

Research Methods in Psychology

Single Subject Designs



What We Will Cover in This Section

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



What Are They?

Research designs where $N=1$.

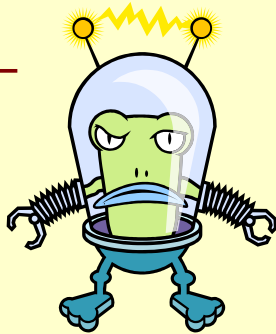
Problems

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

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.

Designs



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.

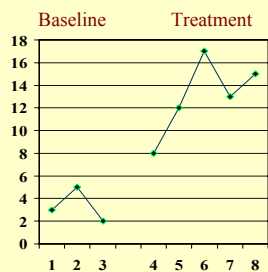
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A-B Design

- **Baseline then treatment.**

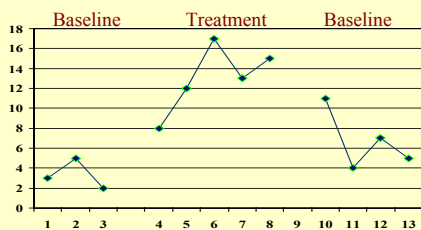


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Simple Reversal: A-B-A

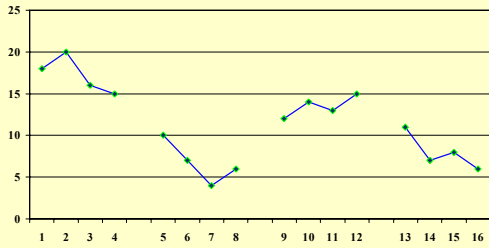


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Multiple Independent Variables: A-B-A-C

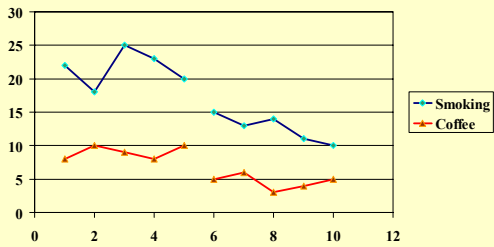


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Multiple Baseline

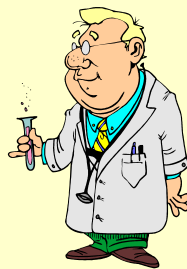


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Issues and Considerations



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Issue #1: Stable Baseline

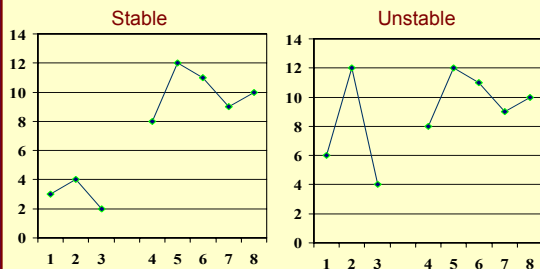
- It is important that there be no trend in the baseline otherwise the treatment effect may be obscured.
 - Low variability.
 - Baseline trends.

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Baseline Variability

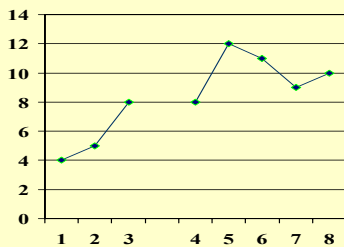


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Baseline Trends



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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?
 - Instrument decay
- 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 #6: Replications

- Same conditions.
- Different conditions.

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