Supplemental Material: Main Study

1) Participants' Demographic Information

2) Participants' Relevant Experience

3) Berlin Literacy Test Result

4) Results of Evaluating Transfer Results Against Alternative Distributions to Predictive

5) Reliable Effects Given Alternative KLD Calculations

1. Demographic Information – Age, Gender, Education

Age	18-24	25-34	35-44	45-54	55+
Discrete-None	13	19	15	8	4
Discrete-Predict	3	26	16	9	6
Discrete-Rule	3	35	14	6	1
Continuous-None	9	27	15	10	3
Continuous-Predict	8	30	9	7	5
Continuous-Rule	7	31	13	8	0

Gender	Female	Male	Other
Discrete-None	35	23	1
Discrete-Predict	25	36	0
Discrete-Rule	35	24	0
Continuous-None	31	33	0
Continuous-Predict	21	38	0
Continuous-Rule	28	29	0

Education	High	Bachelor	grad	Other
Discrete-None	24	22	12	0
Discrete-Predict	20	34	6	2
Discrete-Rule	16	31	11	1
Continuous-None	27	23	11	1
Continuous-Predict	17	26	11	4
Continuous-Rule	18	25	11	3

2. Relevant Experience – Statistics Experience

How much experience do you have with statistics, including hypothesis testing, distribution types, and measures of variance?

(1) Very little: I have never taken a course and rarely use statistics.
(2) I took it in college but rarely use statistics.
(3) I took it in college and sometimes use statistics.
(4) I have taken at least one college level statistics course and I use statistics often.
(5) I consider myself an expert at statistics.

Condition	(1)	(2)	(3)	(4)	(5)
Discrete-None	26	23	7	2	1
Discrete-Predict	28	26	6	1	0
Discrete-Rule	18	31	6	4	0
Continuous-None	26	27	6	4	0
Continuous-Predict	21	26	6	5	1
Continuous-Rule	22	28	6	3	0

2. Relevant Experience – Chart Experience

How often do you use charts and graphs?

Very often (about everyday)
Often (1 - 5 times per week)
Sometimes (1-5 times per month)
Rarely (less than once a month)
Never

Condition	Never	Rarely	Sometimes	Often	Very often
Discrete-None	11	29	9	7	2
Discrete-Predict	9	22	23	6	2
Discrete-Rule	7	28	18	5	1
Continuous-None	16	26	15	4	3
Continuous-Predict	11	27	15	3	3
Continuous-Rule	10	28	16	5	0

3. Berlin Literacy Test Result – Questions

Q1: Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. **What is the probability that a randomly drawn man is a member of the choir? Please indicate the probability in percent.**

_____%

Q2a: Imagine we are throwing a five-sided die 50 times. **On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3 or 5)?**

_____out of 50 throws

Q2b: Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. **On average, out of these 70 throws how many times would the die show the number 6?**

_____out of 70 throws

Q4: In a forest 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. **What is the probability that a poisonous mushroom in the forest is red?**

_____%

3. Berlin Literacy Test Result – Results

Condition	Mean	Stdev	Median
Overall	1.9	1.4	2
Discrete-None	1.9	1.3	2
Discrete-Predict	2.0	1.3	2
Discrete-Rule	2.1	1.4	2
Continuous-None	1.8	1.4	2
Continuous-Predict	2.0	1.5	2
Continuous-Rule	1.9	1.4	2

Condition	N	1st quartile	2nd quartile	3rd quartile	4th quartile
Overall	362	.43	.19	.19	.18
Discrete-None	59	.46	.19	.22	.14
Discrete-Predict	62	.36	.26	.21	.18
Discrete-Rule	59	.39	.17	.22	.22
Continuous-None	64	.47	.22	.14	.17
Continuous-Predict	59	.44	.15	.19	.22
Continuous-Rule	59	.46	.19	.17	.19

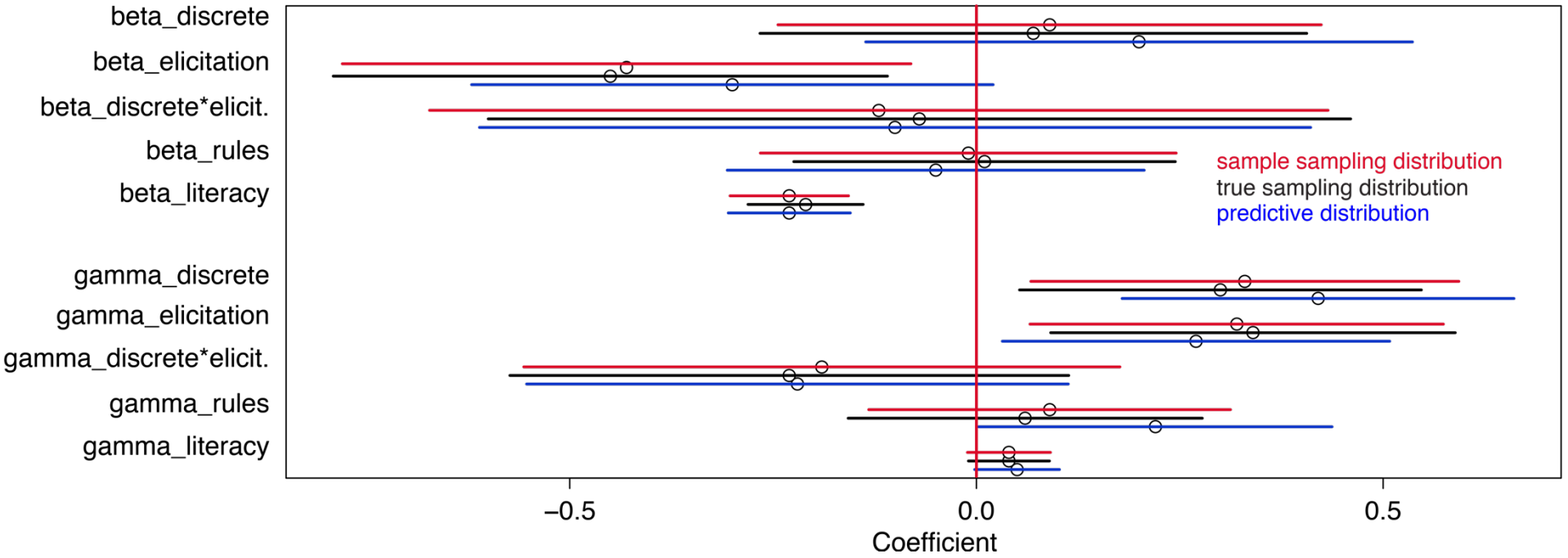
Condition	Mean	Stdev	Median
Computer Adaptive*	2.6	1.1	3
Paper and Pencil*	1.6	1.2	2

Population	N	1st quartile	2nd quartile	3rd quartile	4th quartile
USA Web Panel Sample (M-Turk)*	1,612	.49	.27	.12	.13
Graduating US Physician Assistants*	51	.16	.39	.29	.16
General Population of US*	55	.20	.29	.20	.31

* Cokely, Edward T., et al. "Measuring risk literacy: The Berlin numeracy test." *Judgment and Decision Making* 7.1 (2012): 25.

4. Results of evaluating transfer task relative to true sampling distribution and sample sampling distribution

Coefficients from Bayesian regressions evaluating participants' predicted distributions in the graphical transfer task relative to the predictive distribution (reported in paper), the true sampling distribution, and the sample sampling distribution. See analysis scripts for further detail.



5. Reliable Effects Given Alternative KLD Calculations

Method 1 uses spline fitting and numerical integration; Method 2 normalizes 0s, Method 3 normalizes 0s and tests against the opposite format reference distribution than response distribution. See analysis script for further detail.

Task type	Measure	Effect	Method 1	Method 2	Method3
Recall	Log Mean KLD	Discrete ↓	✓	✓	✓
		Numeracy ↓	✓	✓	✓
		Discrete * Predict ↓	✓		✓
		Rules ↓		✓	
	Log SD KLD	Discrete ↑	✓	✓	✓
		Predict ↑	✓		
		Discrete * Predict ↓	✓	✓	✓
		Rules ↑	✓	✓	✓
Transfer	Log Mean KLD	Discrete ↑	✓	✓	
		Predict ↓	✓	✓	✓
		Numeracy ↓	✓	✓	✓
	Log SD KLD	Discrete ↑	✓	✓	✓
		Predict ↑	✓	✓	✓
		Discrete * Predict ↓	✓	✓	✓
		Rules ↑	✓	✓	✓
		Numeracy ↑	✓	✓	