





WHY USE THE POSTERIOR?

• Allows to use probability in more contexts.

- $P(\theta|y)$  represents our knowledge of parameters using probability.

this representation fully encapsulates our beliefs.

- $P(\theta)$ , the prior, can encode useful information.

parameter scale, shared structure, permitted values.



Isn't the MLE the best estimator? (depends on the criteria..)

- Sometimes... but not  $\rho \equiv f(\hat{\theta})$

• Expands the range of models we can fit

---

# WHY USE THE POSTERIOR?

---

- Allows us to use probability in more contexts.
- $P(\theta | y)$  represents our knowledge of parameters using probability.
  - this representation fully encapsulates our beliefs.
- $P(\theta)$ , the prior, can encode useful information.
  - parameter scale, shared structure, permitted values...
- Isn't the MLE the best estimator? (depends on the criteria...)
  - Sometimes... but not  $\rho = f(\hat{\theta})$
- Expands the range of models we can fit

# USING THE POSTERIOR