

Statistics One

Lecture 15

Student's t-test and ANOVA in R

Three segments

- Review of example
- Student's t-tests in R
- ANOVA in R

Lecture 15

Segment 1

Review of example

Working memory training

- Is it possible for adults to enhance their intelligence by training their working memory?

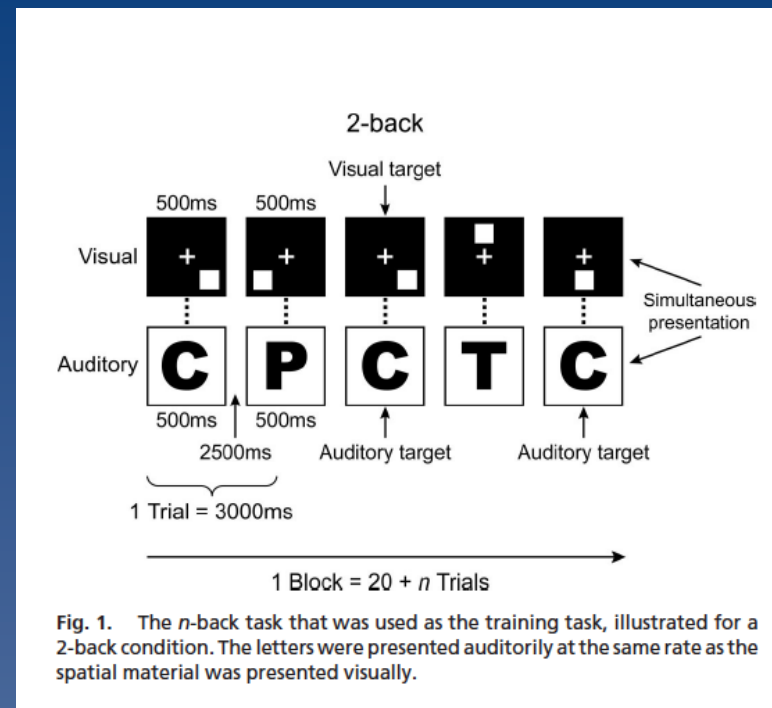
Working memory training

- Population
 - Healthy adults
- Sample
 - Random selection from the population
 - Representative of the population

Working memory training

- Procedure
 - Treatment group engaged in memory training for a half hour every day for weeks
 - See next slide
 - IQ change
 - All subjects completed a test of intelligence before and after training

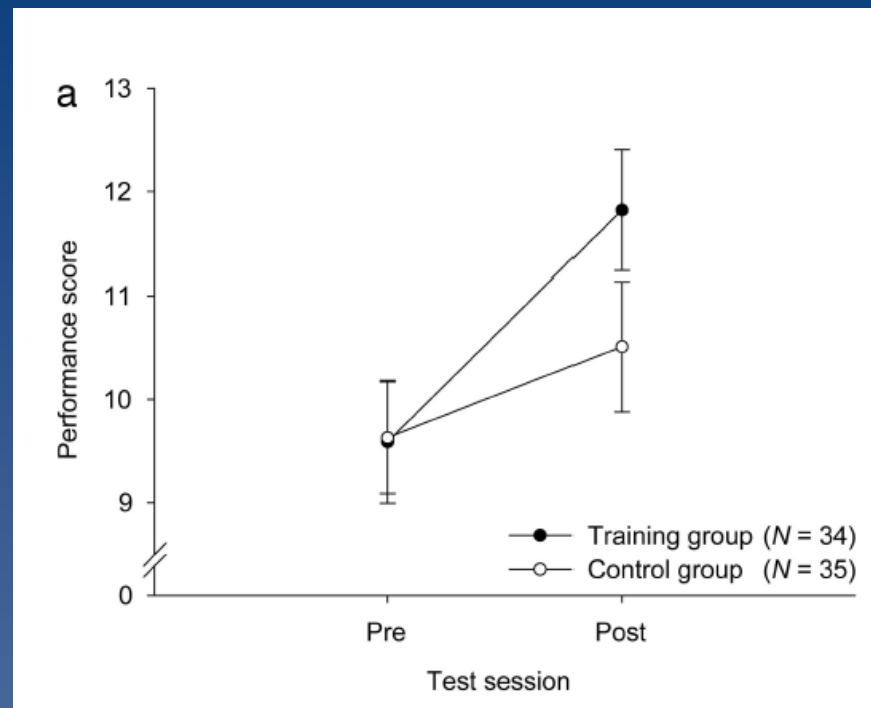
Jaeggi et al. (2008)



Results

- Results were reported two different ways
 - First approach
 - IV: WM training (training vs. control)
 - DV: Score on intelligence test (pre and post)

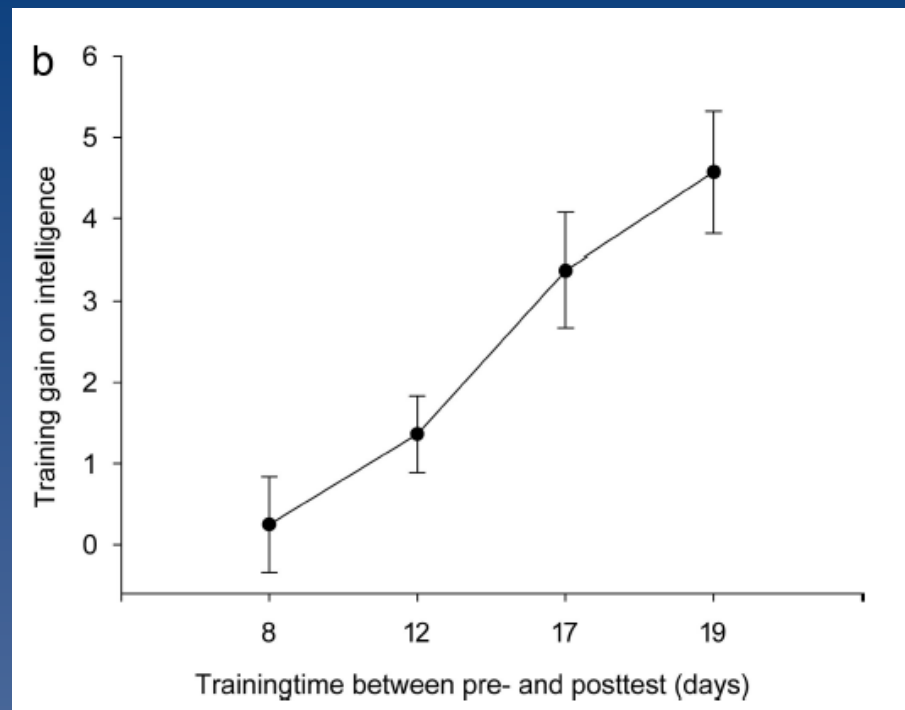
Jaeggi et al. (2008)



Results

- Results were reported two different ways
 - Second approach
 - IV: WM training (number of sessions)
 - DV: Gain on intelligence test (post - pre)

Jaeggi et al. (2008)



To illustrate dependent t

- Write a script in R
 - IV: Pre and post
 - DV: Score

To illustrate independent t

- Write a script in R
 - IV: Training group (control, training)
 - DV: Gain

To illustrate ANOVA

- Write a script in R
 - IV: Training group (8, 12, 17, 19)
 - DV: Gain