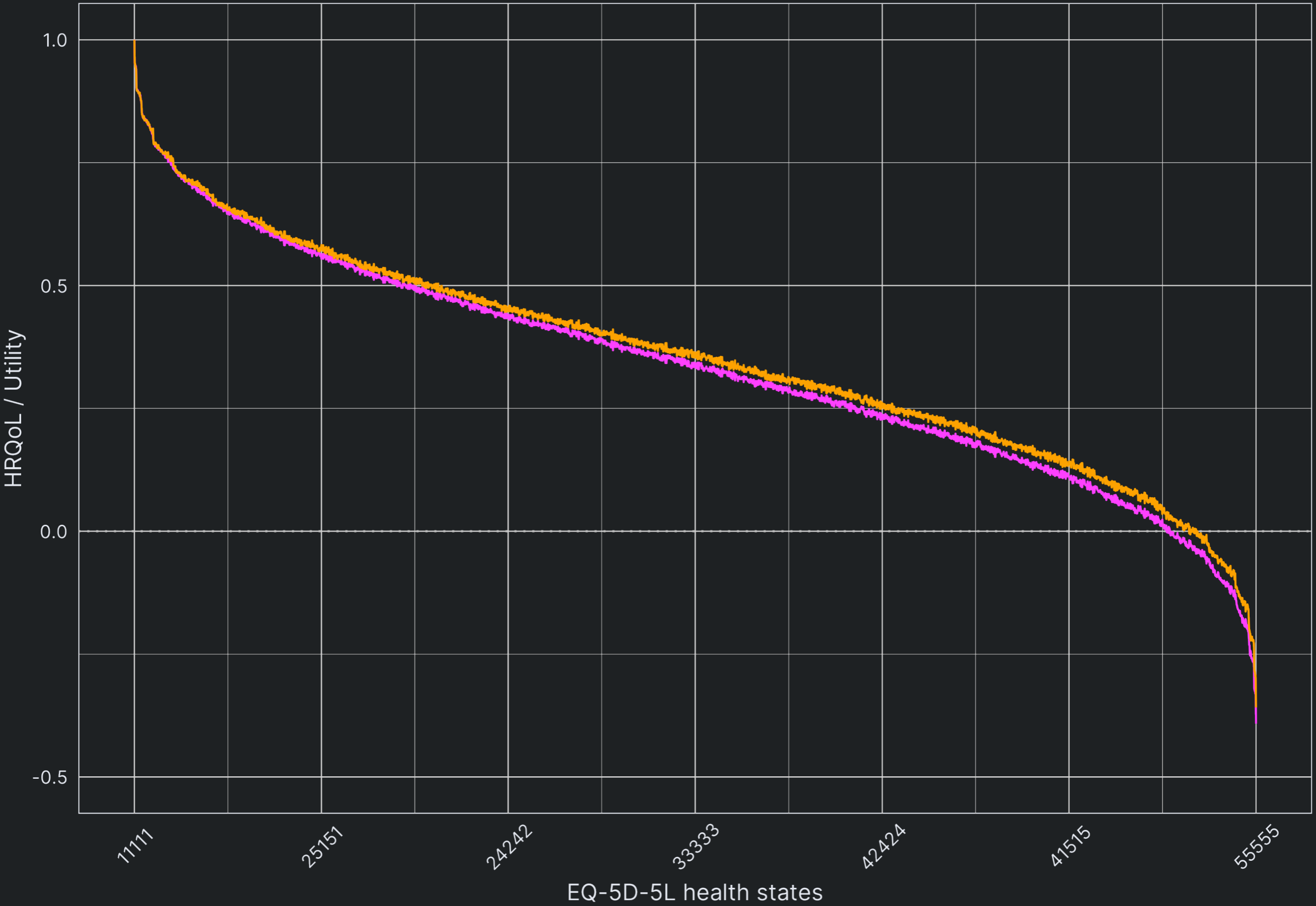
EQ-5D-5L social value set (n=874)

