

Avoiding testing missteps

Stat 250

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**Statistical
significance**

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**If you run multiple
tests, make
adjustments**

Example

Suppose you want to run k hypothesis tests, each at the $\alpha = 0.05$ significance level.

Assume that the tests are independent.

What is the overall probability of making a type I error?

Sidak correction for α

Let α be the desired type I error rate for k tests.

Use $\alpha^* = 1 - (1 - \alpha)^{1/k}$ as the significance level for each test.

Don't p-hack

John Oliver P-Hacking

