1 Note

Hi Zoe, thanks for the tip. I have corrected it now.

2 Chapter 4 The Response Distribution

Problem 4.1 ***Match the following functions that play a role in Bayesian modeling with the descriptions:***

Functions:

(a) Distribution of the posterior mean estimate

(b) Prior distribution

(c) Likelihood function

(d) Posterior distribution

(e) Measurement distribution

Descriptions:

(a) Is the result of inference on an individual trial

(b) Describes how potentially noisy observations are generated

(c) Can be directly compared to human responses in a psychophysical experiment

(d) Is often modeled as a Gaussian function centered at the measurement

(e) May reflect statistics in the natural world

My answers are as following:
(a) $\rightarrow$ (c)

The distribution of the posterior mean estimate can be directly compared to behavioral data in psychophysical experiments, as it represents the central tendency of Bayesian inference on each trial.

(b) $\rightarrow$ (e)

Prior represents beliefs before observing data and reflects statistics from past experience.

(c) $\rightarrow$ (d)

The likelihood function is usually a Gaussian function centered at the measurement.

(d) $\rightarrow$ (a)

The posterior distribution is the result of inference on an individual trial, combining prior and likelihood information to update the belief about the true stimulus.

(e) $\rightarrow$ (b)

The noisy observation is generated by stimulus + noise, which is the description of measurement distribution.