	Mean (95%CI)
<u>Mobility</u>	
Lvl 2	0.055 (0.053; 0.059)
Lvl 3	0.123 (0.121; 0.130)
Lvl 4	0.213 (0.210; 0.223)
Lvl 5	0.283 (0.279; 0.296)
<u>Self-Care</u>	
Lvl 2	0.055 (0.054; 0.058)
Lvl 3	0.124 (0.122; 0.129)
Lvl 4	0.213 (0.210; 0.222)
Lvl 5	0.282 (0.278; 0.294)
<u>Usual Activities</u>	
Lvl 2	0.048 (0.047; 0.051)
Lvl 3	0.108 (0.106; 0.113)
Lvl 4	0.186 (0.184; 0.194)
Lvl 5	0.248 (0.245; 0.259)
<u>Pain/Discomfort</u>	
Lvl 2	0.060 (0.059; 0.063)
Lvl 3	0.136 (0.134; 0.141)
Lvl 4	0.234 (0.231; 0.243)
Lvl 5	0.309 (0.305; 0.322)
<u>Anxiety/Depression</u>	
Lvl 2	0.049 (0.048; 0.053)
Lvl 3	0.111 (0.110; 0.117)
Lvl 4	0.192 (0.189; 0.200)
Lvl 5	0.254 (0.250; 0.266)

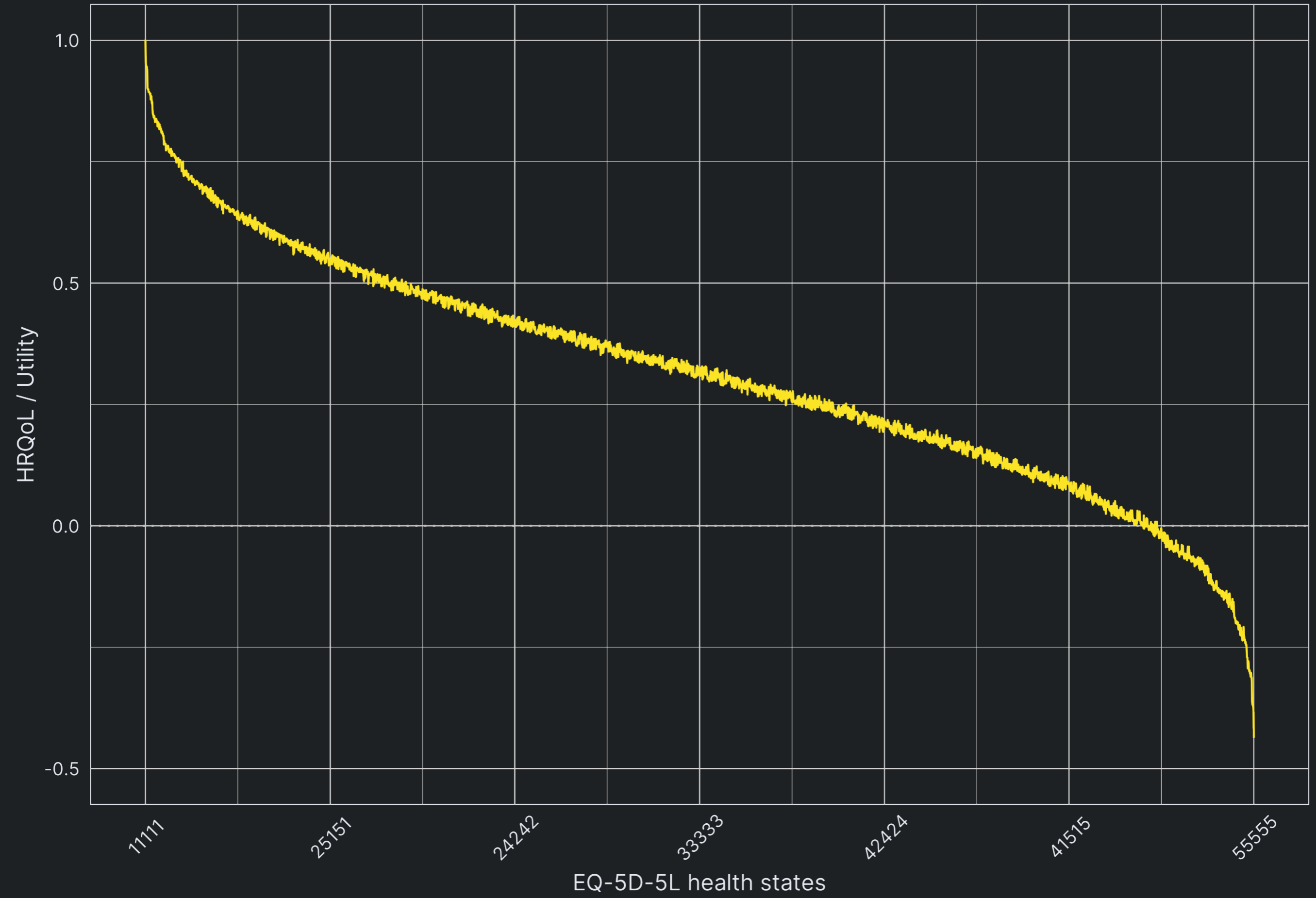
— Social value function (n=874)



