

Hypothesis Testing

Steps for Hypothesis Testing



STEP 1: State the hypothesis
(Population)



α

STEP 2: Set the level of Significance
(Criterion)

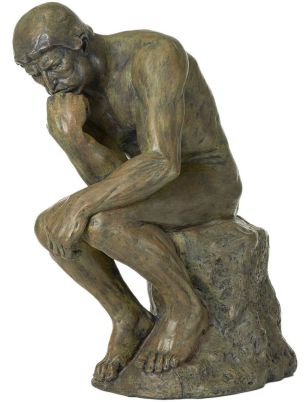


STEP 3: Compute test Statistics
(Sample)



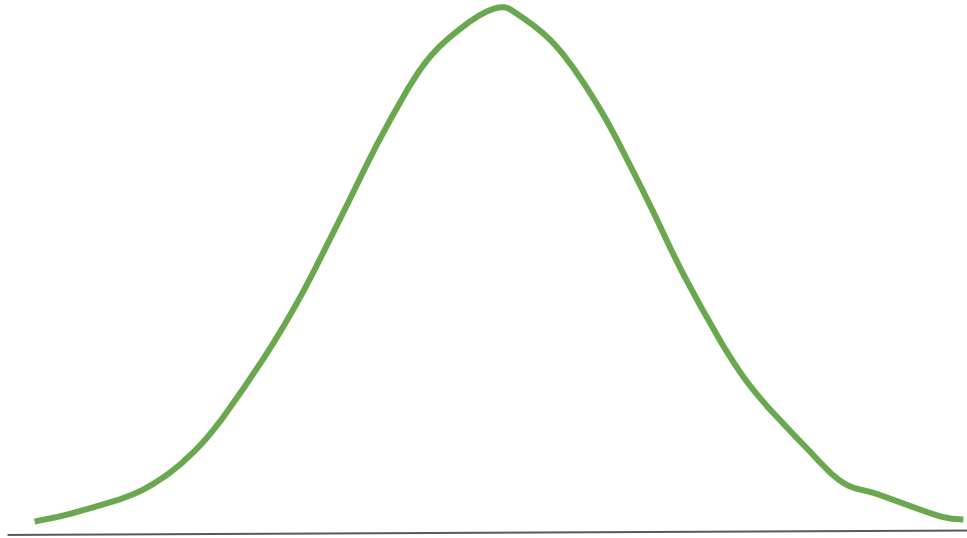
p

STEP 4: Make a decision based on p value

