



Intro to Stats
Paired t-tests

The illustration shows a man in a suit and glasses, looking thoughtful. He is surrounded by numbers (1, 2, 3, 4, 5, 6, 7, 8) and a musical staff with notes, suggesting a connection between statistics and music. The numbers are arranged in a circular pattern around the man, and the musical staff is on the right side. The man's signature 'WKOZAK' is visible in the bottom left corner of the illustration.

Paired t-tests

- ▶ Difference in two average scores on the same measure in the same group
- ▶ Each participant tested twice
- ▶ Same outcome tested in each group

The idea

Time1 score - Time2score

Spread

- ▶ t is increased (likely significant) when:
 - Differences between two time points are large
 - When spread is very small

Calculating

$$t = \frac{\Sigma D}{\sqrt{\frac{n\Sigma D^2 - (\Sigma D)^2}{n-1}}}$$

ΣD = sum of differences between scores

n = number of pairs of scores