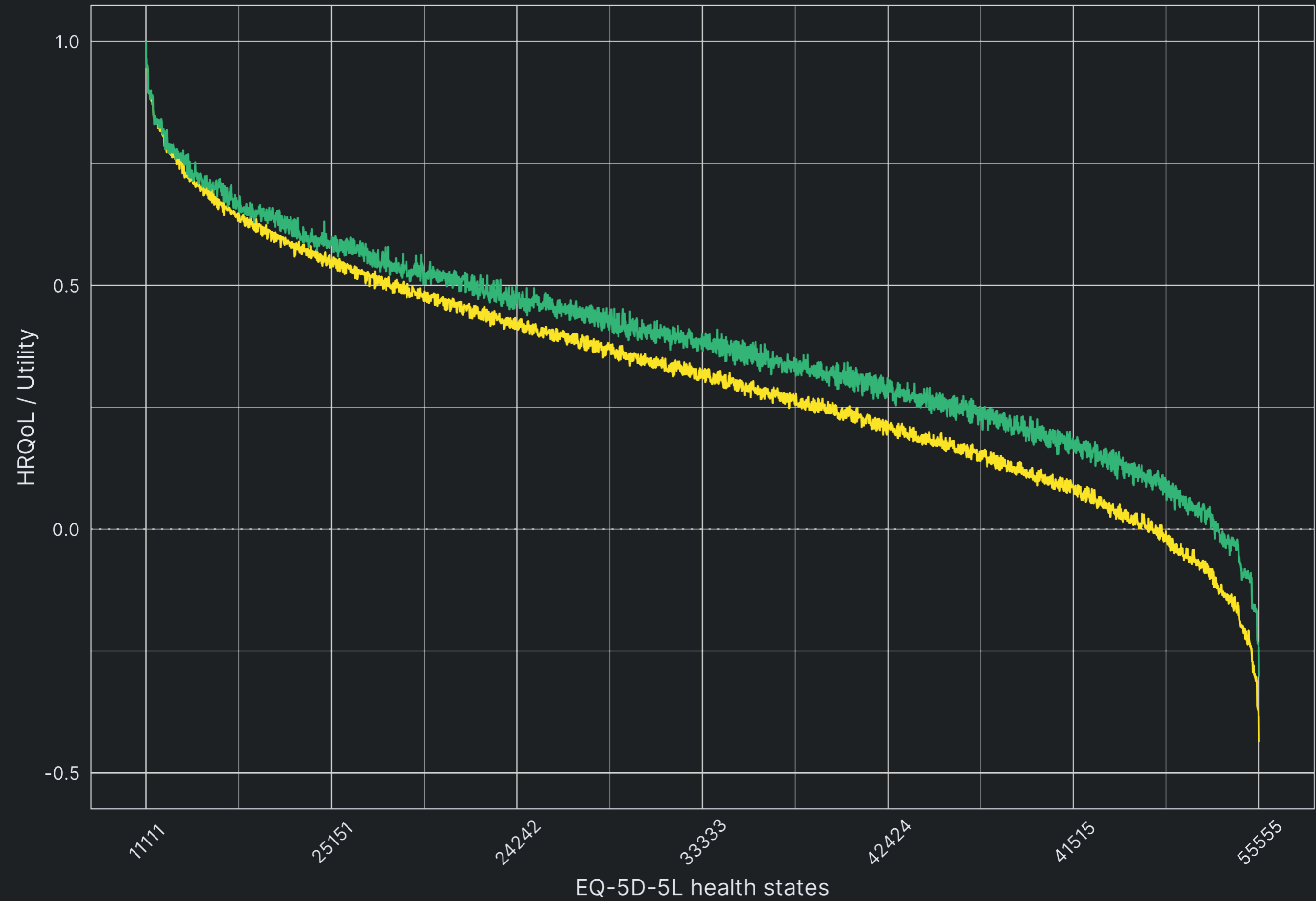
Sex F M



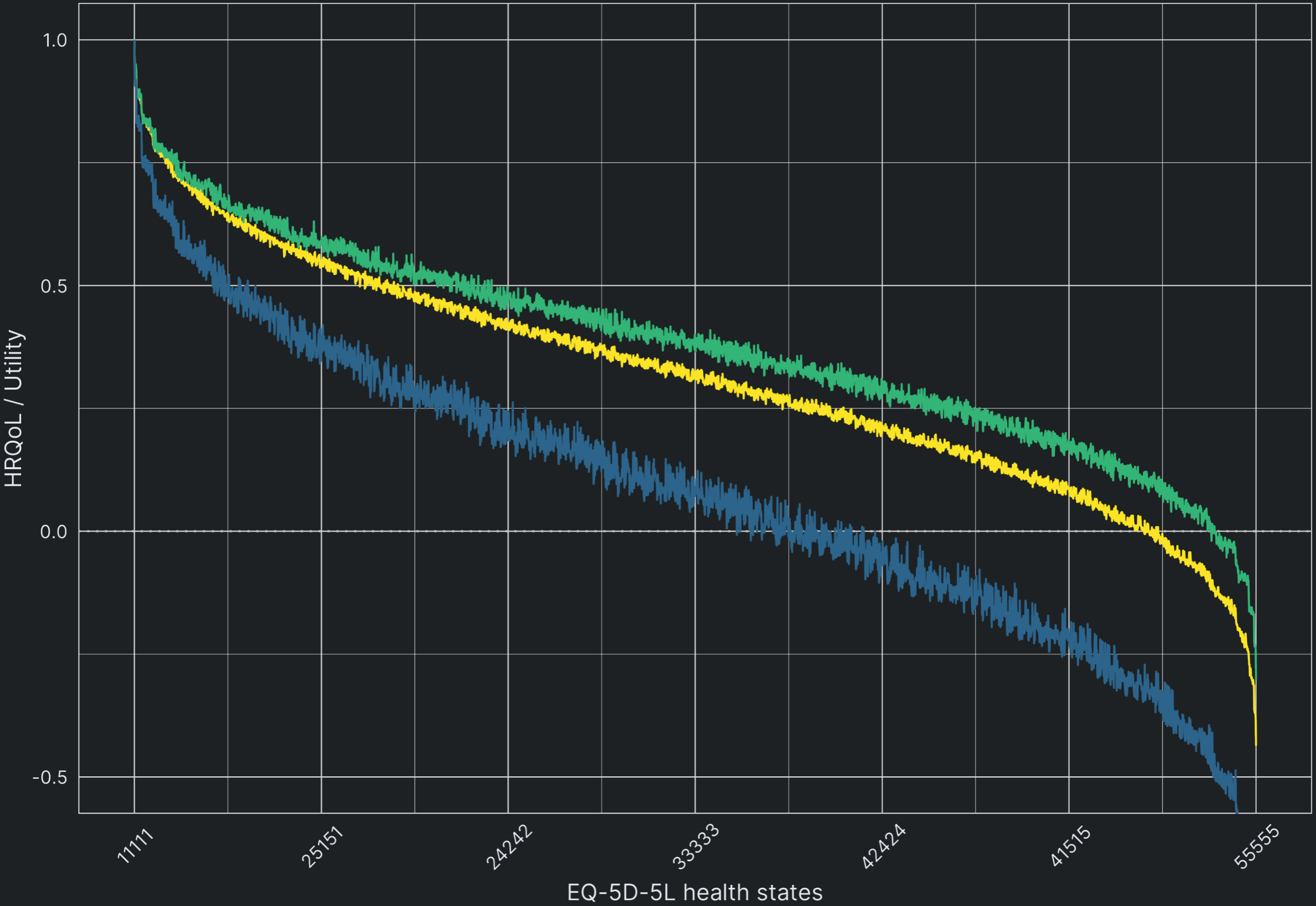
F 30-40 w/ uni degree (n=67)