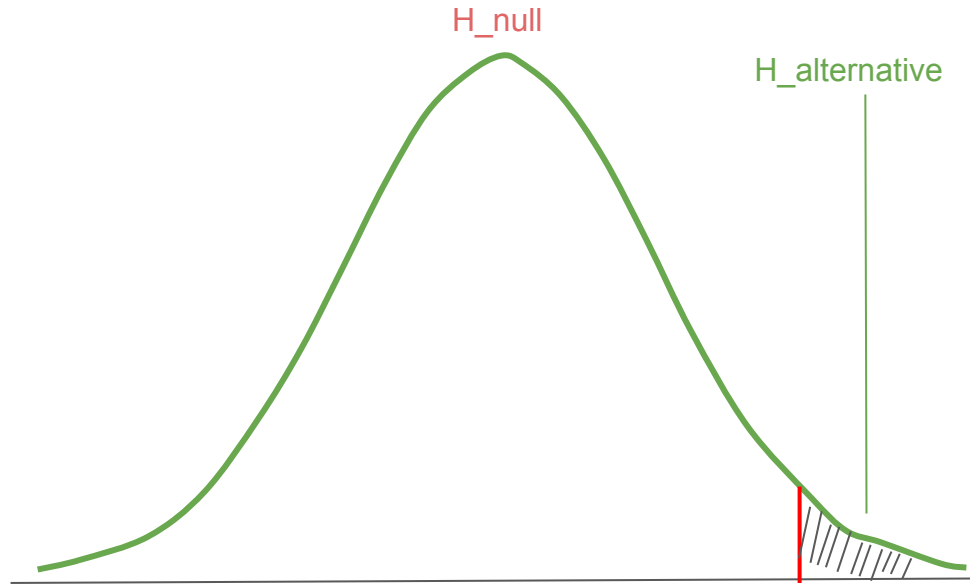


Understanding Hypothesis Testing

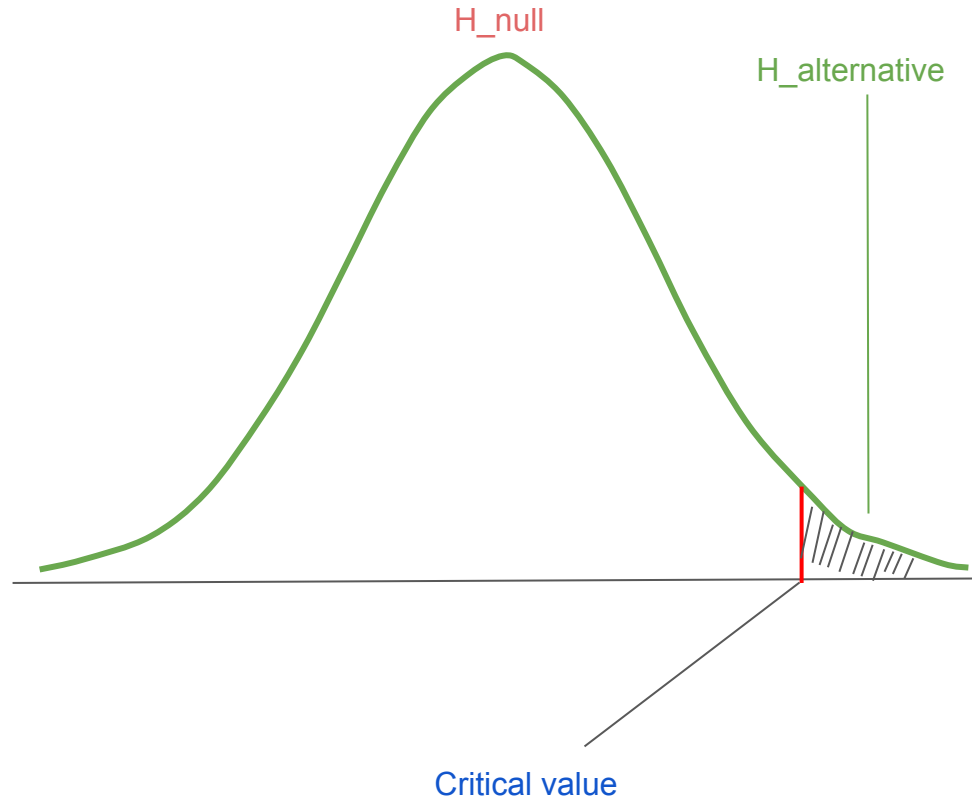
Understanding Hypothesis Testing



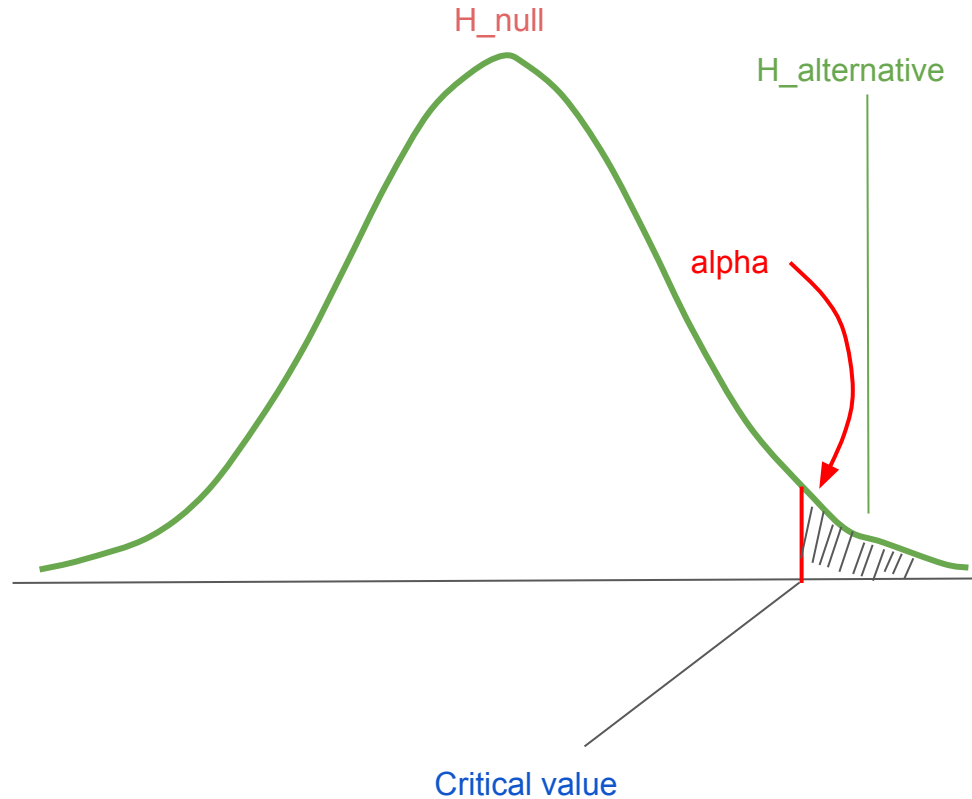
Understanding Hypothesis Testing



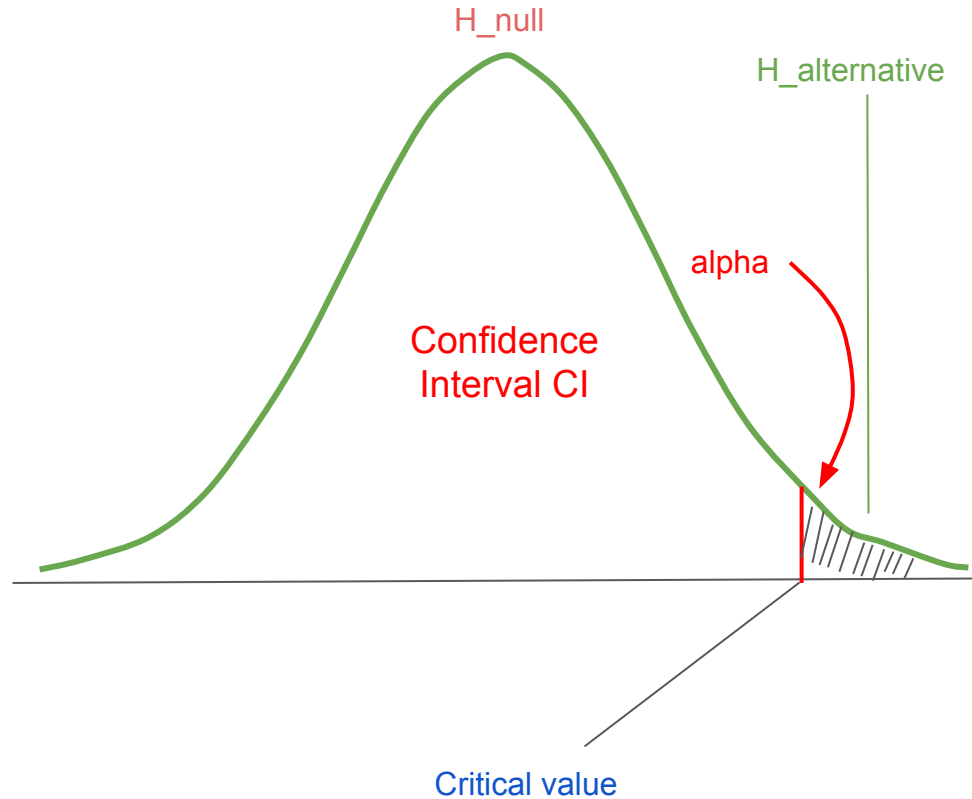
Understanding Hypothesis Testing



