Online Appendix: Is Utiltiy Concave?

Nathan Mather[*]

October 12, 2022

Table of Contents

1 Full Centiment Survey

Centiment Survey

The instructions where first written alone on an initial page and required respondents to wait five seconds before continuing.

Instructions copy ***Instructions Repeated (if needed for reference):***

 Imagine yourself in each of the following situations.

 Consider if each situation would be painful for you and if yes, how painful it would be.

 Then, enter the MOST you would pay in U.S. dollars to completely and immediately eliminate any pain caused by the situation, as if the event described never happened.

Q1 Imagine you have a minor cut on your finger and you accidentally get lemon juice in the wound.

○ $ _____

Q2 Imagine you pick up a hot pot by accidentally grabbing its equally hot handles.

○ $ _____

Q3 Imagine you shake hands with someone who has a normal grip.

○ $ _____

Q4 Imagine you burn your tongue on a very hot drink.

○ $ _____

Q5 Imagine you bump your shin badly on a hard edge, for example, on the edge of a glass coffee table.

○ $ _____

Q6 Imagine you bump your elbow on the edge of a table ("funny bone"). Would you pay $X to completely and immediately eliminate any pain caused by this situation, as if it never happened?

○ Yes, I would pay $X

○ No, I would not pay $X

NOTE: X is chosen Randomly from (0.05   0.10   0.25   0.50   1   1.25   1.50   1.75   2 3   4   5 7 10 15 20 25 35 50 100) and a single value is displayed

Q7 Imagine you accidentally bite your tongue or cheek badly while eating. Would you pay $X to completely and immediately eliminate any pain caused by this situation, as if it never happened?

○ Yes, I would pay $X

○ No, I would not pay $X

NOTE: X is chosen Randomly from (0.10   0.25   0.50   0.75   1   2   3   4   5   6   8   10   15   20 25   35   50   75 100 200) and a single value is displayed

Q8 Imagine you slam your finger in a drawer. Would you pay $X to completely and immediately eliminate any pain caused by this situation, as if it never happened?

○ Yes, I would pay $X

○ No, I would not pay $X

NOTE: X is chosen Randomly from 0.5   1   2   3   4   5   6   8   10   15   20   25   30   40   50   75 100 150 200 400) and a single value is displayed

Q9 Imagine yourself in each of the following situations. Decide if each situation would be painful for you and if yes, how painful it would be. Let 0 stand for no pain; 1 is just noticeable pain and 10 is the most severe pain that you can imagine.

	0 (no pain) (1)	1 (2)	2 (3)	3 (4)	4 (5)	5 (6)	6 (7)	7 (8)	8 (9)	9 (10)	10 (most severe pain imaginable) (11)
Imagine you slam your finger in a drawer. (1)	○	○	○	○	○	○	○	○	○	○	○
Imagine you accidentally bite your tongue or cheek badly while eating. (2)	○	○	○	○	○	○	○	○	○	○	○
Imagine you shake hands with someone who has a normal grip. (4)	○	○	○	○	○	○	○	○	○	○	○
Imagine you pick up a hot pot by accidentally grabbing its equally hot handles. (3)	○	○	○	○	○	○	○	○	○	○	○
Imagine you burn your tongue on a very hot drink. (5)	○	○	○	○	○	○	○	○	○	○	○
To ensure your full attention, please select 9 (8)	○	○	○	○	○	○	○	○	○	○	○

Imagine you bump your elbow on the edge of a table ("funny bone"). (6)	○	C	C	C	C	C	C	C	C	○	○
Imagine you bump your shin badly on a hard edge, for example, on the edge of a glass coffee table. (7)	○	C	C	C	C	C	C	C	C	○	○

End of Block: PSQ Match

Start of Block: Demographics

Q10 Which of the following best describes your status?

○ Married

○ Divorced

○ Widowed

○ Separated

○ Single, never married

○ Living with a partner in a long term relationship

*

Q11 How many children do you have?

_____

Q13 What is the highest level of school you have completed or the highest degree you have received?

○ Less than high school

○ High School Graduate- high school DIPLOMA or the equivalent (For example: GED)

○ Some college but no degree

○ Occupational/vocational program

○ Associate degree in college

○ Bachelor's degree (For example: BA, AB, BS)

○ Master's degree (For example: MA, MS, MEng, MEd, MSW, MBA)

○ Professional School Degree (For example: MD,DDS,DVM,LLB,JD)

○ Doctorate degree (For example: PhD, EdD)

Q14 What is your current employment status? Mark all that apply.

☐ Employed for wages full time

☐ Employed for wages part time

☐ Self-employed

☐ Out of work and looking for work

☐ Out of work but not currently looking for work

☐ A home-maker

☐ A student

☐ Military

☐ Retired

☐ Unable to work

Title For the following questions, think of a HOUSEHOLD as all people related by birth, marriage, or adoption and residing together. If you live alone, or do not consider anyone else to be a member of your HOUSEHOLD, please answer these questions as an individual.

Q15 Which category represents the total combined income of all members of your HOUSEHOLD during the past 12 months? This includes money from jobs, net income from business, farm or rent, pensions, dividends, interest, social security payments and any other money income received by members of your HOUSEHOLD who are 15 years of age or older.

○ Less than $5,000

○ $5,000 to $9,999

○ $10,000 to $14,999

○ $15,000 to $19,999

○ $20,000 to $24,999

○ $25,000 to $29,999

○ $30,000 to $39,999

○ $40,000 to $49,999

○ $50,000 to $59,999

○ $60,000 to $74,999

○ $75,000 to $99,999

○ $100,000 to $124,999

○ $125,000- $149,999

○ $150,000 - $199,999

○ $200,000 to $249,999

○ $250,000 and over

Q16 Which of the following statements best describes how your household's total spending compared to total income over the last 12 months?

○ Spending was much less than income

○ Spending was a little less than income

○ Spending was about equal to income

○ Spending was a little more than income

○ Spending was much more than income

Q17 Which of the following statements best describes how your household has paid its bills over the last 12 months? My household has been financially able to:

○ Pay all our bills on time

○ Pay nearly all our bills on time

○ Pay most of our bills on time

○ Pay some of our bills on time

○ Pay very few of our bills on time

Q18 At your current level of spending, how long could you and your household afford to cover expenses, if you had to live on only the money you have readily available, without withdrawing money from retirement accounts or borrowing?

○ 6 months or more

○ 3-5 months

○ 1-2 months

○ 1-3 weeks

○ Less than 1 week

Q19 Thinking about all of your household's current debts, including mortgages, bank loans, student loans, money owed to people, medical debt, past-due bills, and credit card balances that are carried over from prior months...

As of today, which of the following statements describes how manageable your household debt is?

○ Do not have any debt

○ Have a manageable amount of debt

○ Have a bit more debt than is manageable

○ Have far more debt than is manageable

Q20 Thinking about all of the types of insurance you and others in your household currently might have, including health insurance, vehicle insurance, home or rental insurance, life insurance, and disability insurance...

How confident are you that those insurance policies will provide enough support in case of an emergency?

○ Very confident

○ Moderately confident

○ Somewhat confident

○ Slightly confident

○ Not at all confident

○ No one in my household has any insurance

End of Block: Financial Health FHN

2   Pollfish results

Lemon Juice

*0–25 mean before normalization was 17.33
*Black fitted line is a cubic polynomial
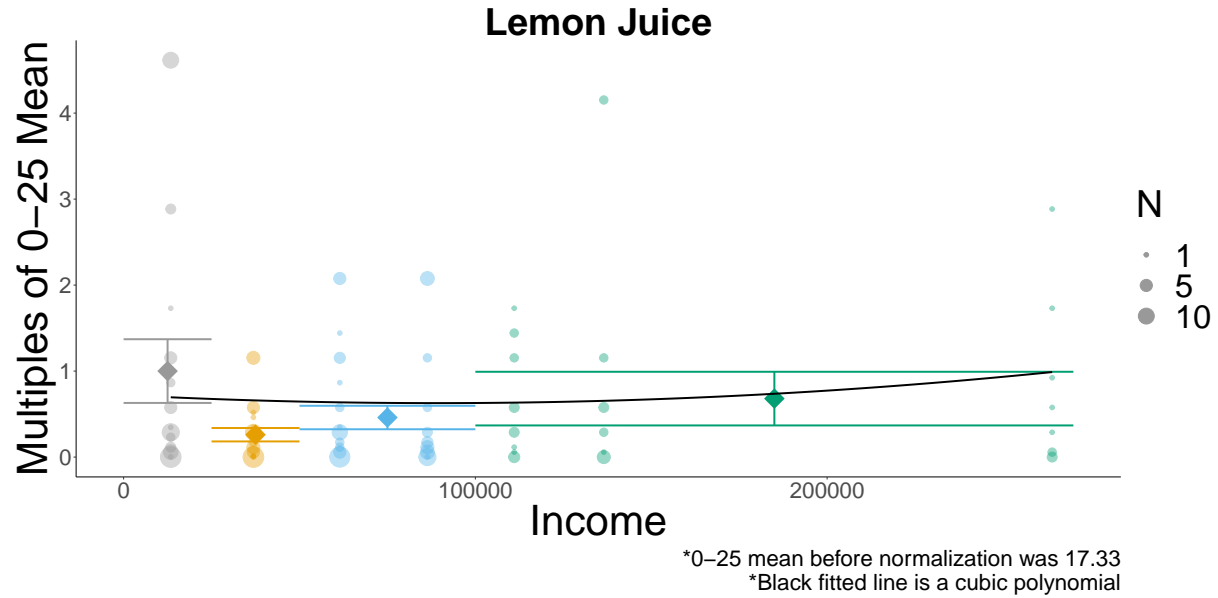
Lemon Juice					
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.18	1.59	1.00	1.0
25-50	0.26	0.05	0.35	0.22	0.4
50-100	0.46	0.07	0.70	0.44	0.4
more than 100	0.68	0.16	1.00	0.63	1.0

MLE Lemon Juice			
label	est	se	P_ratio
male	1.42	3.39	NA
psq	4.91	1.20	NA
intercept	−0.70	4.74	NA
sigma	26.11	2.00	NA
0-25	**1.00**	NA	**1.0000000**
25-50	**4.51**	0.49	**0.2219545**
50-100	**2.21**	0.22	**0.4524891**
more than 100	**1.52**	0.19	**0.6570436**
mean psq control			

Figure 1: imagine you have a minor cut on your finger and you inadvertently get lemon juice in the wound

Bite Cheek

*0–25 mean before normalization was 19.12
*Black fitted line is a cubic polynomial
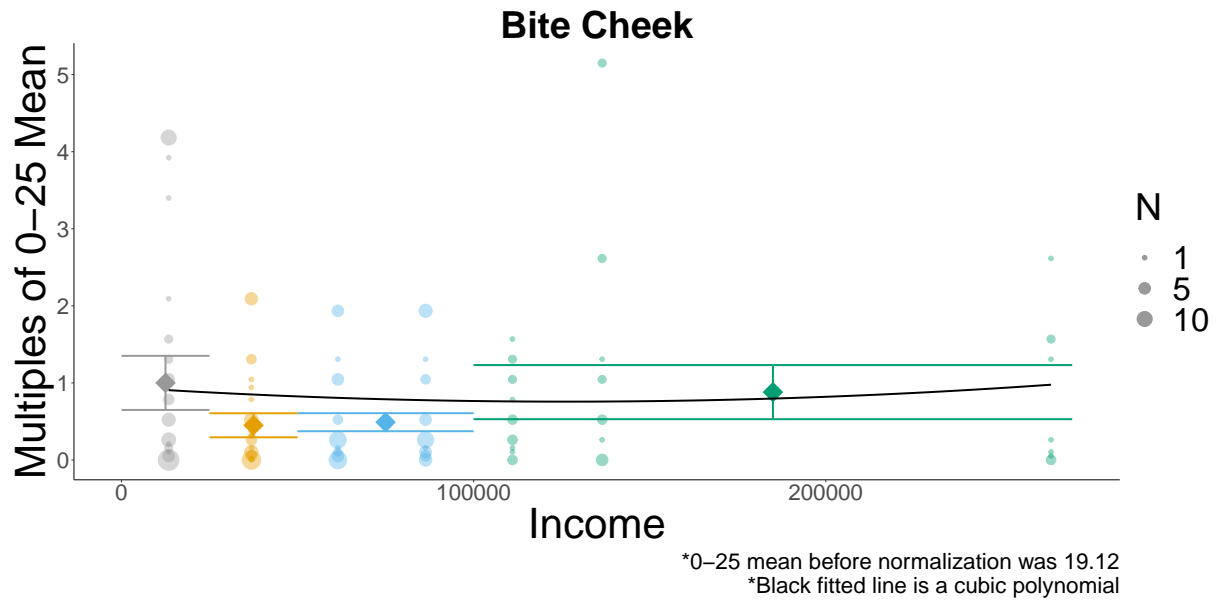
Bite Cheek					
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.17	1.47	1.00	1.0
25-50	0.45	0.08	0.65	0.45	0.4
50-100	0.49	0.07	0.64	0.44	1.0
more than 100	0.88	0.18	1.21	0.82	2.0

MLE Bite Cheek			
label	est	se	P_ratio
male	5.05	3.42	NA
psq	5.34	1.20	NA
intercept	−1.80	4.75	NA
sigma	26.22	1.98	NA
0-25	1.00	NA	1.0000000
25-50	2.29	0.24	0.4374243
50-100	2.19	0.21	0.4575944
more than 100	1.16	0.14	0.8607178
mean psq control			

Figure 2: imagine you accidentally bite your tongue or cheek badly while eating

Hot Pot

*0–25 mean before normalization was 56.76
*Black fitted line is a cubic polynomial
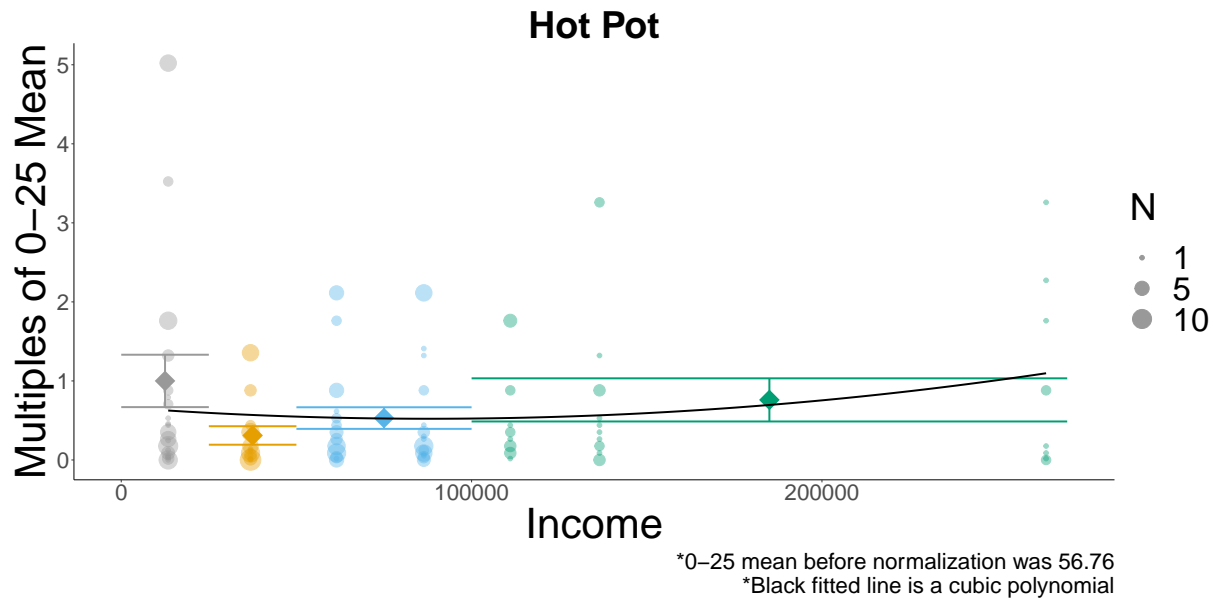
Hot Pot					
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.17	1.52	1.00	1.00
25-50	0.31	0.06	0.44	0.29	0.33
50-100	0.53	0.07	0.71	0.46	0.67
more than 100	0.76	0.15	0.93	0.61	1.33

MLE Hot Pot			
label	est	se	P_ratio
male	12.86	10.49	NA
psq	14.20	3.65	NA
intercept	3.24	14.62	NA
sigma	80.50	6.10	NA
0-25	**1.00**	NA	**1.0000000**
25-50	**3.45**	0.37	**0.2899111**
50-100	**2.05**	0.20	**0.4885869**
more than 100	**1.51**	0.18	**0.6608440**
mean psq control			

Figure 3: imagine you pick up a hot pot by inadvertently grabbing its equally hot handles

Burn Tongue

*0–25 mean before normalization was 13.26
*Black fitted line is a cubic polynomial
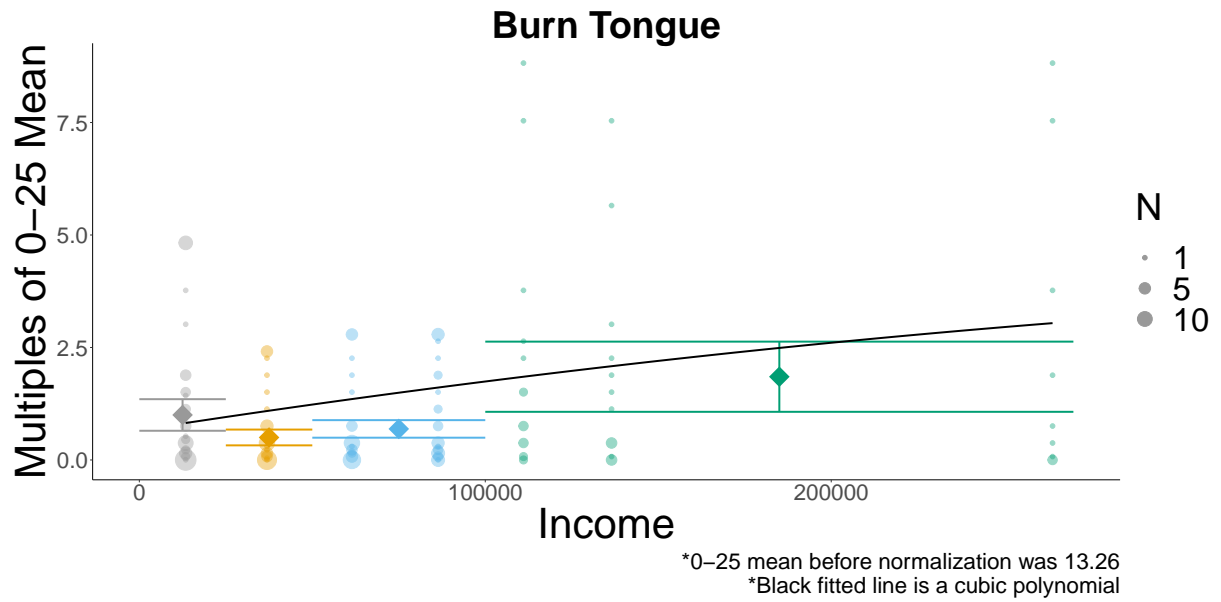
Burn Tongue					
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.18	1.54	1.00	1.0
25-50	0.50	0.10	0.74	0.48	0.4
50-100	0.69	0.10	0.95	0.61	0.7
more than 100	1.85	0.40	2.60	1.69	2.0

MLE Burn Tongue			
label	est	se	P_ratio
male	6.96	2.50	NA
psq	3.75	0.88	NA
intercept	−2.46	3.45	NA
sigma	19.01	1.44	NA
0-25	1.00	NA	1.0000000
25-50	2.12	0.23	0.4716562
50-100	1.56	0.15	0.6407617
more than 100	0.58	0.07	1.7384238
mean psq control			

Figure 4: imagine you burn your tongue on a very hot drink.

Bump Elbow

*0–25 mean before normalization was 8.54
*Black fitted line is a cubic polynomial
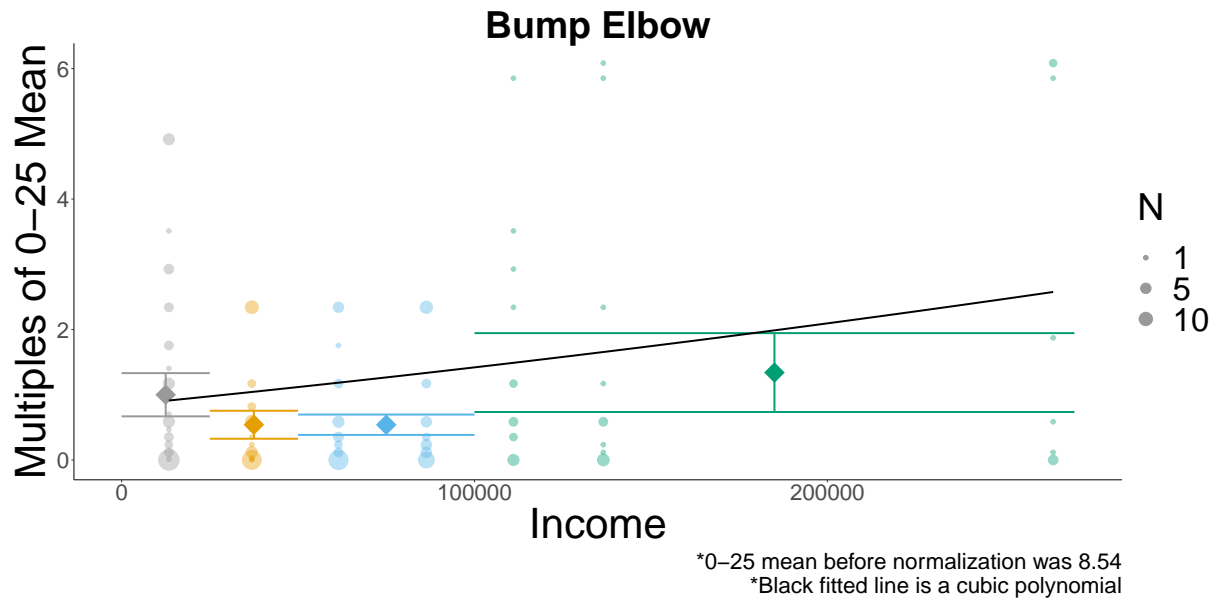
Bump Elbow					
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.18	1.50	1.00	1.0
25-50	0.54	0.11	0.83	0.55	0.5
50-100	0.54	0.09	0.81	0.54	0.5
more than 100	1.34	0.30	2.06	1.38	1.5

