

Research Methods (Psy 365)

Single Subject Designs



What We Will Cover in This Section

- Overview.
- Issues and Benefits.
- Designs.
- Requirements and assumptions.



What Are They?

Research designs where $N=1$.

Problems

1. Lack of generalizability.
2. Lack of experimenter control.
3. Time to conduct.

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Benefits

1. Ethics of withholding treatment from control groups.
2. Where to find large samples.
3. Individual data may be lost in a group...treated as error.
4. Develop in depth information.

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Terminology

- Baseline (A)
The preliminary assessment the participant's behavior on the dependent variable. This is usually done over a specific time period.
- Treatment (B, C, D)
Assessment of the person's behavior during treatment condition. This is usually done over a specific time period.

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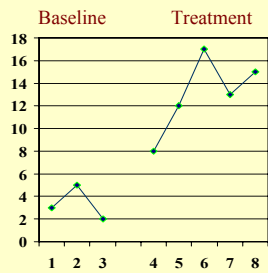
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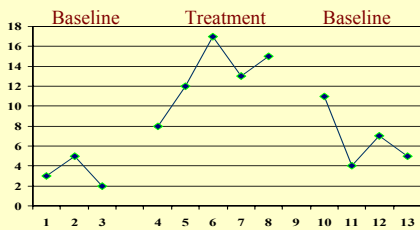
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A-B Design

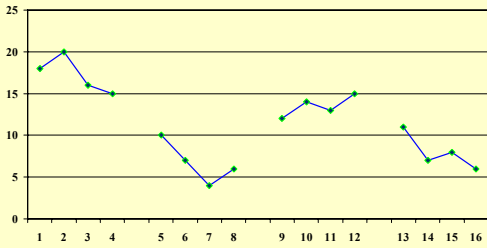
- Baseline then treatment.



Simple Reversal: A-B-A



Multiple Independent Variables: A-B-A-C

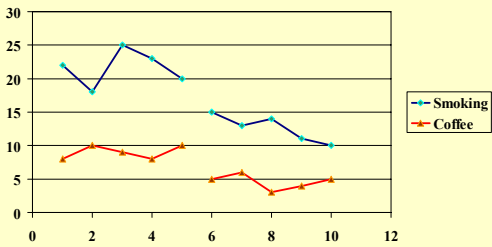


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Multiple Baseline

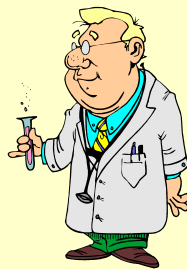


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Issues and Considerations



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Issue #1: Stable Baseline

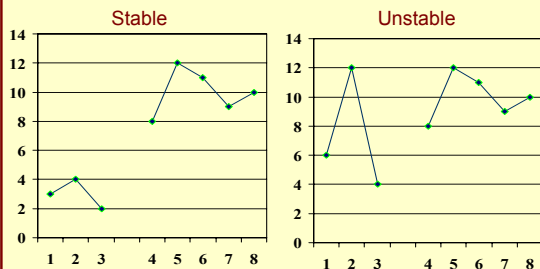
- It is important that there be no trend in the baseline otherwise the treatment effect may be obscured.
 - Low variability.
 - Baseline trends.

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Baseline Variability

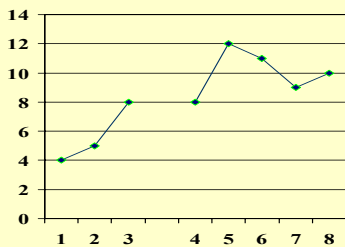


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Baseline Trends



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Issue #2: Qualitative Data Analysis

- What to do.
 - *A priori* patterns.
 - Theoretical model.
- Issue.
 - Confirmation bias.

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Issue #2: Quantitative Data Analysis

- Eyeball statistics
 - Inspect the graph.
- Statistical analysis.
- Issue.
 - How to quantify some data?

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Issue #3: Measurement

- Reliability and validity.
 - Interrater reliability.
 - Measuring the right thing the right way?
- Multiple dependent measures.
- Multiple sources of data.
 - Self-report.
 - Observers.
 - Records.
- Measurement frequency.

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Issue #4: Interpreting Impact

- The greater the change, the more likely it was the treatment effect.
- Treating chronic vs. acute conditions.
- Immediate effect is more influential than delayed change.

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Issue #5: Replications

- Same conditions.
- Different conditions.

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