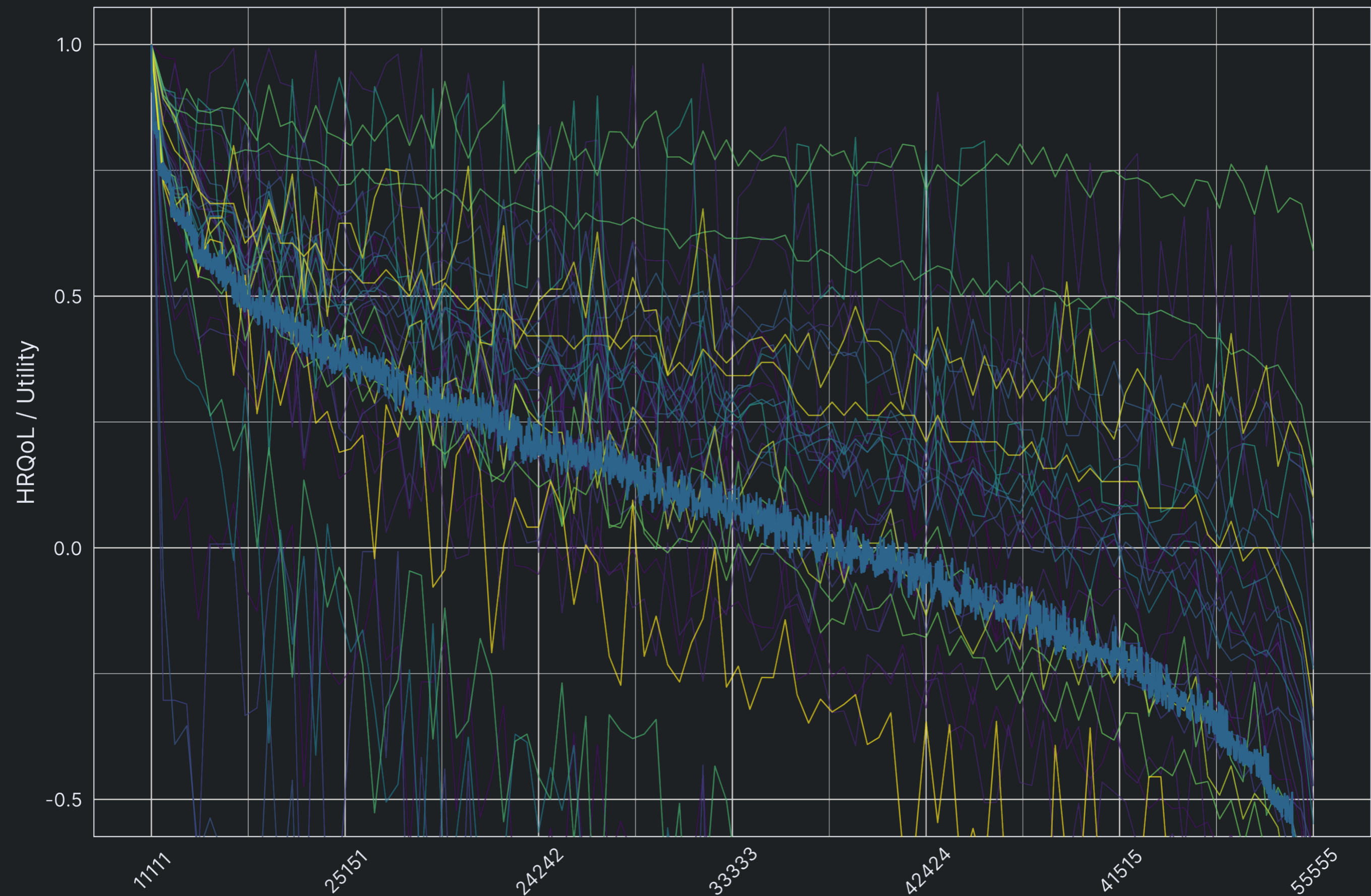
— F 30-40 w/ uni degree (n=67) — Healthcare professionals (n=76)



— F 30-40 w/ uni degree (n=67) — Healthcare professionals (n=76) — AD lvl 4-5 (n=37)



— AD lvl 4-5 (n=37)



* simplified illustration

EQ-5D-5L health states

DCE Validation

Consistency overall: **78.5%**

“Errors” per participant

0 **52%** (453/874)

1 **34%** (299/874)

2 **12%** (101/874)

3 **2%** (21/874)

“Consistency” by difficulty

Easy (>0.3) **82%** (325/395)

Moderate (0.2-0.3) **78%** (200/257)

Difficult (0.1-0.2) **76%** (227/299)

Hard (<0.1) **68%** (143/209)

User Feedback

“very interesting and very thought provoking”