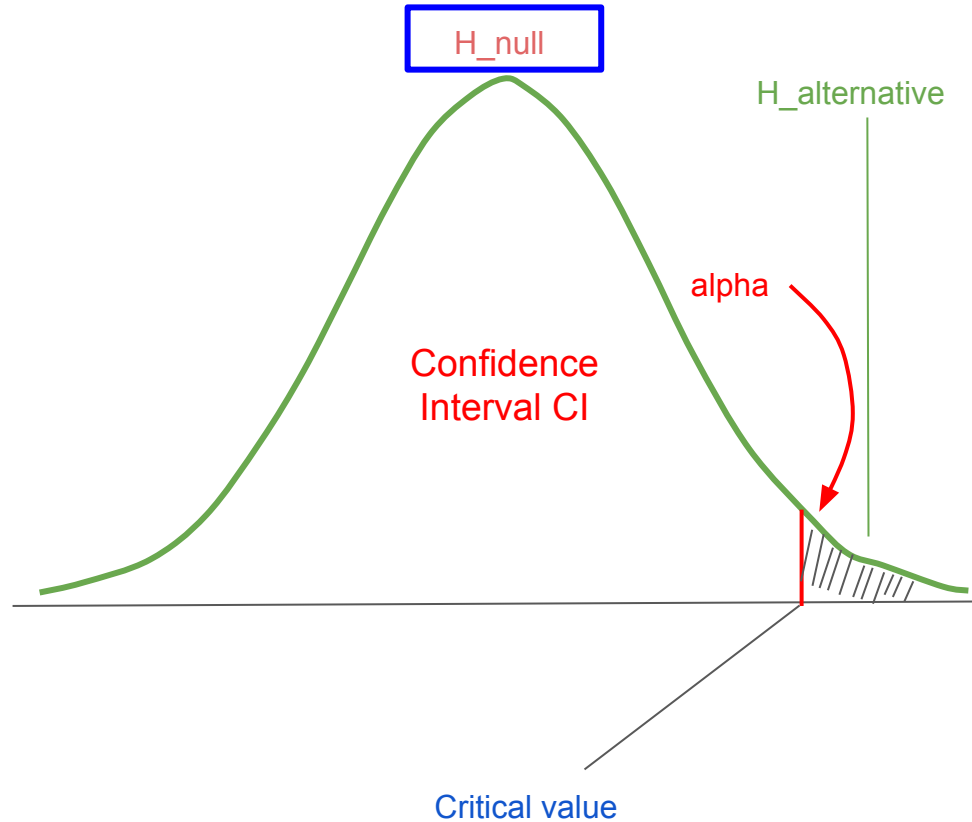
Understanding Hypothesis Testing



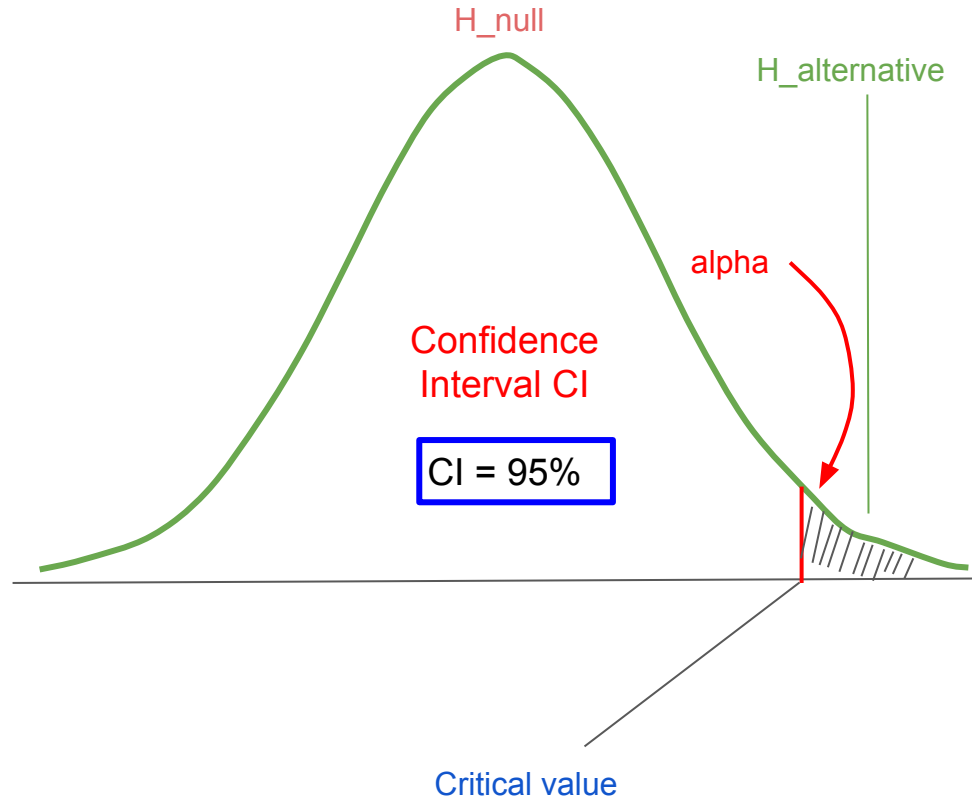
Understanding Hypothesis Testing



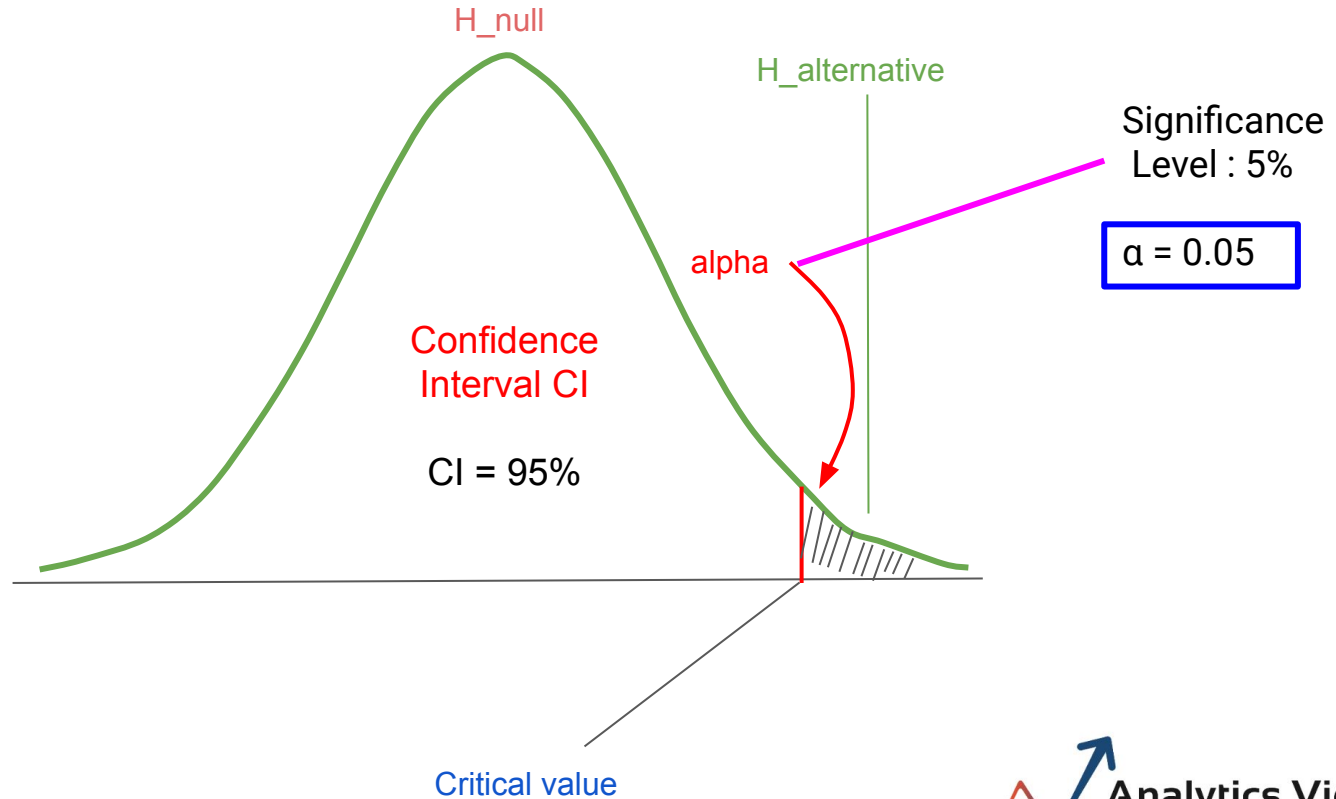
Understanding Hypothesis Testing



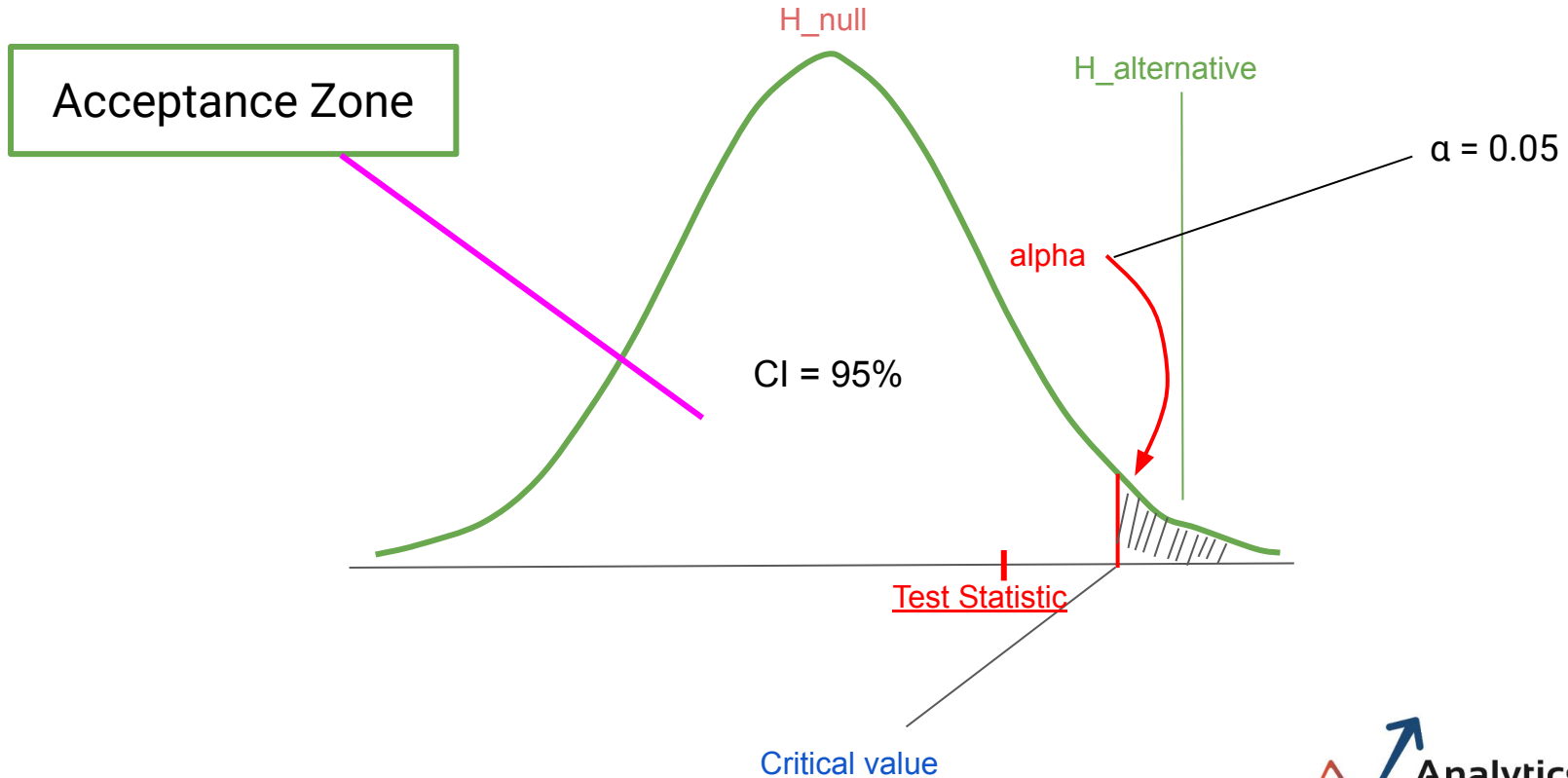
Understanding Hypothesis Testing