MLE Bump Elbow			
label	est	se	P_ratio
male	1.71	1.58	NA
psq	2.50	0.56	NA
intercept	−1.52	2.19	NA
sigma	12.11	0.92	NA
0-25	1.00	NA	1.0000000
25-50	1.86	0.20	0.5375826
50-100	1.81	0.18	0.5511262
more than 100	0.71	0.09	1.4090528
mean psq control			

Figure 5: imagine you bump your elbow on the edge of a table ("funny bone").

Bump Shin

*0–25 mean before normalization was 20.35
*Black fitted line is a cubic polynomial
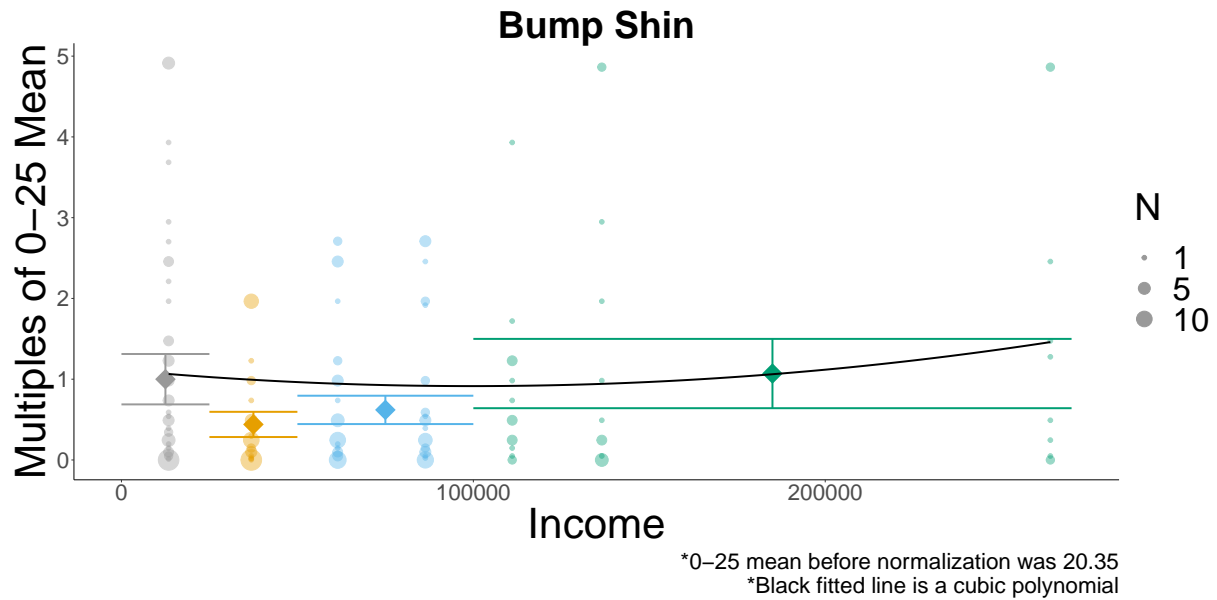
Bump Shin					
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.17	1.41	1.00	1.00
25-50	0.44	0.08	0.66	0.47	0.40
50-100	0.62	0.09	0.85	0.60	0.67
more than 100	1.07	0.23	1.50	1.06	1.33

| MLE Bump Shin			
label	est	se	P_ratio
male	10.52	3.61	NA
psq	4.48	1.23	NA
intercept	−0.20	4.92	NA
sigma	27.17	2.05	NA
0-25	**1.00**	NA	**1.0000000**
25-50	**2.16**	0.23	**0.4628516**
50-100	**1.63**	0.16	**0.6149244**
more than 100	**0.92**	0.11	**1.0864257**
mean psq control			

Figure 6: imagine you bump your shin badly on a hard edge, for example, on the edge of a glass coffee table.

