



SPCD 619
Class 8




Building Blocks

All experimental designs, including single-case designs, use a logic of planned comparisons: comparing at least 2 experimental conditions (their effect on a dependent variable[s]).



All single case designs are variations of using A and B phases (conditions) to make planned comparisons.

A = baseline; B=some type of intervention

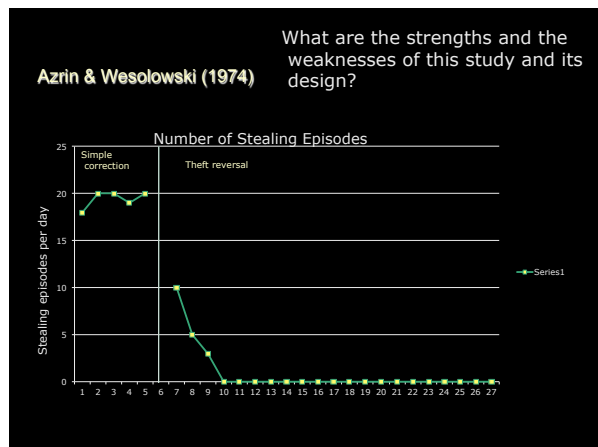


Replication is used to control for threats to internal validity.

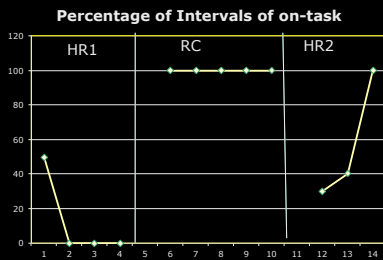
A-B design is the most basic single case design.

It is **not** an experimental design and cannot be used to demonstrate a functional relation. Can only provide “weak correlational conclusions”.

It is useful for clinical and educational settings.



◆ An A-B-A design is the minimum experimental design (demonstration of causality).



Would this design meet WWC evidence standards? Why? Why not?

Christle & Schuster, 2003

◆ An A-B-A-B design is the preferred design because it:

- Demonstrates a functional relation when the DV returns to baseline levels when the intervention is withdrawn
- Permits 3 demonstrations at 3 different points in time
- Ends on a successful/beneficial note

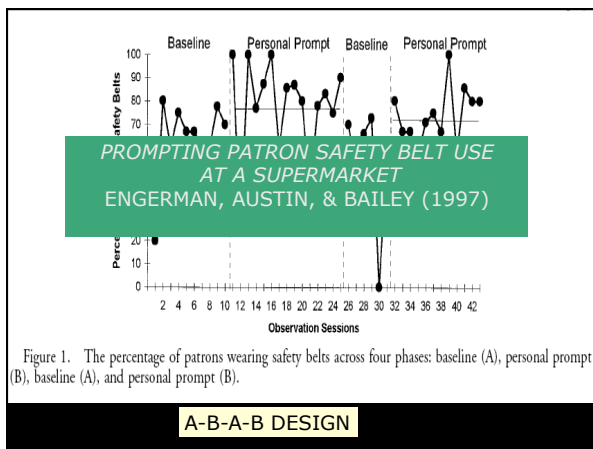


Figure 1. The percentage of patrons wearing safety belts across four phases: baseline (A), personal prompt (B), baseline (A), and personal prompt (B).

A-B-A-B DESIGN

Ethical and practical questions to consider when deciding to use a withdrawal design:

- ◆ Can the target behavior (DV) be reversed?
- ◆ Is it ethical to do so?

