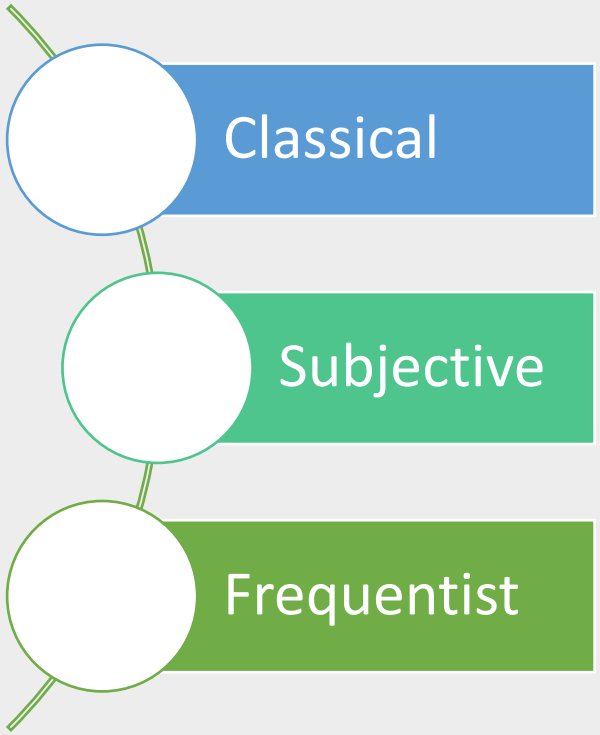
A Few Interpretations of Probability



When all outcomes are equally likely, the probability that an event (E) occurs can be theoretically estimated

$$P(E) = \frac{No.\,of\ Outcomes\ in\ E}{No.\,of\ Possible\ Outcomes}$$

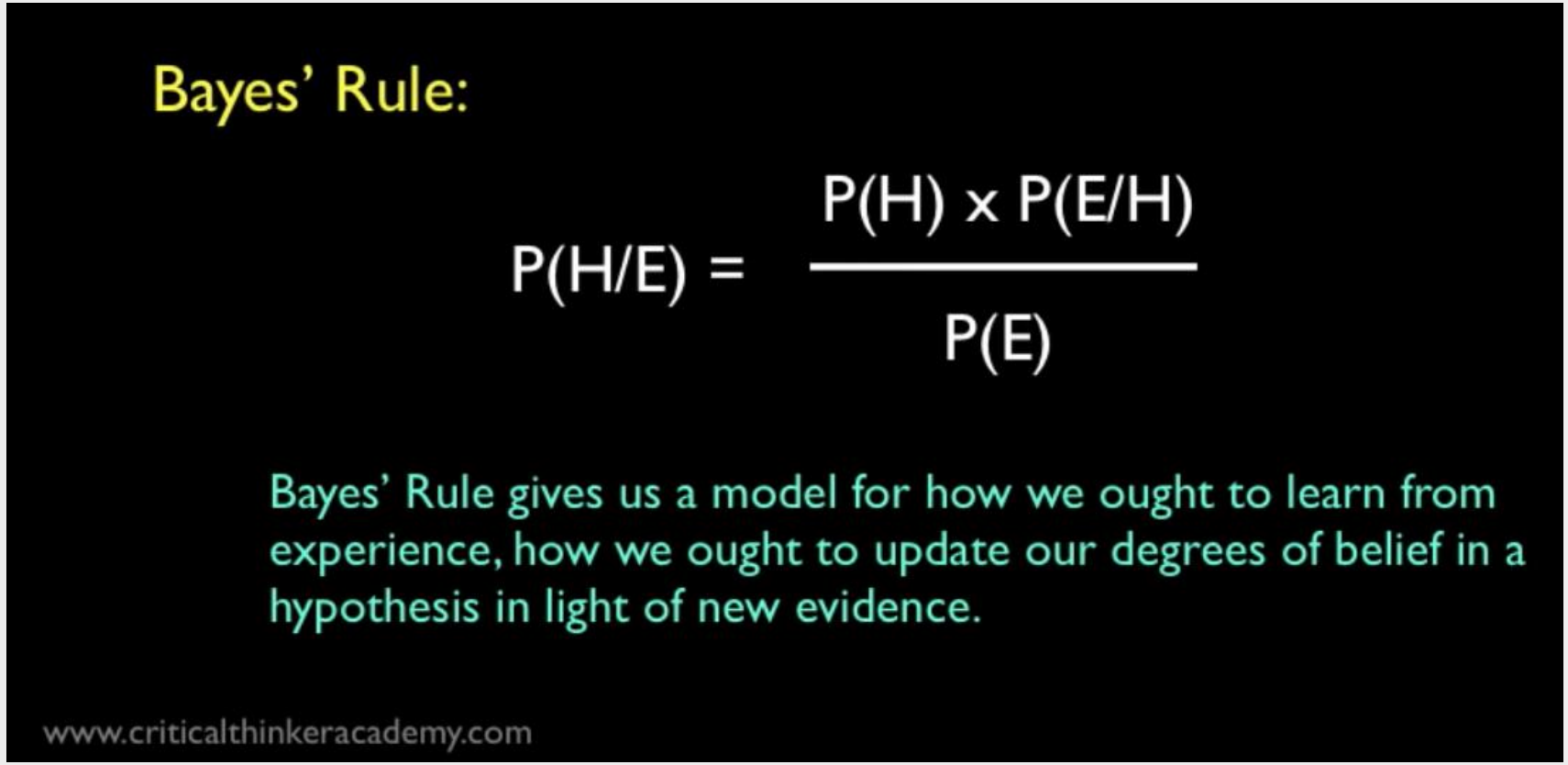
The probability of a hypothesis (Hyp) given we have some evidence (Evid)

$$P(\frac{Hyp}{Evid}) = \frac{P(Hyp)X\ P(\frac{Evid}{Hyp})}{P(Evid)}$$

If a particular experiment can be repeated, then the percentage of that outcome is close to the true probability

$$P(E) \approx \frac{No.\,of\ Outcomes\ in\ E}{No.\,of\ Possible\ Outcomes}$$

Bayes' Rule


Bayes' Rule:
P(H/E) = P(H) x P(E/H) / P(E)
Bayes' Rule gives us a model for how we ought to learn from experience, how we ought to update our degrees of belief in a hypothesis in light of new evidence.
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