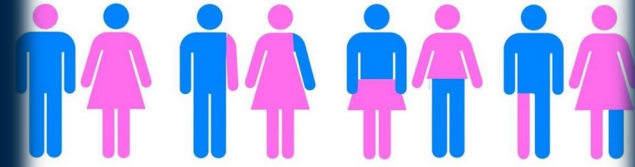


# Quasi-Experiments & Small- $N$ Designs



# Why Quasi-Experiments?



## Quasi-Experiments allow us to...

- Capitalize upon naturally-occurring events or situations
- Avoid ethical problems

## BUT...

- The researcher has no control over the independent variable  
(which is why it's called a *quasi*-independent variable)



# Terminology

1

Quasi

“resembling”

2

Nonequivalent  
Control Groups

Two or more groups of  
participants that didn't use  
random assignment

3

$N$

Population size

# The Four Types of Quasi-Experiments



Nonequivalent control group  
posttest-only design

*Independent-Groups Designs*



Nonequivalent control  
group pretest/posttest  
design



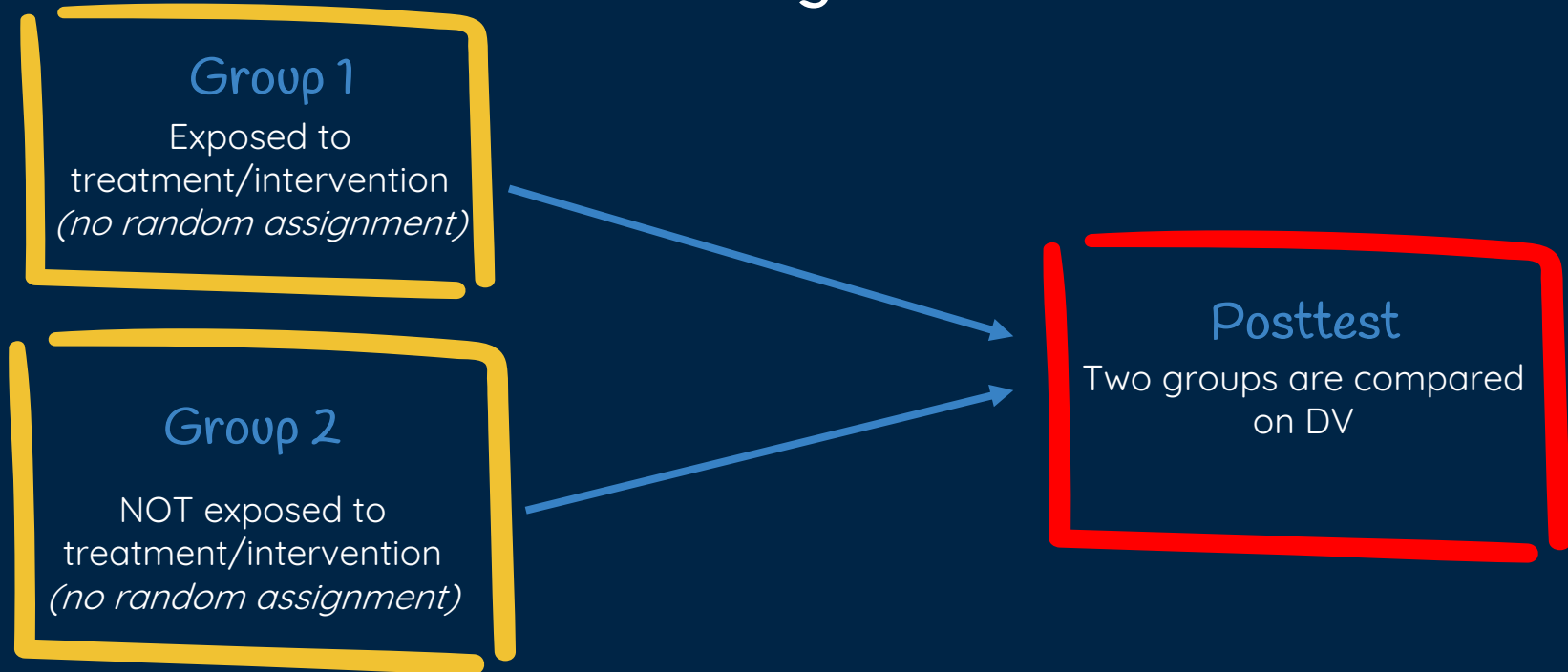
Interrupted time-series  
design

*Within-Groups Designs*



Nonequivalent control group  
interrupted time-series design

# Nonequivalent Control Group Posttest-Only Design



# Nonequivalent Control Group Pretest/Posttest Design

## Pretest

Two groups are compared on DV *before*

## Group 1

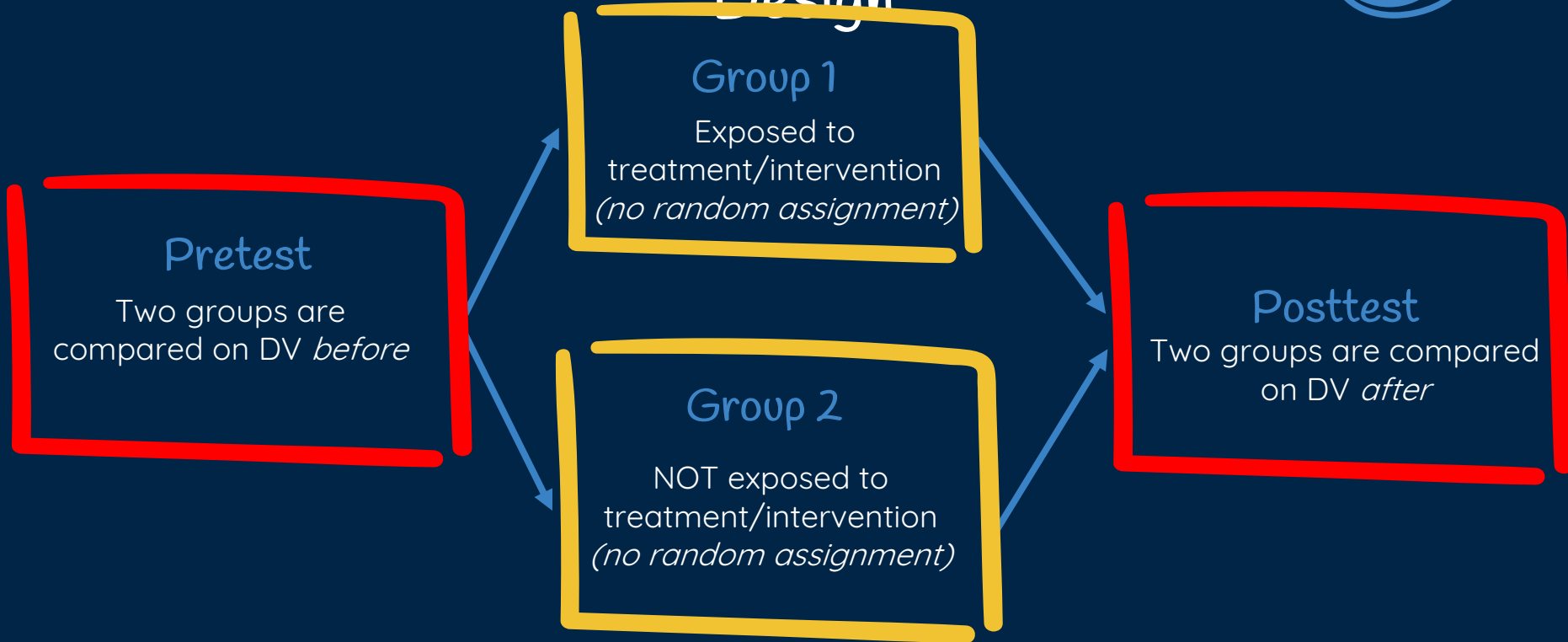
Exposed to treatment/intervention  
(no random assignment)

## Group 2

NOT exposed to treatment/intervention  
(no random assignment)

## Posttest

Two groups are compared on DV *after*



# Interrupted Time-Series Design

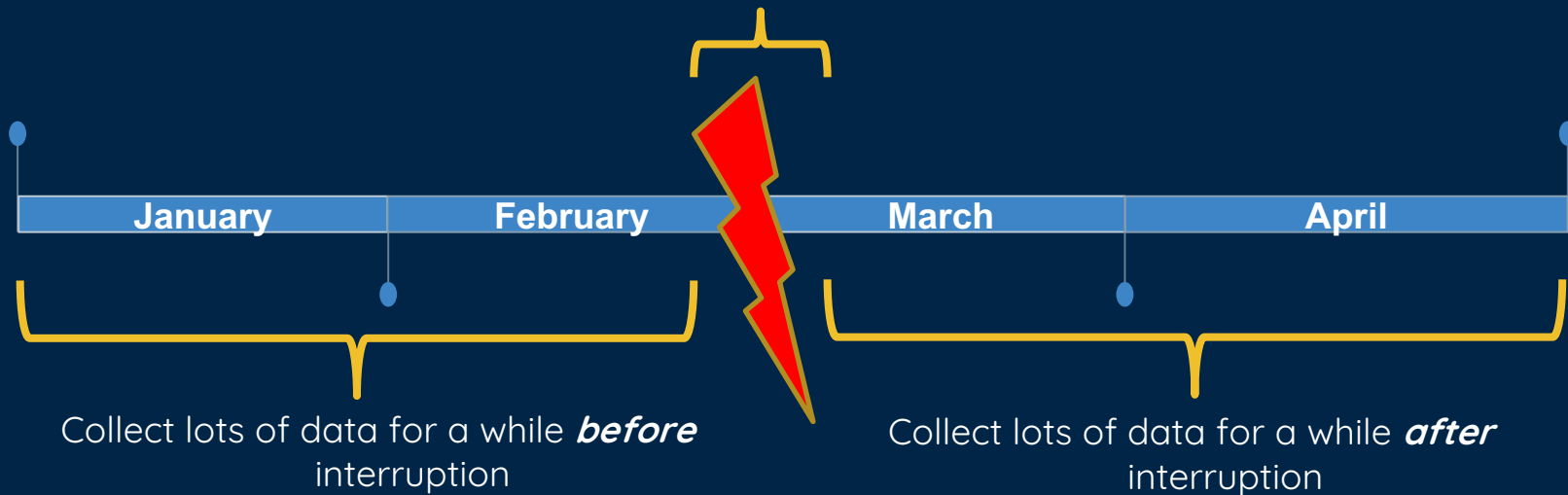


One Group

(no random assignment)