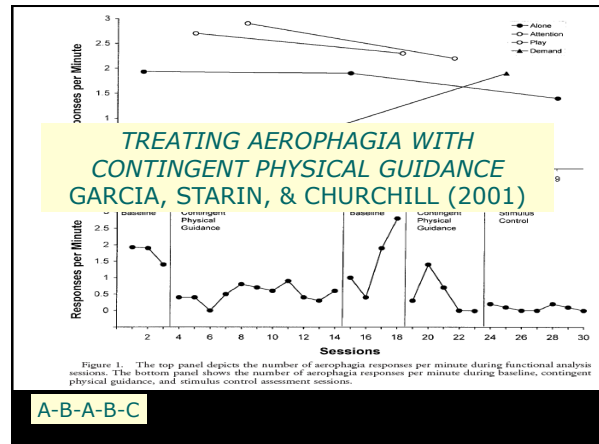
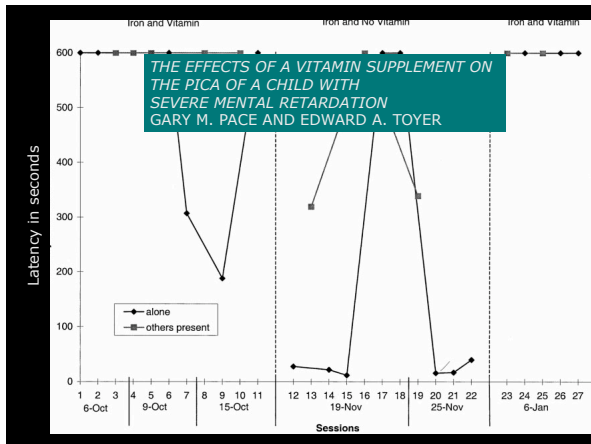


Figure 1. The top panel depicts the number of aerophagia responses per minute during functional analysis sessions. The bottom panel shows the number of aerophagia responses per minute during baseline, contingent physical guidance, and stimulus control assessment sessions.

A-B-A-B-C

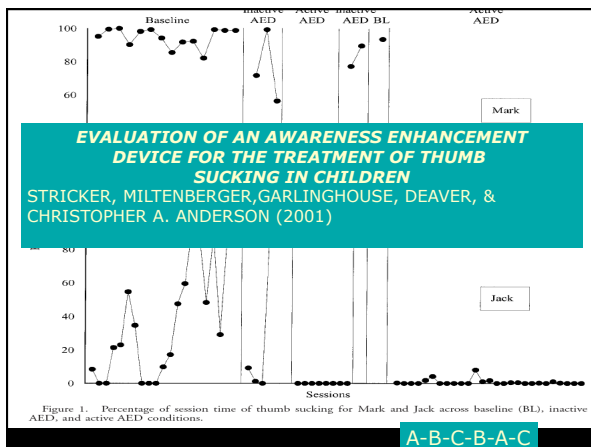


Figure 1. Percentage of session time of thumb sucking for Mark and Jack across baseline (BL), inactive AED, and active AED conditions.

A-B-C-B-A-C

Consider these in implementing a withdrawal design:

- ◆ Data in each phase must demonstrate stability before moving to next phase.
- ◆ Conditions must be re-introduced and effects replicated in a similar manner.
- ◆ Should have a plan to minimize sequence effects.

Summary of Withdrawal Designs (Richards et al., 1999)

Appropriate to Use When:

A clear functional relationship between IV and DV needs to be demonstrated

Target behavior can be reversed with IV is withdrawn

IV is such that its effects are not present on the DV after the IV is withdrawn

It is not unethical to withdraw the intervention

Not appropriate to Use When:

DV is not reversible

Treatment effects will continue after IV is withdrawn

It isn't educationally/clinically desirable for the target behavior to return to baseline levels

Withdrawing effective treatment (IV) would be unethical (e.g., dangerous behavior)

Coming Up
Week 9



Discuss Multiple Baseline and Multiple Probe Designs. What kind of research questions are they best used to address? Strengths? Weaknesses?

Guest Speaker: Dr. Ann-Marie Orlando
 Read: Gast Chapter 11 Ross & Horner (2009); Ledord et al. (2008). Rob will lead the discussion of the Ross & Horner article.
TURN IN: Take Home Quiz 1