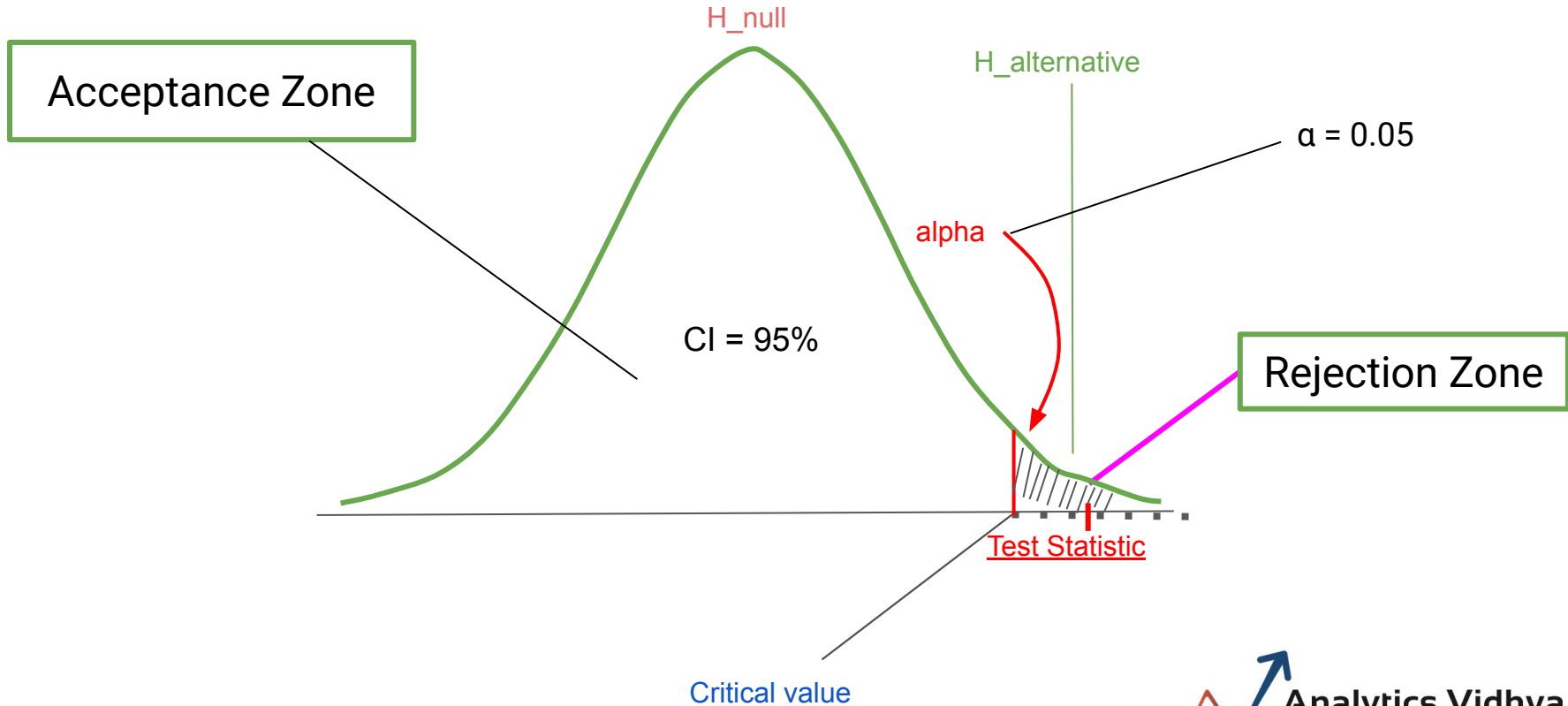
Understanding Hypothesis Testing



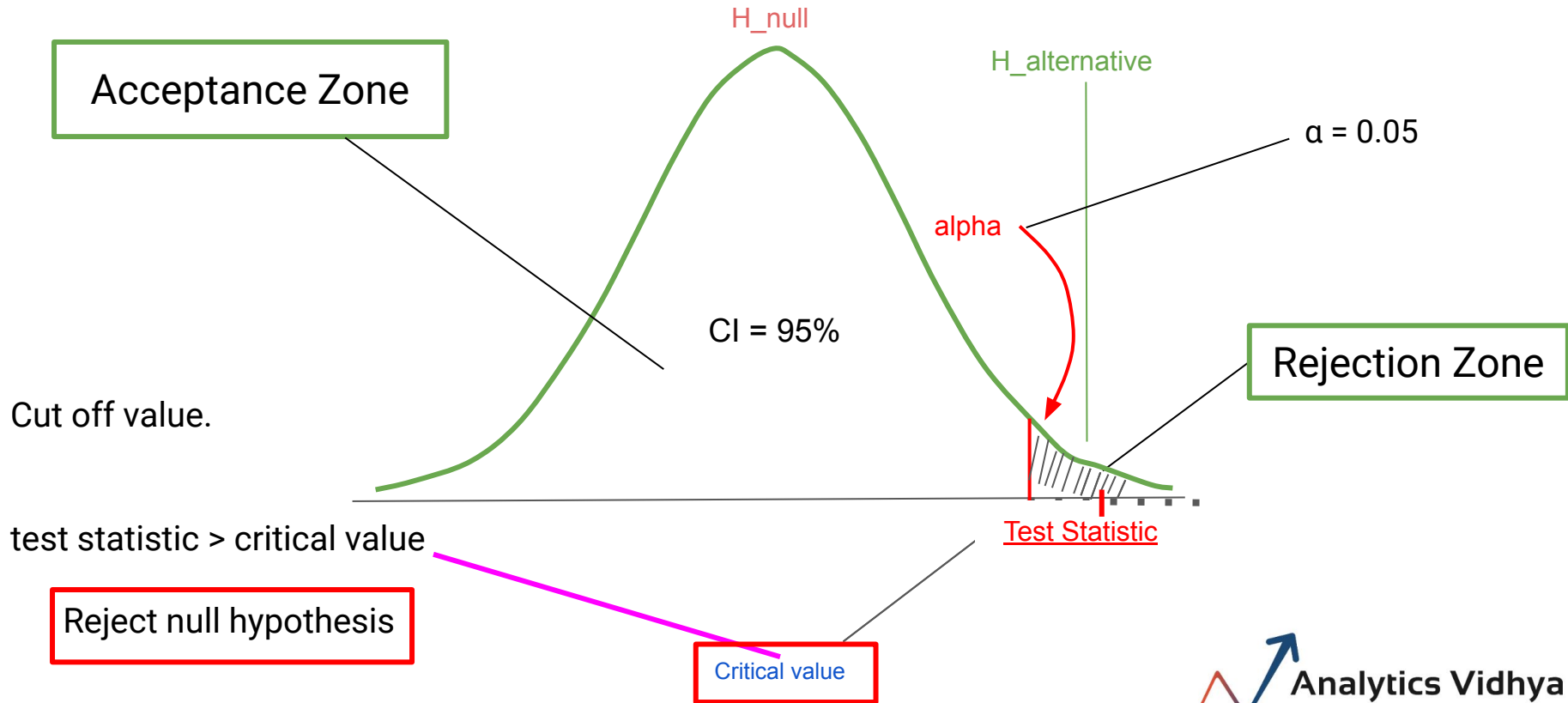
Acceptance Zone



Rejection Zone

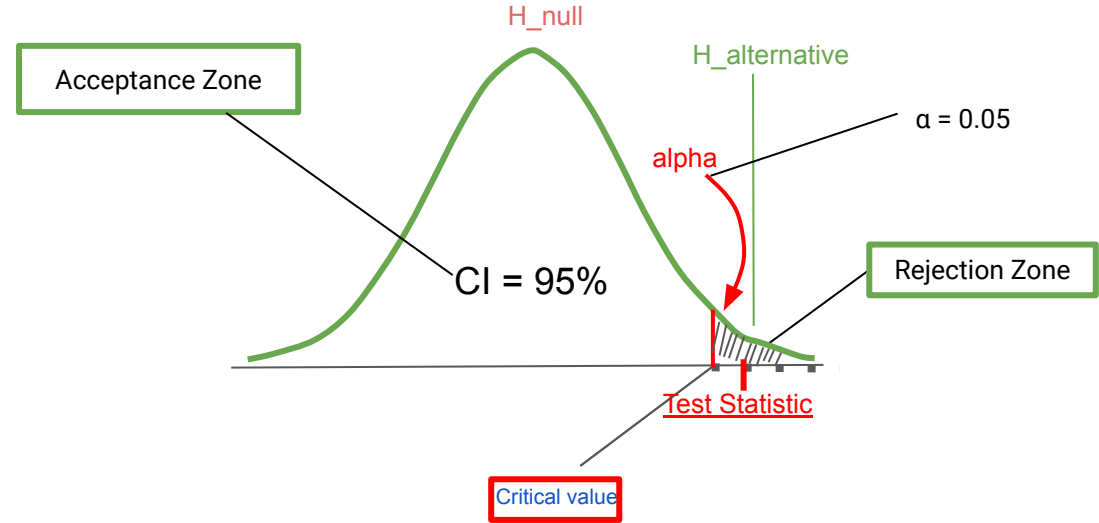


Critical Value



Critical Value

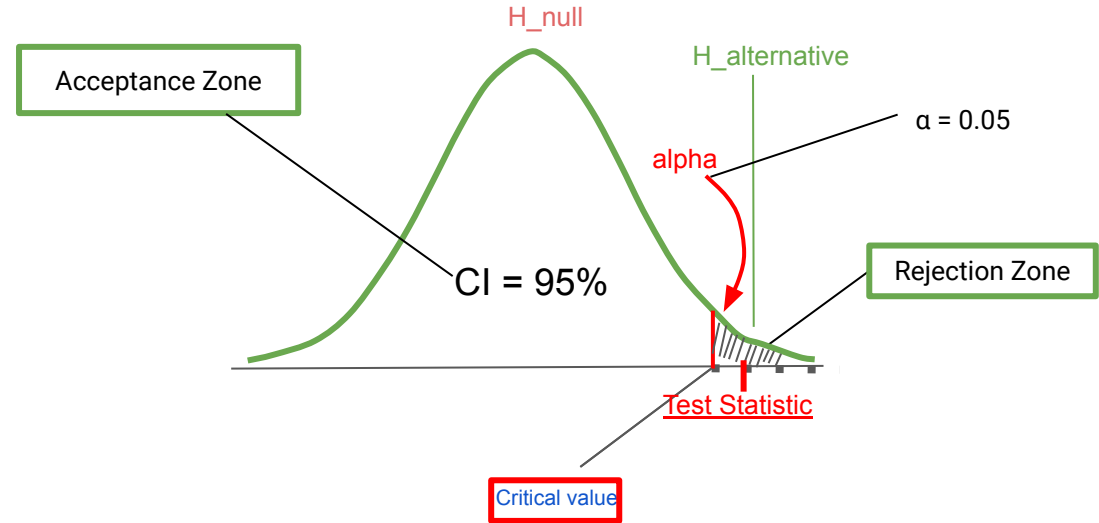
Different significance level needs different critical value.