Have Cold

*0–25 mean before normalization was 46.12
*Black fitted line is a cubic polynomial
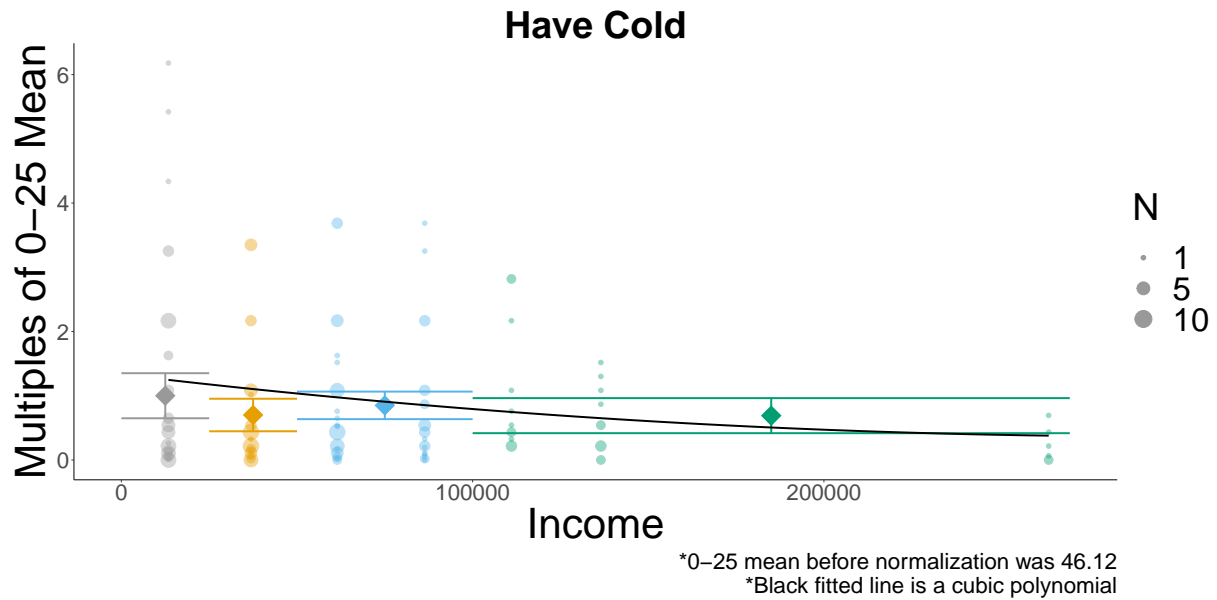
		Have Cold			
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.18	1.38	1.00	1.00
25-50	0.70	0.13	0.95	0.69	0.87
50-100	0.85	0.12	0.99	0.72	1.00
more than 100	0.69	0.14	0.78	0.56	1.00

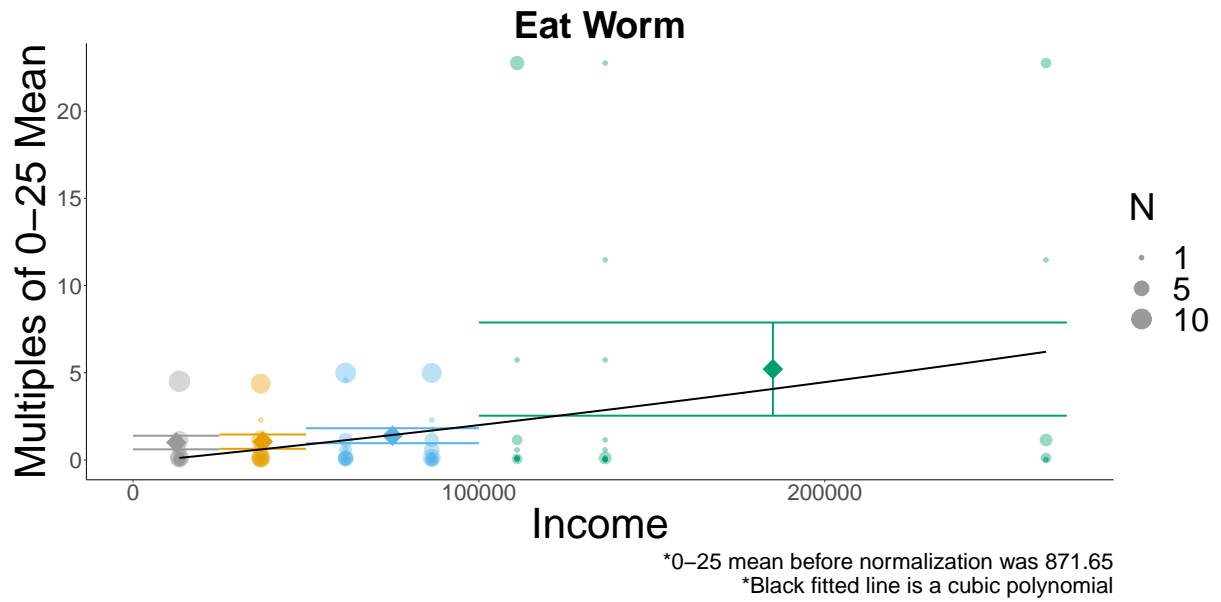|	MLE Have Cold		
label	est	se	P_ratio
male	−0.43	9.19	NA
psq	4.78	2.95	NA
intercept	31.65	12.26	NA
sigma	61.41	5.27	NA
0-25	**1.00**	NA	**1.0000000**
25-50	**1.45**	0.17	**0.6903644**
50-100	**1.32**	0.15	**0.7562644**
more than 100	**1.68**	0.24	**0.5951526**
mean psq control			

Figure 7: imagine you have a sore throat and cough which will last a week with no other complications. drugs will not relieve the symptoms.