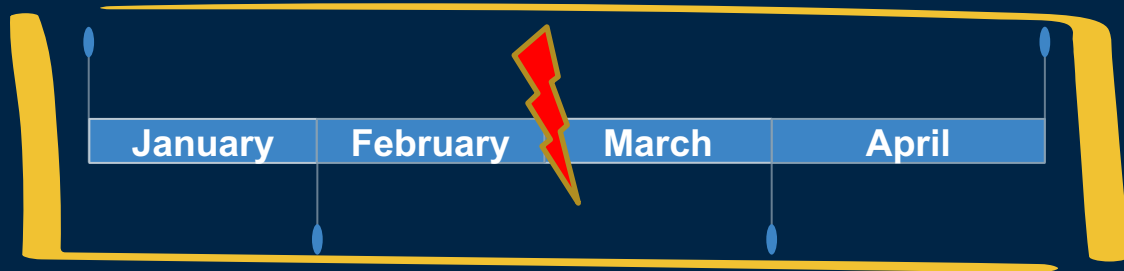
**INTERRUPTION**

Collect lots of data *during* interruption

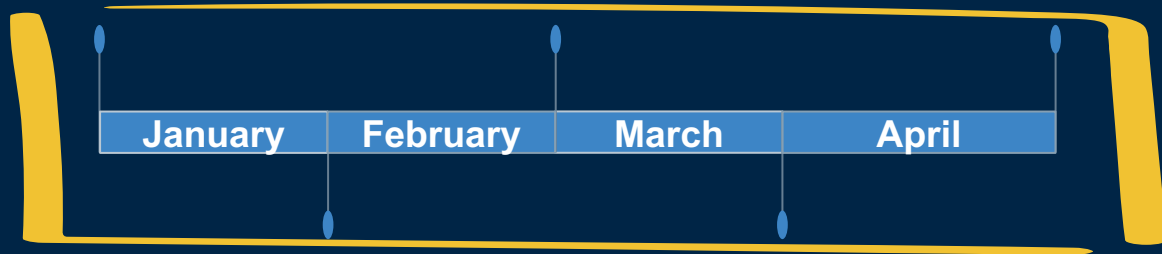


# Nonequivalent Control Group Interrupted Time-Series Design

Group 1  
(no random assignment)



Group 2  
(no random assignment)







Your Turn





2

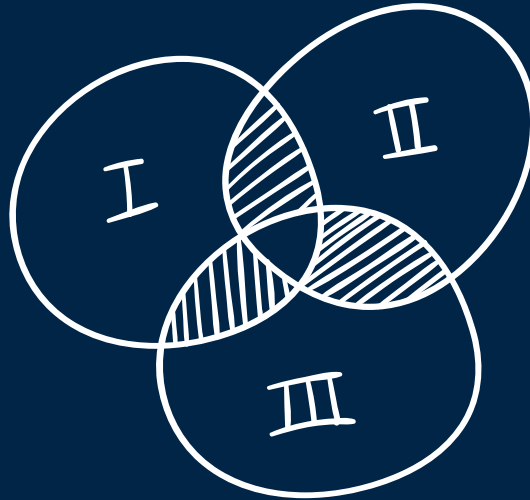
# Small- $N$ Designs

Studying only a few individuals

# Small-*N* Designs

## Stable-Baseline

Researcher observes behavior for extended baseline period before beginning a treatment or other intervention, and continues observing behavior after the intervention

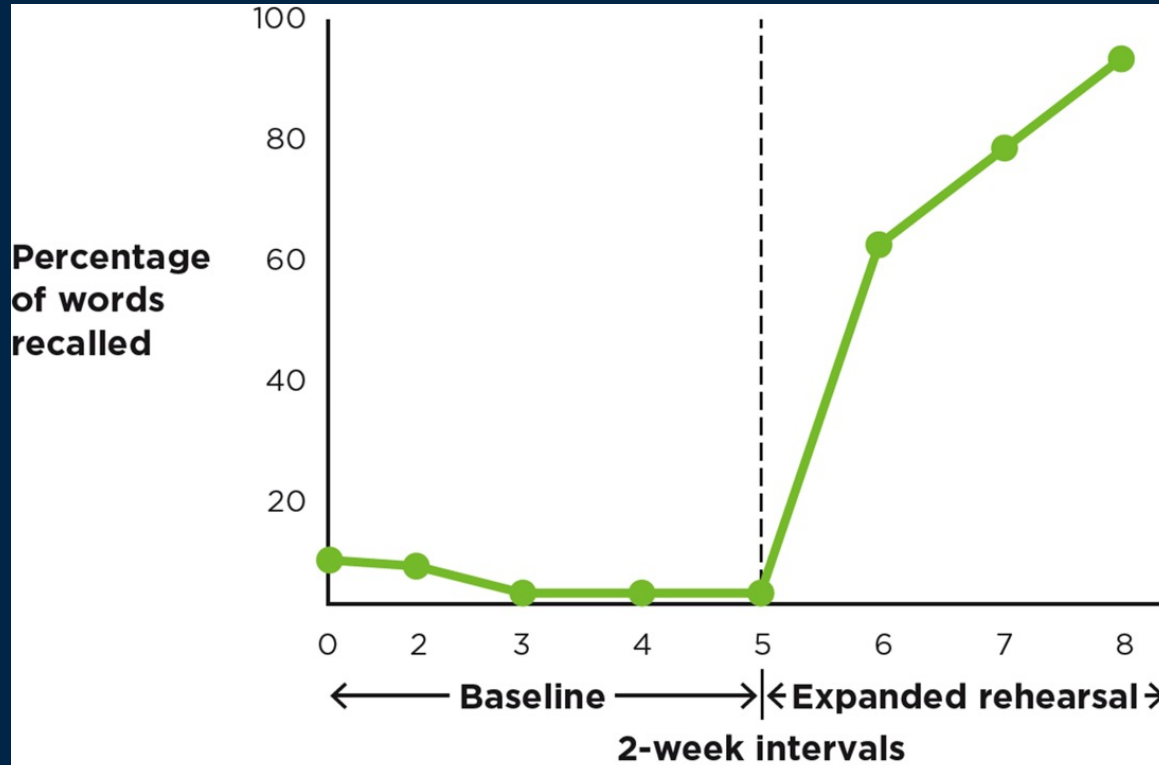


## Multiple-Baseline

Researchers stagger their introduction of an intervention across a variety of contexts, times, or situations

## Reversal

Researcher observes a problem behavior both before and during treatment, and then discontinues the treatment for a while to see if the problem behavior returns

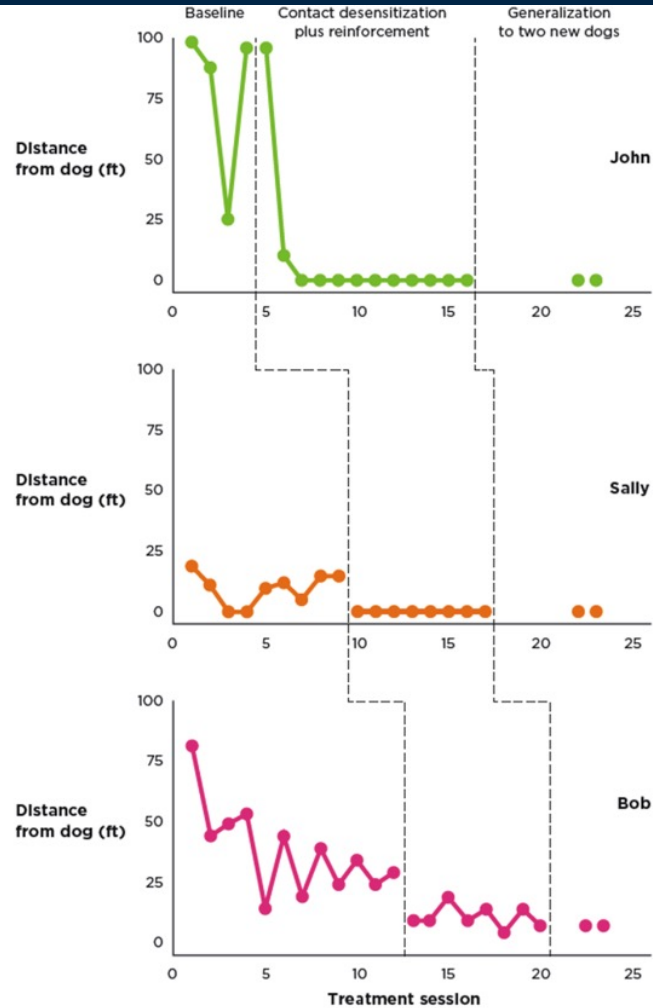


**FIGURE 13.12**

Copyright © 2021 W. W. Norton & Co., Inc.