Critical Value

Different significance level needs different critical value.

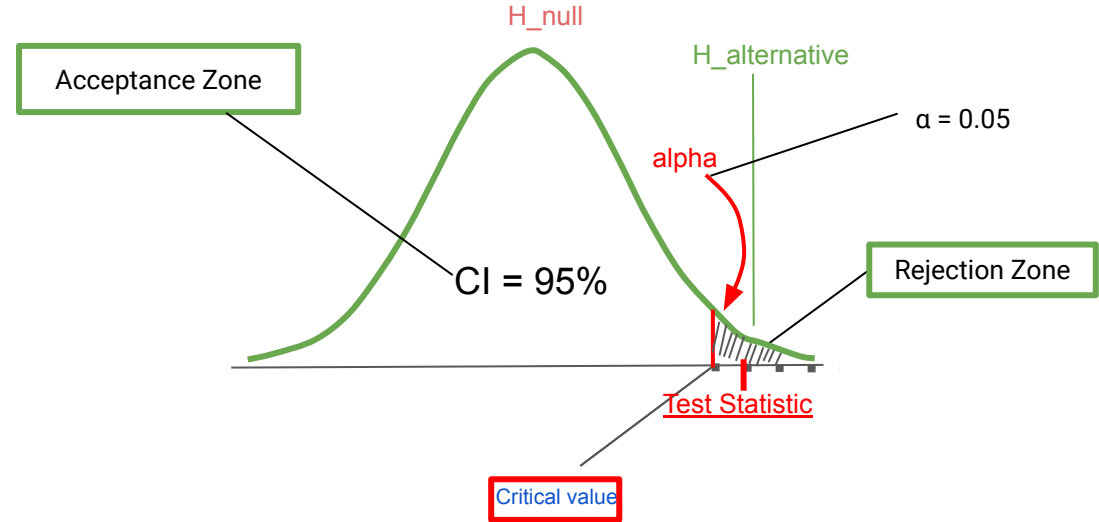
Calculate test statistic and critical value.



Critical Value

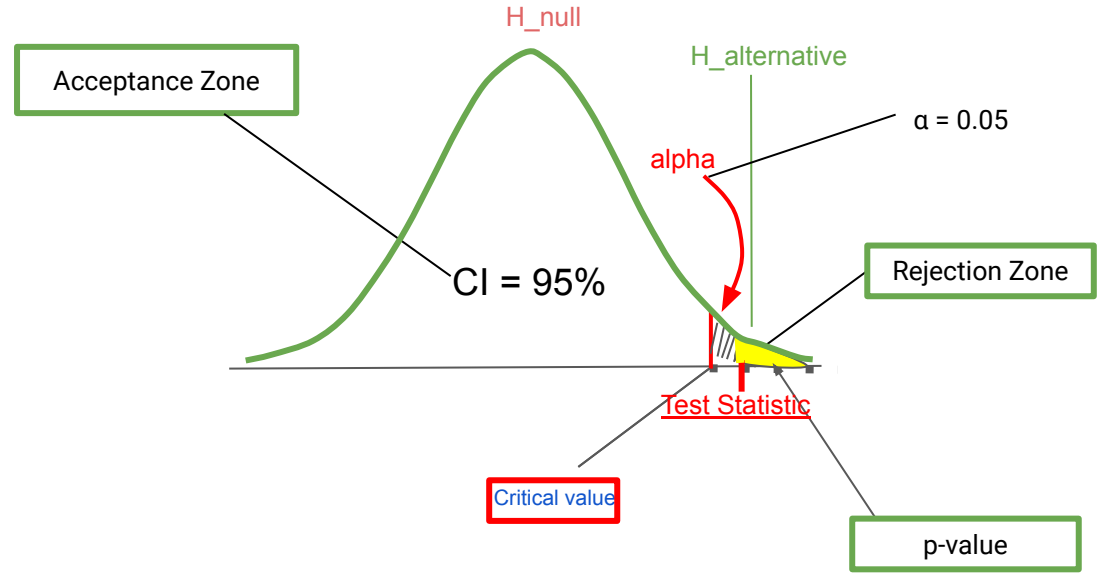
Different significance level needs different critical value.

Calculate test statistic and critical value

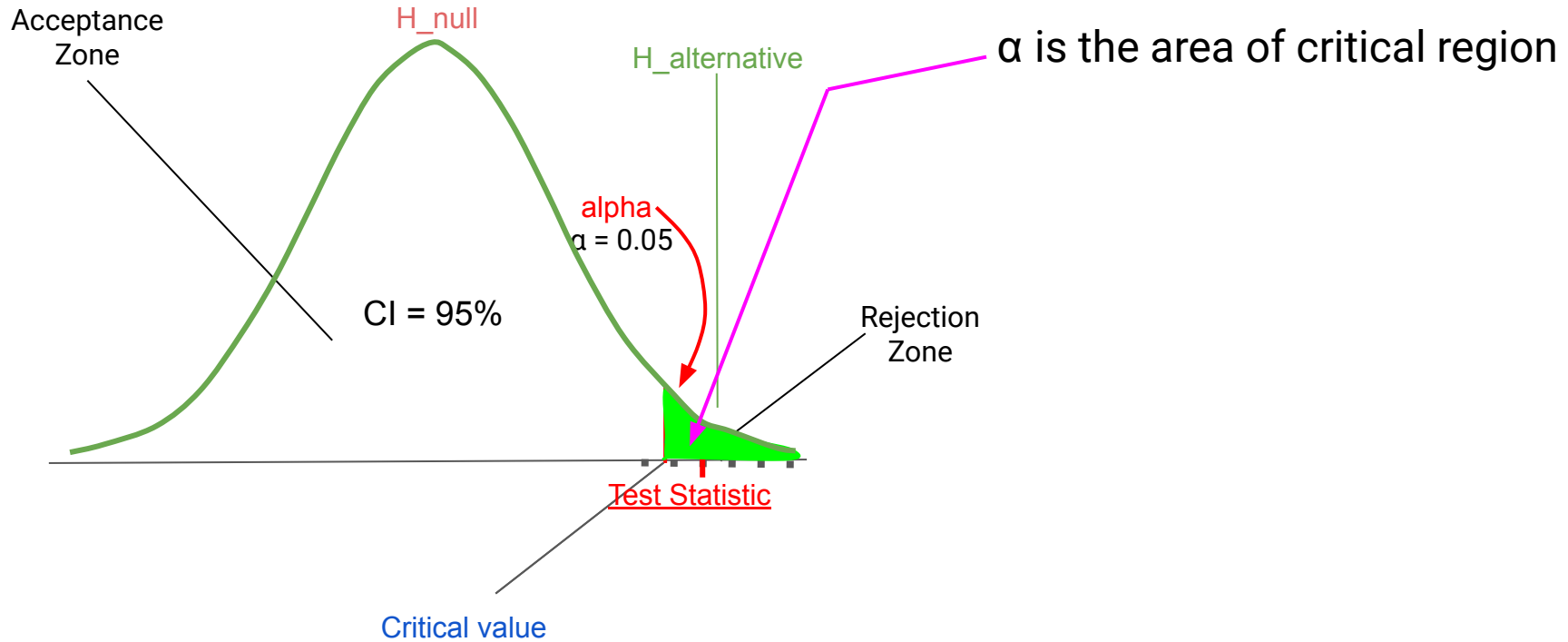


p-value

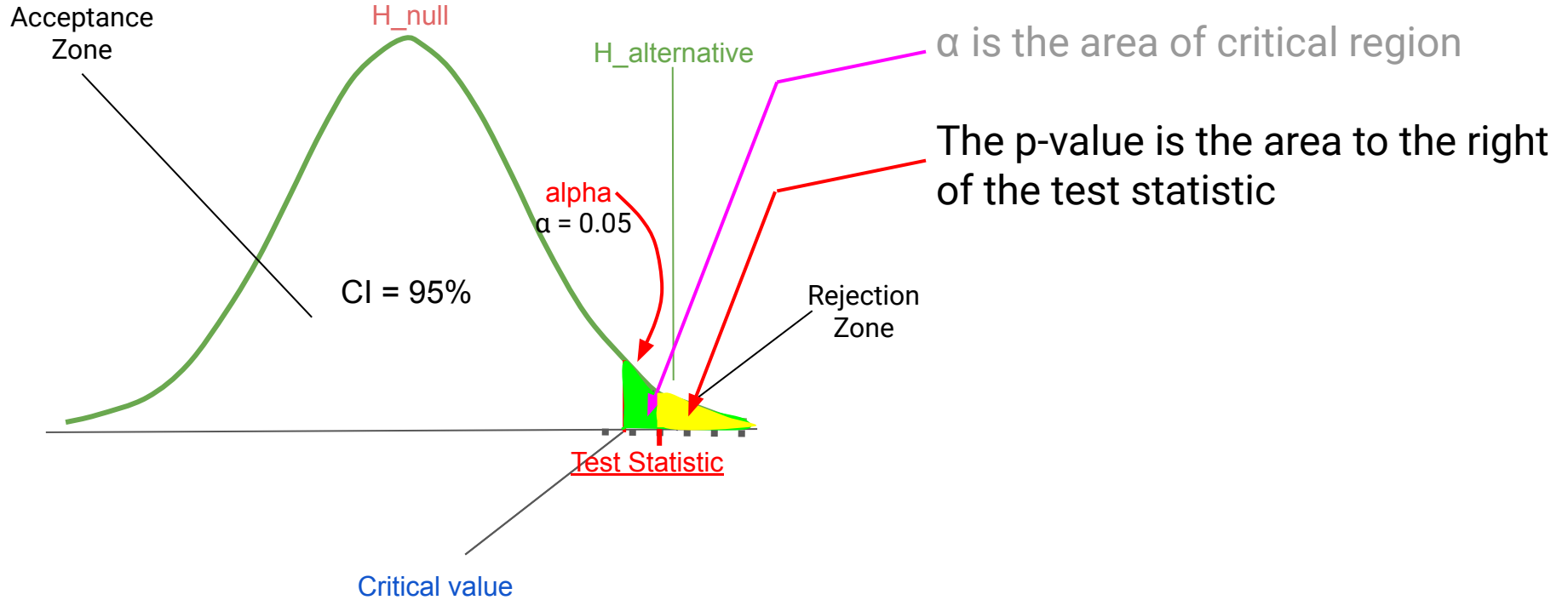
So We calculate p-value.