Step Worm

*0–25 mean before normalization was 39.81
*Black fitted line is a cubic polynomial
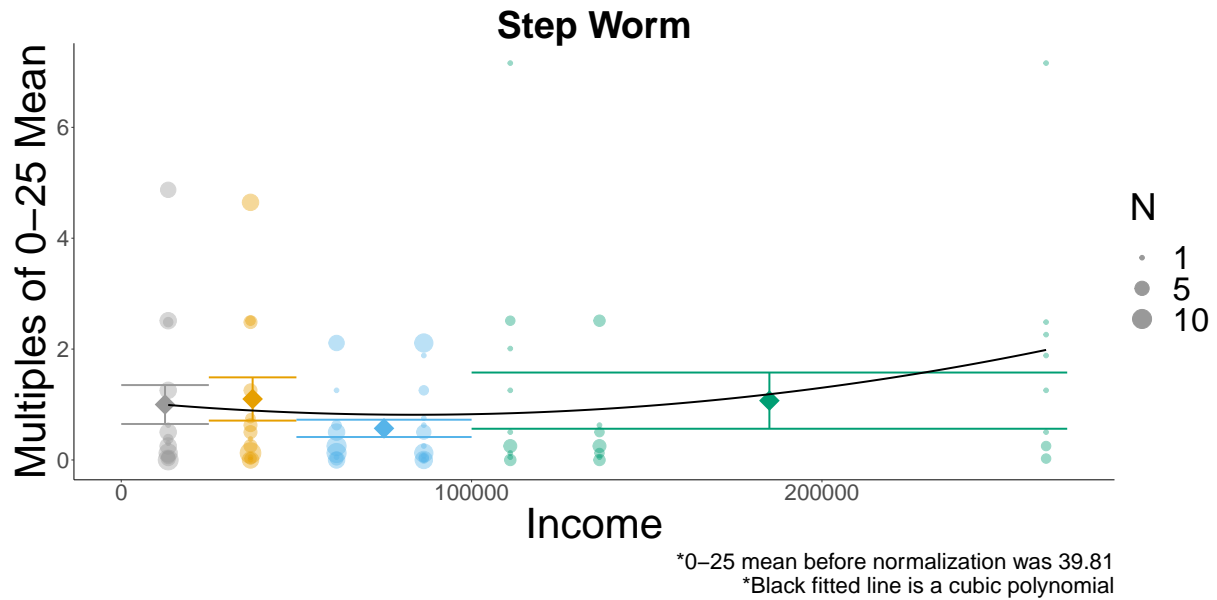
Step Worm

Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.17	1.46	1.00	1.00
25-50	1.10	0.20	1.55	1.06	1.25
50-100	0.57	0.08	0.76	0.52	1.00
more than 100	1.07	0.26	1.67	1.15	1.00

MLE Step Worm

label	est	se	P_ratio
male	−10.28	7.45	NA
psq	8.80	2.64	NA
intercept	11.15	10.47	NA
sigma	56.19	4.42	NA
0-25	**1.00**	NA	**1.0000000**
25-50	**0.94**	0.11	**1.0640200**
50-100	**1.90**	0.19	**0.5271882**
more than 100	**0.87**	0.11	**1.1440865**
mean psq control			

Figure 8: walk barefoot on concrete and step on a dead earthworm.

Eat Worm

*0–25 mean before normalization was 871.65
*Black fitted line is a cubic polynomial

Eat Worm				
Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.20	1.65	1.00	1
25-50	1.05	0.21	1.57	0.95	1
50-100	1.39	0.21	2.00	1.21	1
more than 100	5.21	1.34	8.74	5.30	1

MLE Eat Worm			
label	est	se	P_ratio
male	15.35	190.38	NA
psq	221.45	67.95	NA
intercept	54.94	270.47	NA
sigma	1,385.03	116.31	NA
0-25	1.00	NA	1.000000
25-50	1.04	0.12	0.962051
50-100	0.80	0.08	1.253803
more than 100	0.18	0.02	5.438409
mean psq control			

Figure 9: eat a dead earthworm, 6 inches long.

Ketchup Ice Cream

*0–25 mean before normalization was 71.07
*Black fitted line is a cubic polynomial
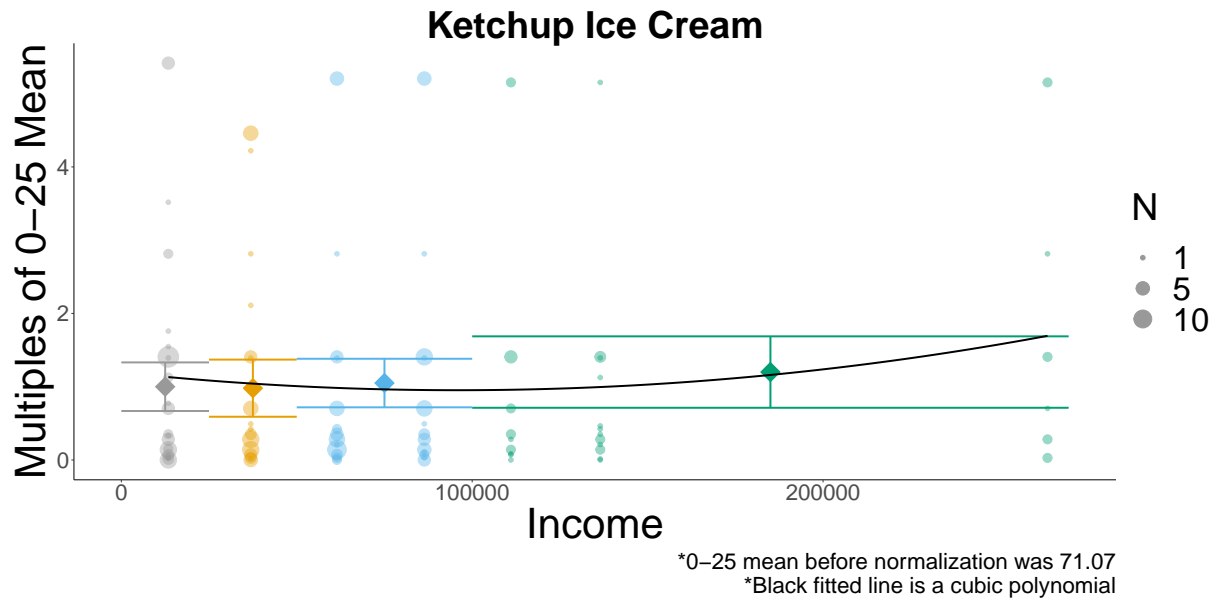
Ketchup Ice Cream