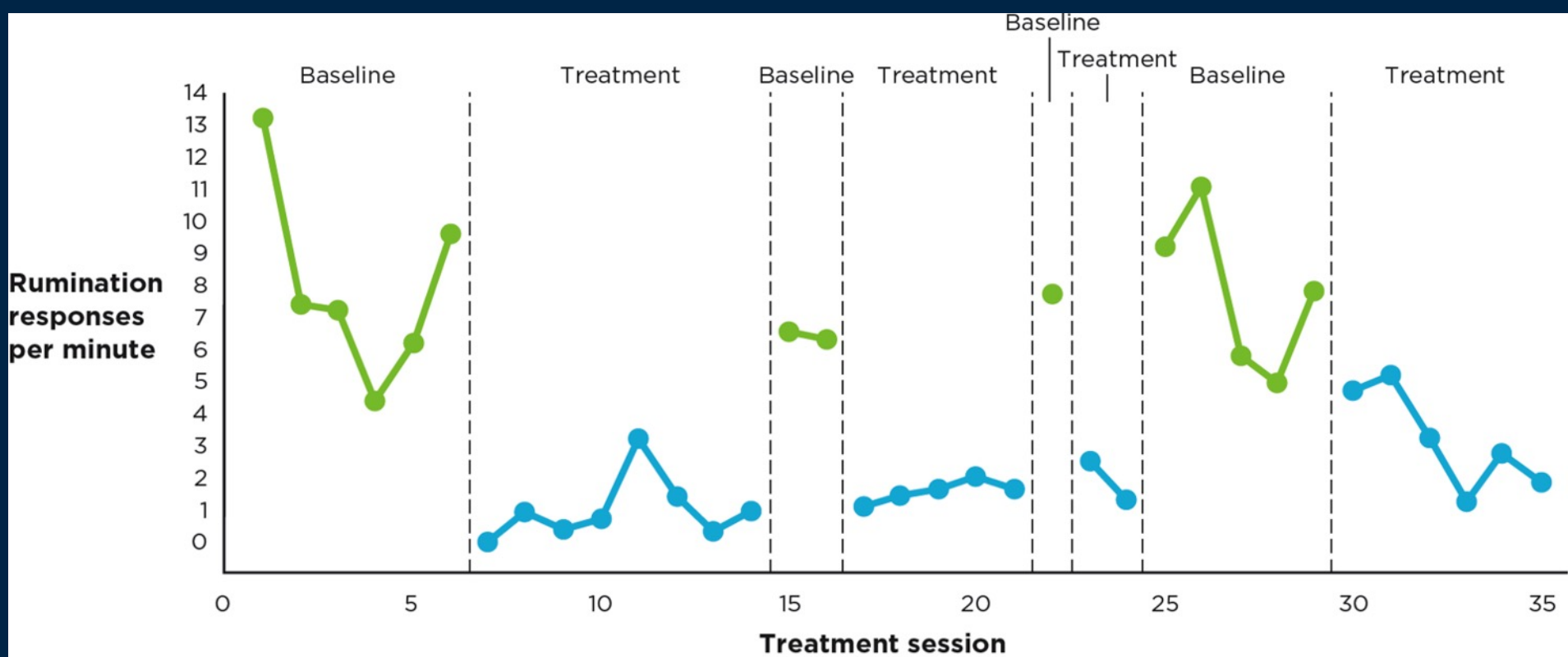


## Stable-Baseline Design



## Multiple-Baseline Design

FIGURE 13.14



**FIGURE 13.15**

Copyright © 2021 W. W. Norton & Co., Inc.

## Reversal Design

## Practice!

Suppose you're a dog owner and are working with your 3-year-old Labrador retriever. When the dog goes for walks, he growls fiercely at other dogs. You want to reduce your dog's growling behavior, so you decide to try a technique you learned on television: pressing firmly on the dog's neck and making a forceful, quick "Shhhhh!" sound when the dog begins to growl at other dogs. You decide to apply a small-N design to investigate the effectiveness of your training regimen.

- a. Which small-N design(s) would be appropriate for this situation?
- b. Choose one small-N design, and describe how you would conduct your study.
- c. Sketch a graph of the results you would predict from your design if your treatment worked.
- d. Explain whether you could conclude from your study's results that the treatment caused your dog's aggressive behavior to decrease.



# Before we go...



Write down:

1. One thing you understand really well after today's class.
2. One thing that's still muddy for you.

