

Kendall's Advanced Theory of Statistics: Volume 2A - Classical Inference

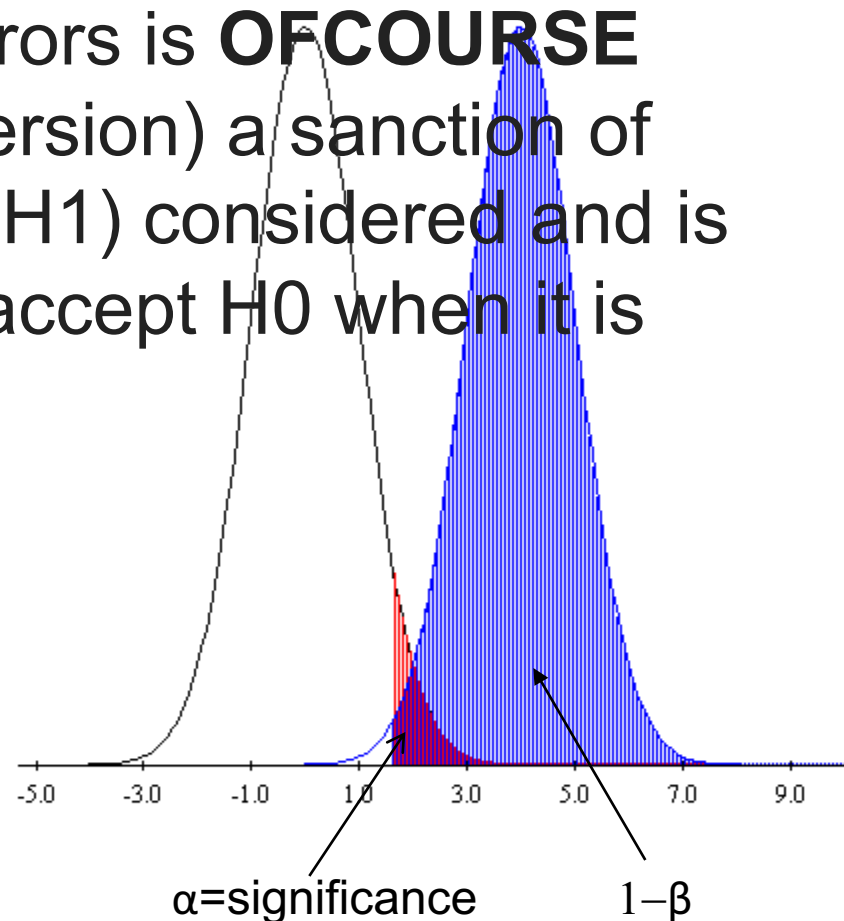
The probability of type 2 errors is **OFCOURSE** (emphasis in the original version) a sanction of the alternative hypothesis (H_1) considered and is the probability to wrongly accept H_0 when it is false or $P(\text{accept } H_0 | H_1)$

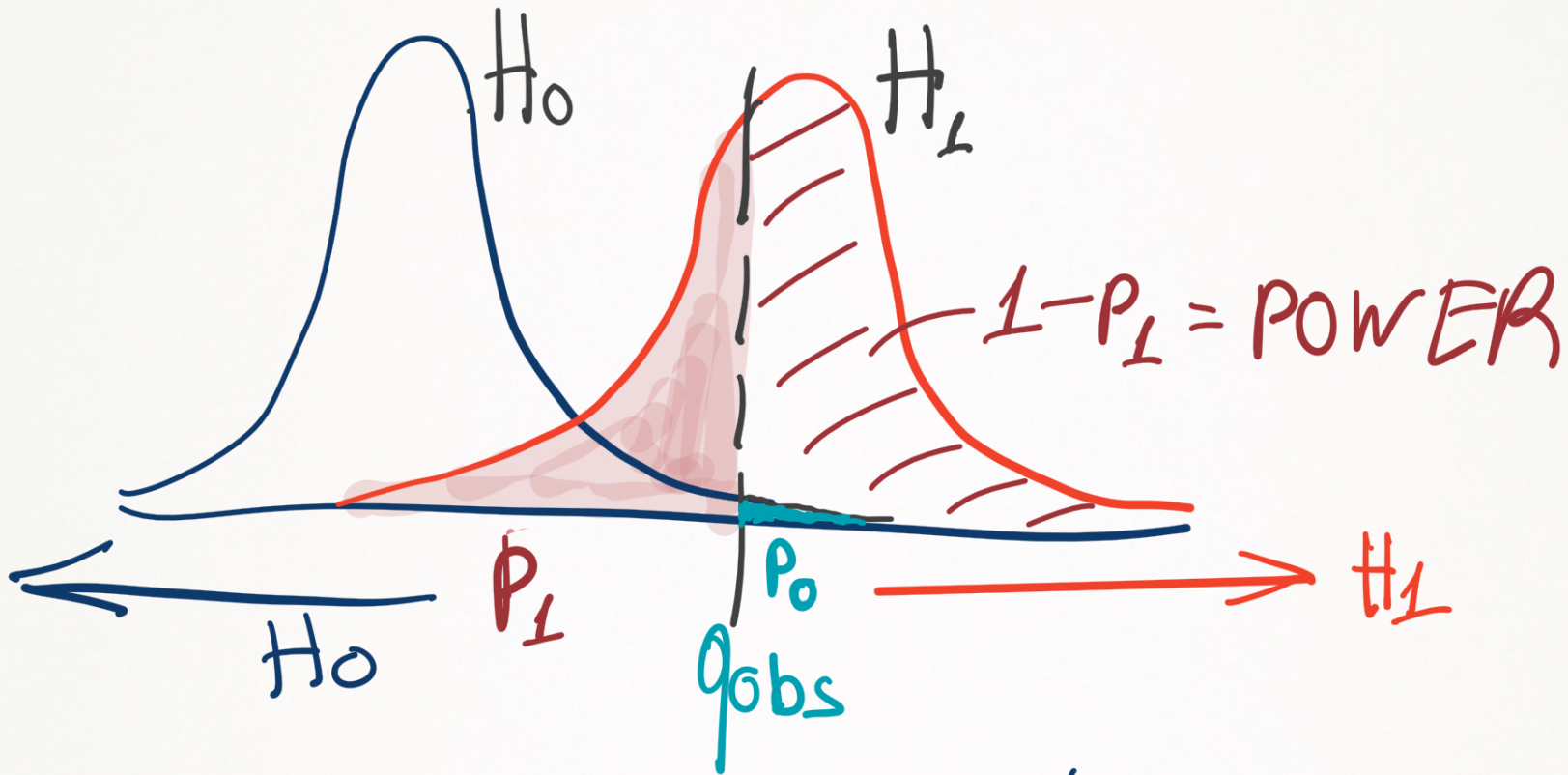
Confusing a bit...

False $H_0 \rightarrow H_1$

$$\rightarrow \beta = \text{Prob}(\text{accept } H_0 | H_1)$$

$$1 - \beta = \text{Prob}(\text{reject } H_0 | H_1)$$





If $P_0 < 10^{-3}$ reject H_0

If $P_1 < 5\%$ reject H_1

We test H_0 trying to reject it in favour of H_1

Is rejecting $H_0 \Rightarrow$ ACCEPTING H_1 ?

Suppose $N_{BG}^{exp} = 25$, $N_S^{exp} = 75$, $N_{obs} = 50$

WHAT CAN WE SAY? $P_0 \Rightarrow 56$ $P_1 \Rightarrow 56$

BOTH HYPOTHESES, IF TESTED,
ARE REJECTED!