Income	Mean	se	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	0.18	1.38	1.00	1.00
25-50	0.98	0.19	1.46	1.05	0.80
50-100	1.05	0.16	1.56	1.13	1.00
more than 100	1.20	0.24	1.60	1.16	1.26

MLE Ketchup Ice Cream

label	est	se	P_ratio
male	−20.43	13.08	NA
psq	13.85	4.61	NA
intercept	22.47	18.30	NA
sigma	97.00	7.83	NA
0-25	1.00	NA	1.000000
25-50	0.97	0.11	1.028962
50-100	0.90	0.09	1.107206
more than 100	0.85	0.11	1.178982
mean psq control			

Figure 10: put two tablespoons of ketchup on one cup of vanilla ice cream and eat it.

label	Lemon Juice est	se	Bite Cheek est	se	Hot Pot est	se	Burn Tongue est	se	Bump Elbow est	se	Bump Shin est	se
male	1.4248556	3.3938385	5.048771	3.4221608	12.857169	10.4872904	6.9620718	2.50459055	1.7069535	1.57755635	10.5154235	3.6075709
psq	4.9132981	1.2014617	5.337530	1.2025717	14.201043	3.6514827	3.7493992	0.87605874	2.5032895	0.55823489	4.4849073	1.2271831
intercept	-0.7043961	4.7383238	-1.797299	4.7490253	3.235489	14.6205175	-2.4556670	3.44633306	-1.5198520	2.19186640	-0.1995436	4.9161006
sigma	26.1061732	2.0019957	26.215477	1.9792671	80.501951	6.0978881	19.0063680	1.43743405	12.1052190	0.92273439	27.1674595	2.0540339
0-25	**1.0000000**	NA	**1.000000**	NA	**1.000000**	NA	**1.0000000**	NA	**1.0000000**	NA	**1.0000000**	NA
25-50	**4.5054288**	0.4899229	**2.286110**	0.2444016	**3.449333**	0.3709161	**2.1201884**	0.22743035	**1.8601794**	0.20151247	**2.1605195**	0.2329265
50-100	**2.2099982**	0.2182993	**2.185342**	0.2105613	**2.046719**	0.1987606	**1.5606426**	0.15116269	**1.8144664**	0.17828592	**1.6262162**	0.1572062
more than 100	**1.5219689**	0.1867252	**1.161821**	0.1390792	**1.513216**	0.1811029	**0.5752337**	0.06865261	**0.7096966**	0.08613581	**0.9204495**	0.1100030

label	Have Cold est	se	Step Worm est	se	Eat Worm est	se	Ketchup Ice Cream est	se
male	-0.4336552	9.1943315	-10.2760847	7.4511514	15.3547878	190.37874196	-20.4301353	13.07856097
psq	4.7768386	2.9515214	8.8045662	2.6367809	221.4533352	67.94913386	13.8538416	4.60867985
intercept	31.6474190	12.2647548	11.1454741	10.4689092	54.9444072	270.46596055	22.4739752	18.30406629
sigma	61.4140409	5.2724097	56.1932747	4.4198356	1385.0300168	116.30663366	96.9989201	7.83042050
0-25	**1.0000000**	NA	**1.0000000**	NA	**1.0000000**	NA	**1.0000000**	NA
25-50	**1.4485104**	0.1735345	**0.9398320**	0.1059102	**1.0394459**	0.12284045	**0.9718535**	0.11212166
50-100	**1.3222888**	0.1450972	**1.8968559**	0.1894838	**0.7975737**	0.08411142	**0.9031741**	0.09184296
more than 100	**1.6802415**	0.2357622	**0.8740598**	0.1092534	**0.1838773**	0.02418736	**0.8481892**	0.10600972

Average Pain Questions

Income	Mean	Std Dev	Std Dev Norm	Median Norm
0-25	1.00	1.50	1.00	1.00
25-50	0.42	0.64	0.43	0.41
50-100	0.55	0.78	0.52	0.78
more than 100	1.10	1.70	1.13	1.31

MLE Normed Pain Qs

label	est	se	P_ratio
male	0.25	0.07	NA
psq	0.26	0.03	NA
intercept	−0.06	0.10	NA
sigma	1.42	0.04	NA
0-25	**1.00**	NA	**1.0000000**
25-50	**2.37**	0.10	**0.4223848**
50-100	**1.87**	0.07	**0.5356272**
more than 100	**0.87**	0.04	**1.1513940**

all questions normed to lowest mean = 1

mean psq control