Single Subject Designs

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Single Subject Designs

“studying a small number of participants and focusing closely on each individual” (pg. 272)

- Usually a sample of 2 to 10 participants
- Quantitative
- Not a case-study
- Involves providing some form of treatment
- Can be used in any psych field (but mostly in behavioral research)
Assumptions

Three main assumptions exist

**Importance of Individual Behavior**
- Group research can hide individual differences
- Changing behavior of individual may be most important

**Importance of Causal Relationships**
- Single Subject designs have good internal validity overall
- Approaches like ABA or the likes help

**Importance of Strong and Consistent Effects**
- “Applied researchers, in particular, are interested in treatments that have substantial effects on important behaviors and that can be implemented reliably in the real-world contexts in which they occur” (pg. 275)
Designs

There are several ways of designing a single subject design with two main categories: Reversal Designs and Multiple Baseline Designs.
Designs
There are several ways of designing a single subject design with two main categories

**Reversal Designs**
Baseline, treatment, then baseline again

Examples include:
- ABA
- ABCACB

**Multiple-Baseline Designs**
When Reversal doesn’t work (e.g., it is unethical), introduce treatment at different times for each participant
Reversal Designs
Multiple Baseline Designs
Apply it

The generation effect refers to the fact that people who generate information as they are learning it (e.g., by self-testing) recall it better later than do people who simply review information.

Design a single-subject study on the generation effect
Single Subject or Groups

Some things to consider

Data Analysis

Is visual inspection enough for single subject designs? How do researchers minimize problems?
No summary statistics that can be meta-analyzed in single subject designs?
Are group analyses, with their focus on means, meaningful? How do researchers minimize problems?

External Validity

Can single subject research be generalized to the population?
How do single subject researchers help show external validity?
Are group analyses immune to problems of external validity?
Some more things to consider

They are complimentary

Should be based on the specific research questions

They stem from different research traditions

Both can answer questions in ways the other cannot

If the question is focusing on individuals, then single subjects may be a better approach

If the question is about how a treatment will impact most people, group analyses may be better

This is often the most pressing reason researchers pick the approach
Imagine you have conducted a single-subject study showing a positive effect of a treatment on the behavior of a man with social anxiety disorder. Your research has been criticized on the grounds that it cannot be generalized to others. How could you respond to this criticism?

Imagine you have conducted a group study showing a positive effect of a treatment on the behavior of a group of people with social anxiety disorder, but your research has been criticized on the grounds that "average" effects cannot be generalized to individuals. How could you respond to this criticism?