“an eye-opener”

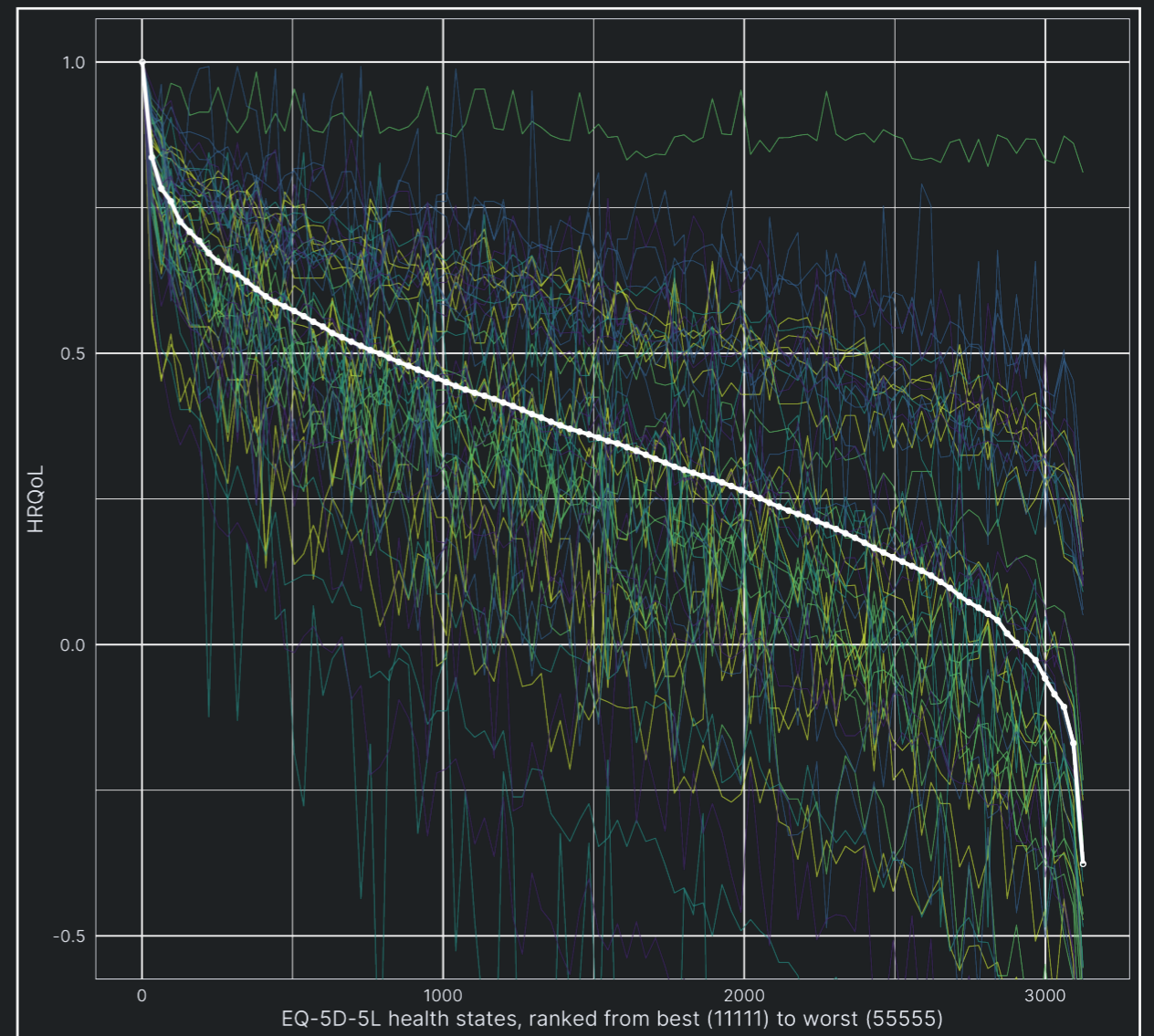
“I found this to be the best survey i have ever done, it was easy to follow thought provoking but highly enjoyable”

“[...] It certainly made me think and weigh up my answers. Thank you!”

“I found the survey interesting, and quite thought-provoking [...]”

The OPUF Tool

- Feasibility
- Efficiency
- Transparency
- Assumptions
- Acceptability?



eq5d5l.me

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🏠 bitowaqr.github.io/

🐦 @waqr

