More on Hypothesis Tests

Previously, we've talked about how to make a conclusion for a hypothesis test based on whether or not the p-value is less than 5%. We've done this by calculating the test statistic and using it to find the p-value. If the p-value is less than 5%, we reject the null hypothesis and call the result "statistically significant."

We can also do the same thing by looking at the critical value. In hypothesis testing, a **critical value** is a point on the test distribution that is compared to the test statistic to determine whether to reject the null hypothesis. If the absolute value of your test statistic is greater than the critical value, you can declare statistical significance and reject the null hypothesis.

Example with the Young Guy and Angry Guy again:

Another way to determine statistical significance is to use confidence intervals. **If you do a hypothesis test and calculate the confidence interval, these results will agree.**

The confidence level is equivalent to 1 – the alpha level. So, if your significance level is 0.05 or 5%, the corresponding confidence level is 95%. Here's how statistical significance relates to confidence intervals

- **If the confidence interval does not contain the null hypothesis value, the results are statistically significant and the p-value will be less than alpha.**

ACT Example again: