# Single Subject Designs

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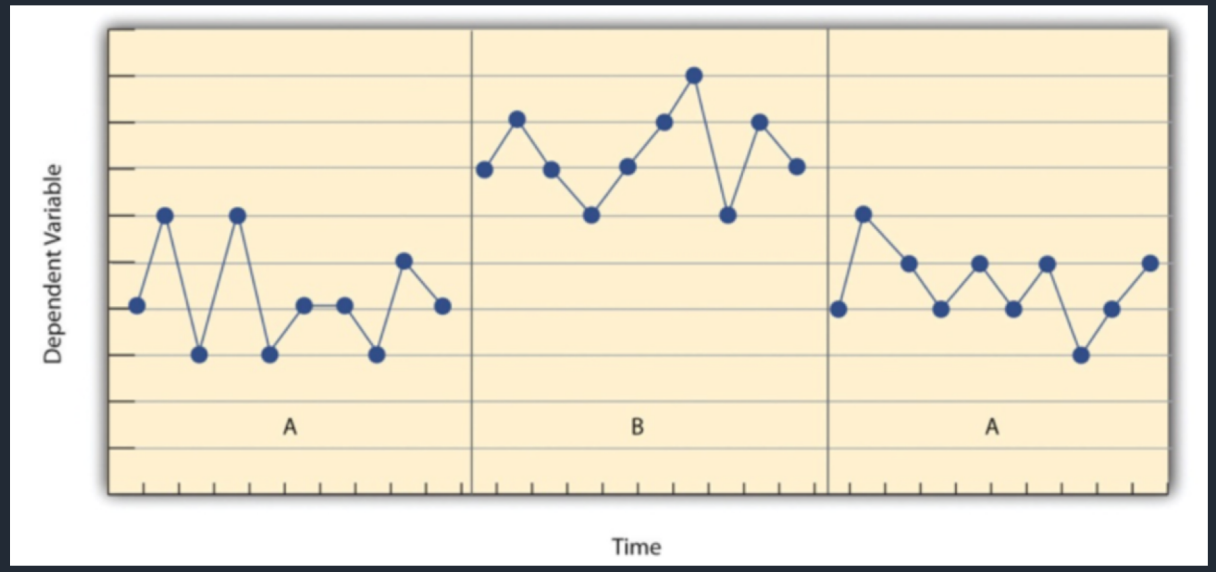
# Single Subject Designs

"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

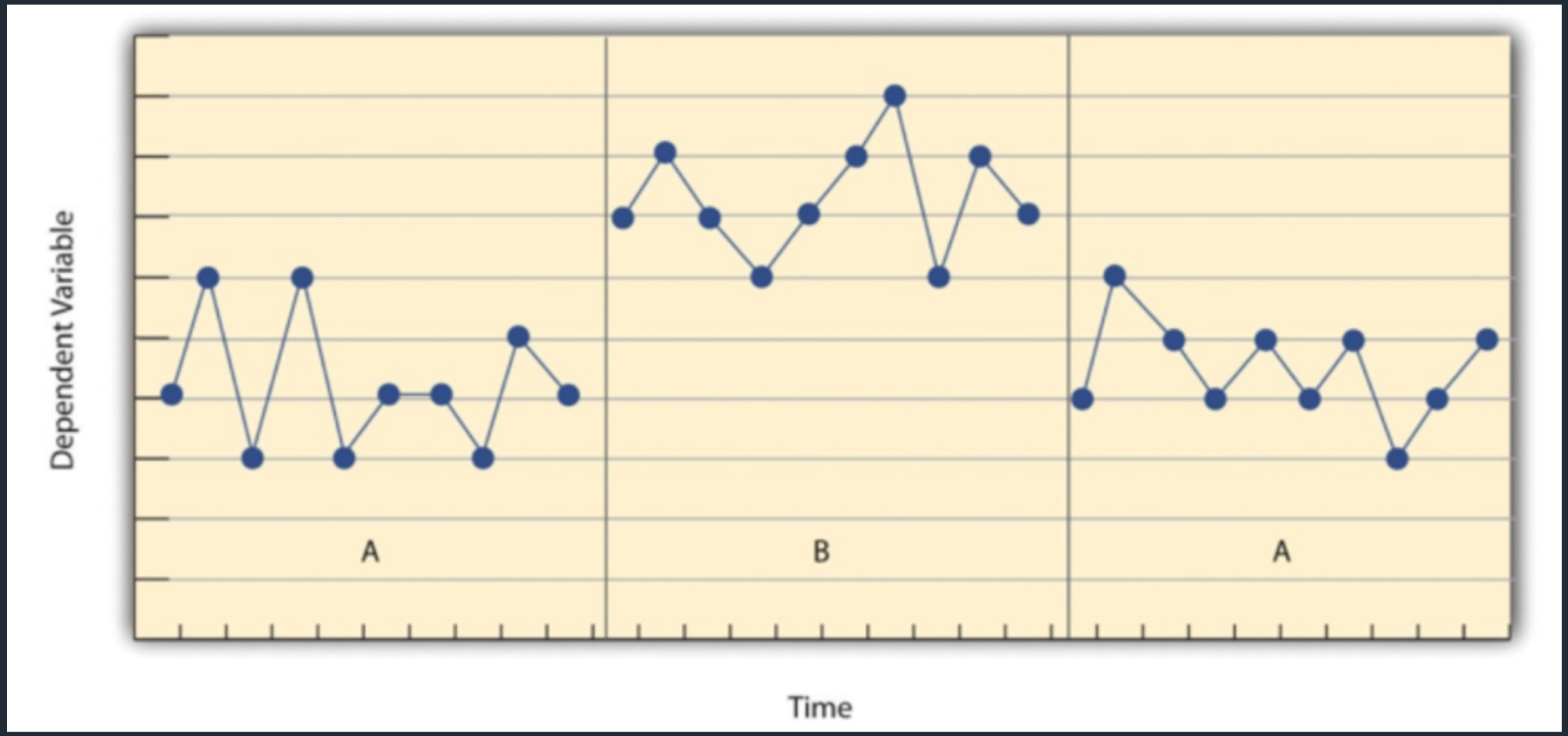
- Single Subject designs have good internal validity overall
- Approaches like ABA or the likes help

## 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



# Designs

There are several ways of designing a single subject design with two main categories

## Reversal Designs

Baseline, treatment, then baseline again

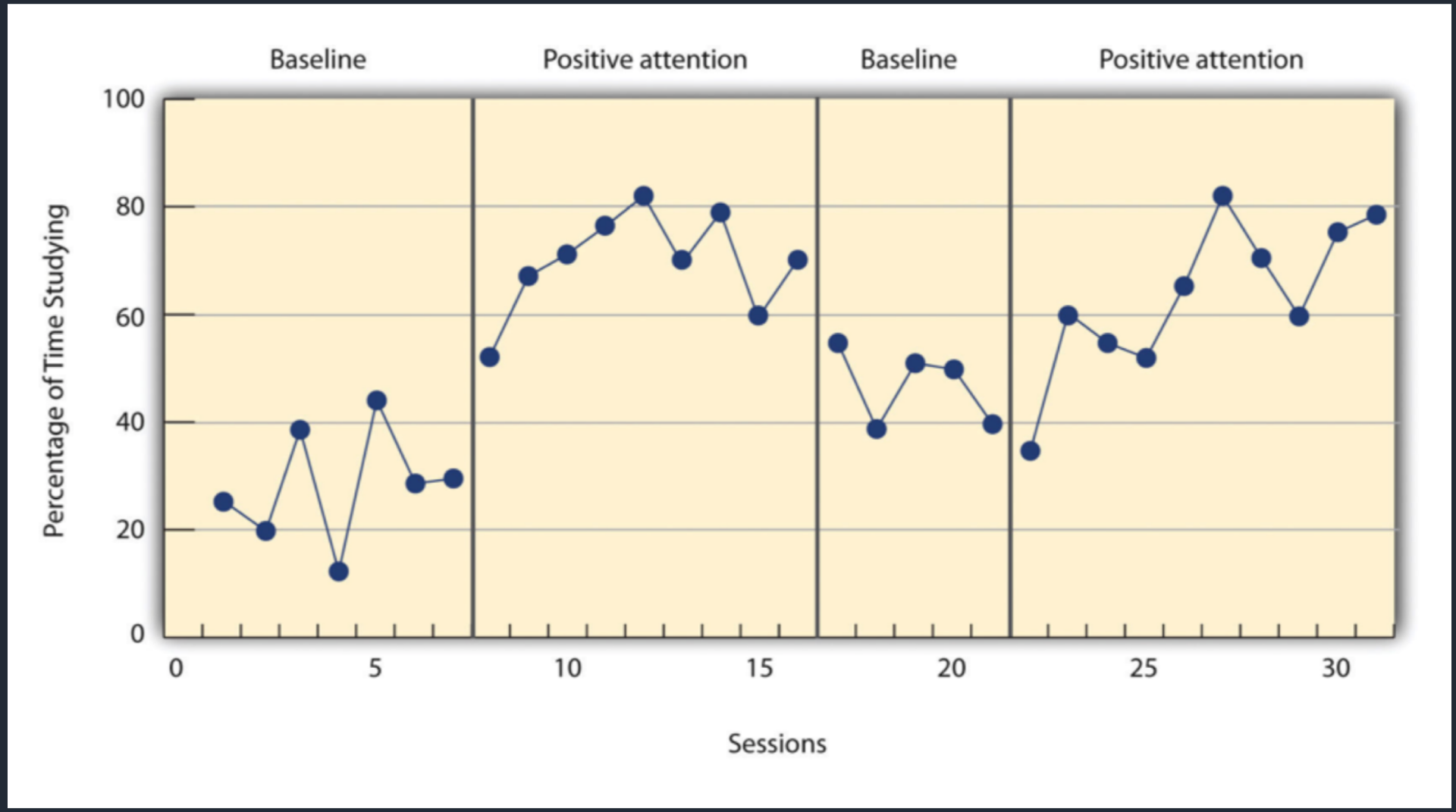
Examples include:

- ABA
- ABCACB

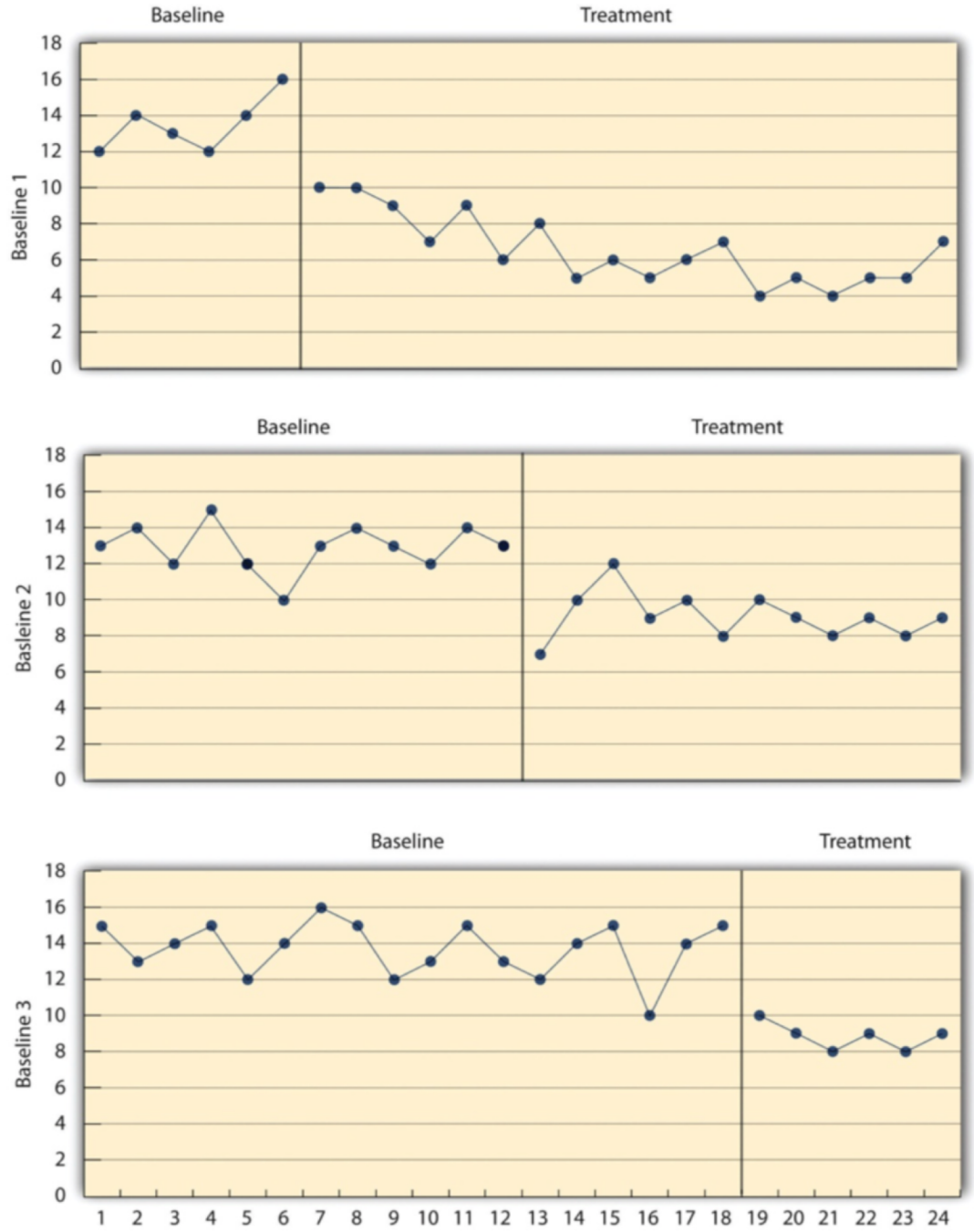
## Multiple-Baseline Designs

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 researcher 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?

# It is not single subjects vs. groups

Some more things to consider

**They are complimentary**

Both can answer questions in ways the other cannot

**Should be based on the specific research questions**

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

**They stem from different research traditions**

This is often the most pressing reason researchers pick the approach

# Defend yourself!

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?