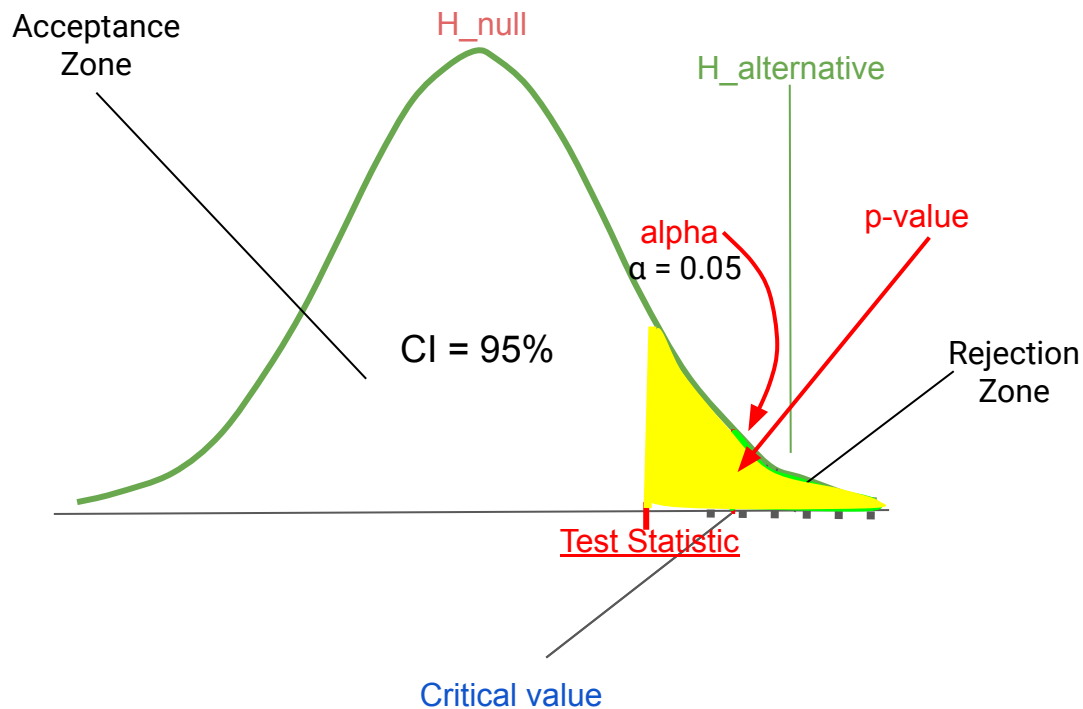
p-value



p-value



p-value



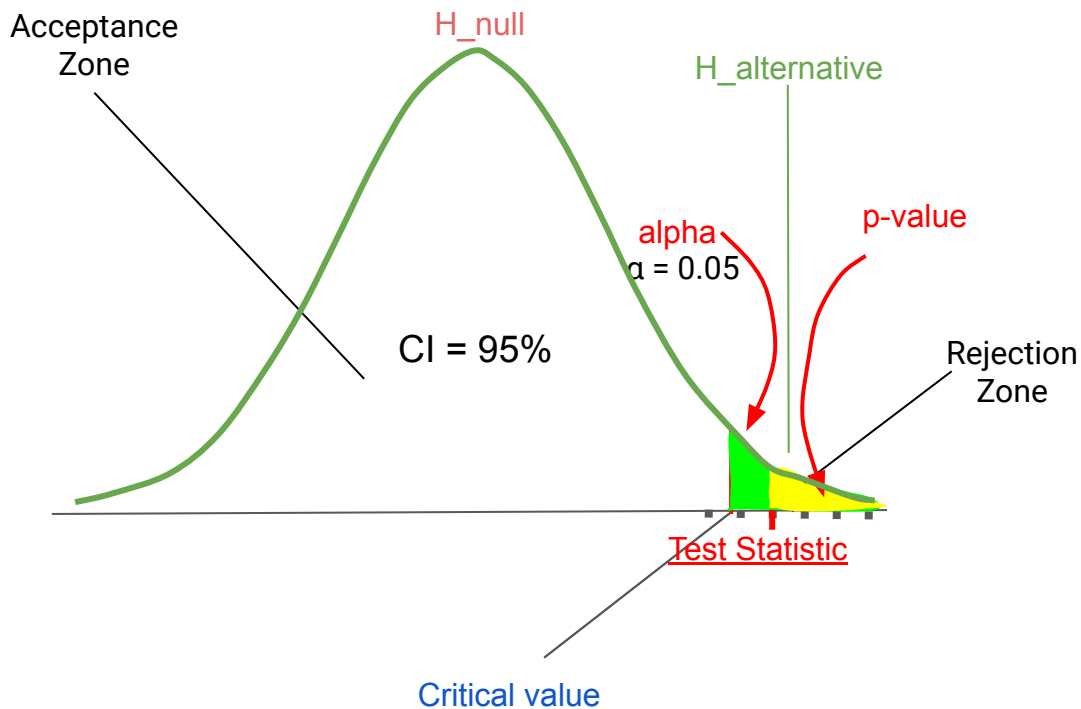
α is the area of critical region

The p-value is the area to the right of the test statistic

When test statistic in acceptance region -----> $p\text{-value} < \alpha$

Fail to reject H_0

p-value



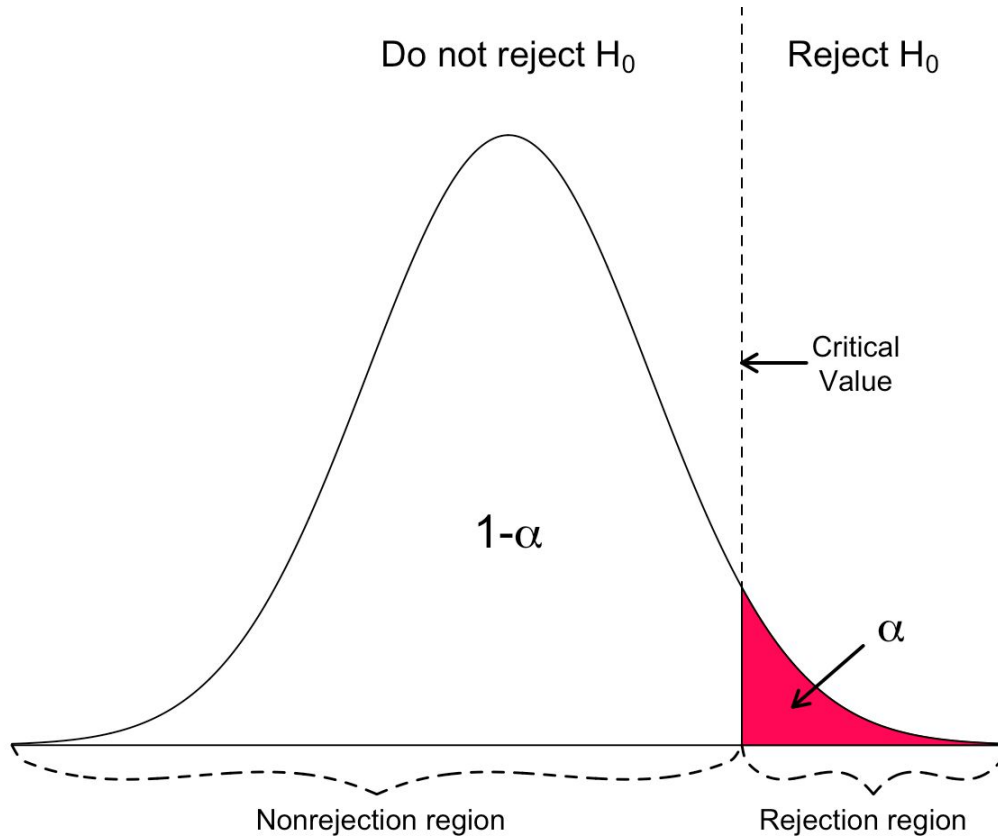
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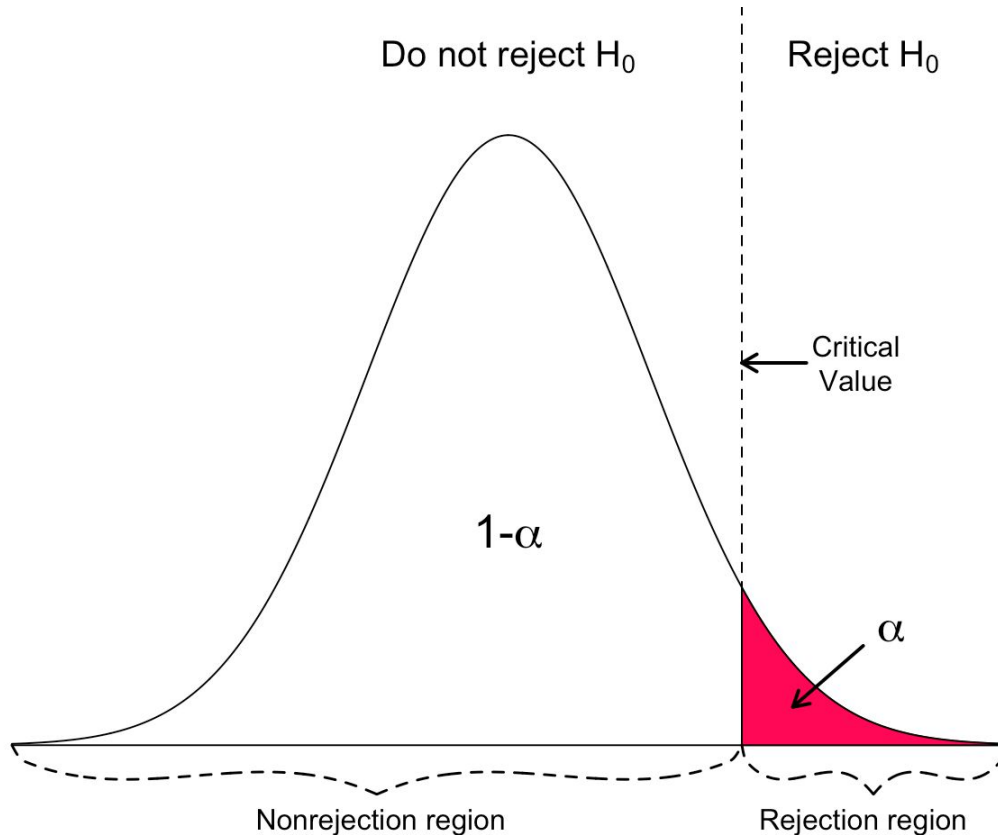
When test statistic in critical region,
 $p\text{-value} < \alpha$

