

# Bayes' Theorem

$$P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)}$$

For proposition A and evidence B

- $P(A)$ , the **prior**, is the initial degree of belief in A.
- $P(A|B)$ , the **posterior**, is the degree of belief having accounted for B.
- $P(B|A)/P(B)$  represents the support B provides for A.
- $P(B) = P(B|A) \cdot P(A) + P(B|\bar{A}) \cdot P(\bar{A})$