Reject H_0

Directional Hypothesis



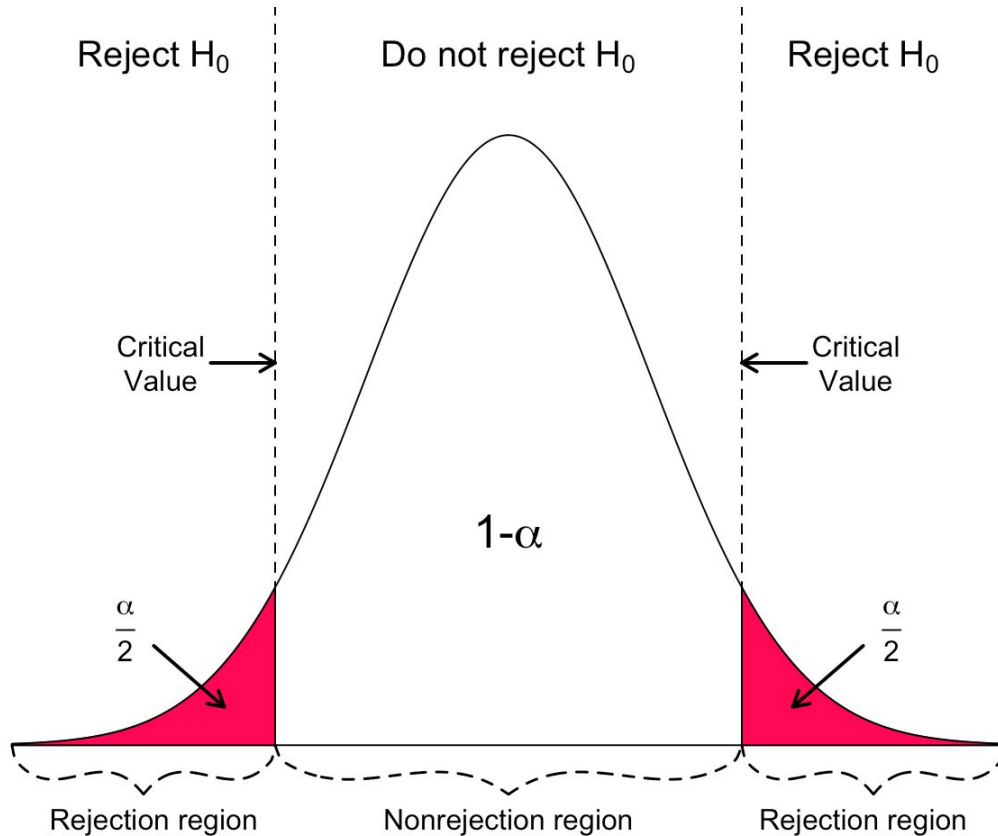
Directional Hypothesis



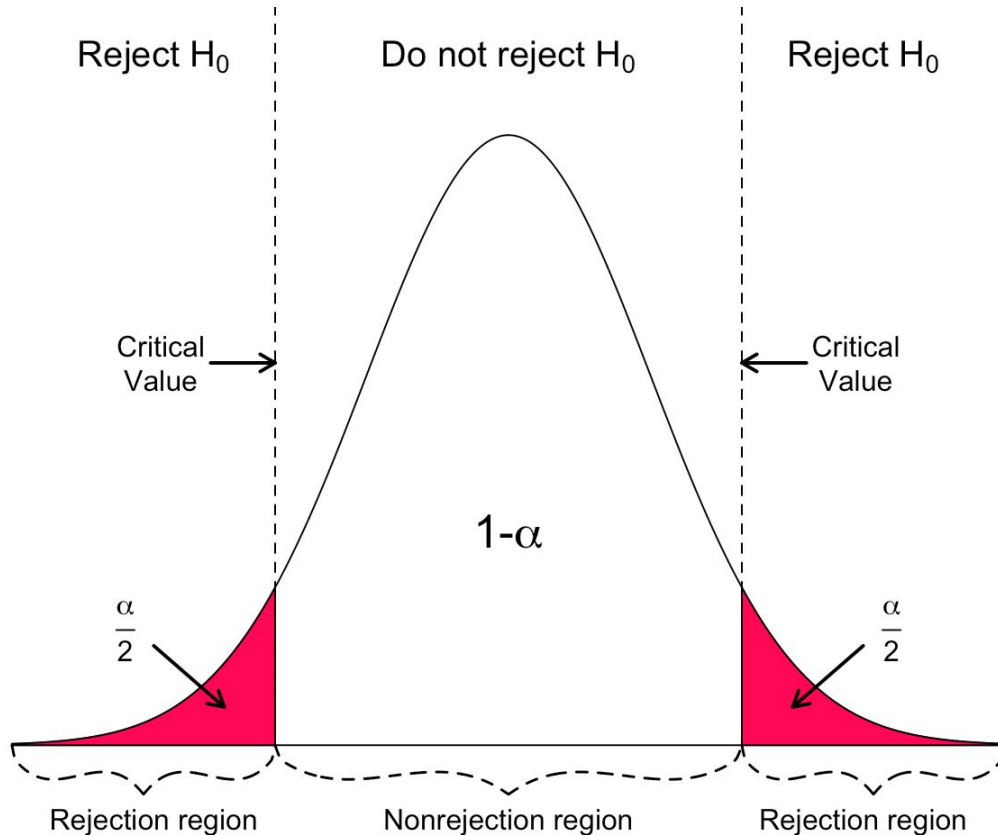
Ex. Females will score significantly higher than Males on IQ score



Non Directional Hypothesis



Non Directional Hypothesis



Ex. Females will score significantly different than Males on IQ score



Thank You!