

Single Subject Methods: The Power of Single Case Experiments for Clinicians

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Successive Translation and Translation on Demand

- This year we will have successive translations of the lectures
- But also do not hesitate to raise hand at any time for translation on demand.
- If you need a translation, others might too!

- This is a course on the **scientific methods** used in applied behavior analysis
- Our purpose in this course is to teach you how to solve problems that applied behavior analysts address as scientist/practitioners.
- The Power of Single Case Experiments for Clinicians

Autism and Other Developmental Disabilities

- I assume that most of you are interested in Autism, is that right?
- I'm further assuming that you have learned that Applied Behavior Analysis has found the most effective treatments of autism, is that right?

So How Do We Know

- How do we know it works to treat autism?

How We Know:

- Because hundreds of single-case experiments have shown that when ABA treatments are implemented with people with autism, effective changes occur in their behavior.
- That is what this course is about: the methods of science that have been used to gather evidence that ABA works.

- These methods have worked in other areas of Applied Behavior Analysis:
 - Behavioral Instruction
 - Organizational Behavior Management
 - Behavior Therapy
- So this course is on the **experimental methods** used in Applied Behavior Analysis
- Our purpose in this course is to teach you how to solve behavioral problems through experimentation.

According to Kazdin:



An experiment involves isolating particular phenomena for careful scrutiny by:

- manipulating a variable of interest while
- controlling extraneous factors that might otherwise influence the results

Is this a big deal?

Depende!!

Many people do **not** think science works for the kinds of complex human activity involved when we are working with clients.

Other Methods for Answering Questions

- Appeal to Assumed Authority
- Common Sense
 - Based on correlations
 - Based on confirmation bias-not tested with a sufficient range of examples
- Logic
 - All logical explanations are not necessarily valid, but all valid explanations are necessarily logical. In other words, **logic is not enough.**

Which of these autism treatments do you think are based on experimental science?

- Sensory Integration
- Pharmaceuticals
- Psychotherapy
- Occupational Therapy
- Light Therapy
- Chelation
- Diet (CFGF, hypotoxic,)etc.)
- Snoezelen rooms
- Speech and language
- Vitamins
- Chiropractic
- Hyperbaric Chamber
- Applied Behavior Analysis
- Facilitated Communication

- We take a perspective similar to Kazdin's:
 - The more complex the phenomena, the more important it is to use the methods of science to help understand it.
 - The methods of science are a way of thinking through complex problems.



Scientific Methodology teaches us to think about:

- the world in terms of **variables** that can be isolated and described,
- events **causing** or affecting something else,
- being **specific, analytic, and comparative,**
- **a universe of examples** to test our theories
- **consistency** between what we have observed and the conclusions or judgments we make about what we have observed.
- DO you Believe in Science?

Take a minute

- Do the methods of science work for the kinds of complex human activity involved in working with clients?
- Why or why not?
- Can you think of any examples of client behavior that can **not** be solved with scientific analysis?

So Is Everyone On-Board?



Syllabus

Goals and Objectives

- Goal: By the time you finish this course you will be prepared to design evaluations of behavioral interventions.
- This general goal translates into the following objectives:

Objectives

- Define and provide examples of behavior, response, and response class
- Establish operational definitions of behavior
- Distinguish among direct, indirect, and product measures of behavior
- Measure occurrence
- Measure temporal dimensions of behavior
- Measure form and strength of behavior
- Measure trials to criterion

- Design and implement sampling procedures
- Evaluate the validity and reliability of measurement procedures
- Select a measurement system to obtain representative data given the dimensions of behavior and the logistics of observing and recording
- Graph data to communicate relevant quantitative relations
- Interpret graphed data

- Distinguish between dependent and independent variables
- Distinguish between internal and external validity
- Identify the defining features of single-subject experimental designs
- Describe the advantages of single-subject experimental designs compared to group designs
- Use single-subject designs

- Behave in accordance with the ethics of behavior analysts and research
- Identify and prioritize socially significant behavior-change goals.
- State intervention goals in observable and measurable terms.
- Identify potential interventions based on assessment results and the best available scientific evidence.

- When a target behavior is to be decreased, select an acceptable alternative behavior to be established or increased.
- Monitor client progress and treatment integrity.
- Make data-based decisions about the effectiveness of the intervention and the need for treatment revision.

Dates

Topics

Oct 16

*Discussion: Defining
and measuring behavior*

measurement

Discussion: Observational

Oct 17

Discussion: Quality of measurement

Discussion: Experimental reasoning

Oct 18

*Discussion: Reversals and Alternating
Treatment Designs*

*Discussion: Multiple baseline and
Changing Criterion designs.*

Catch-up, prepare for test, and

feedback

Questions About the Content?

Methods

- Discussion method.
 - Read a few chapters and assignments
 - **Prepare short answers to the study questions**
 - Use study questions for a thorough discussion in both Teams and with class
 - If you have questions, please ask them in class.

Teams

- We have divided you into groups of 4
- Online Teams will meet in Breakout Rooms
- Nominate Most Fluent English Speaker
 - Need 1 per Group to talk to the Class
- Group
 - Send Group Name, email addresses, and names of Individuals in group to me:
pnchase@gmail.com

Photos

- Once with your Team we will take a photo of the group. If online, Arianna will take a Webcam photo and send to me.
- Of course if you do not want your photo taken, you do not have to. Just make sure your name appears in its place before the photo is taken.

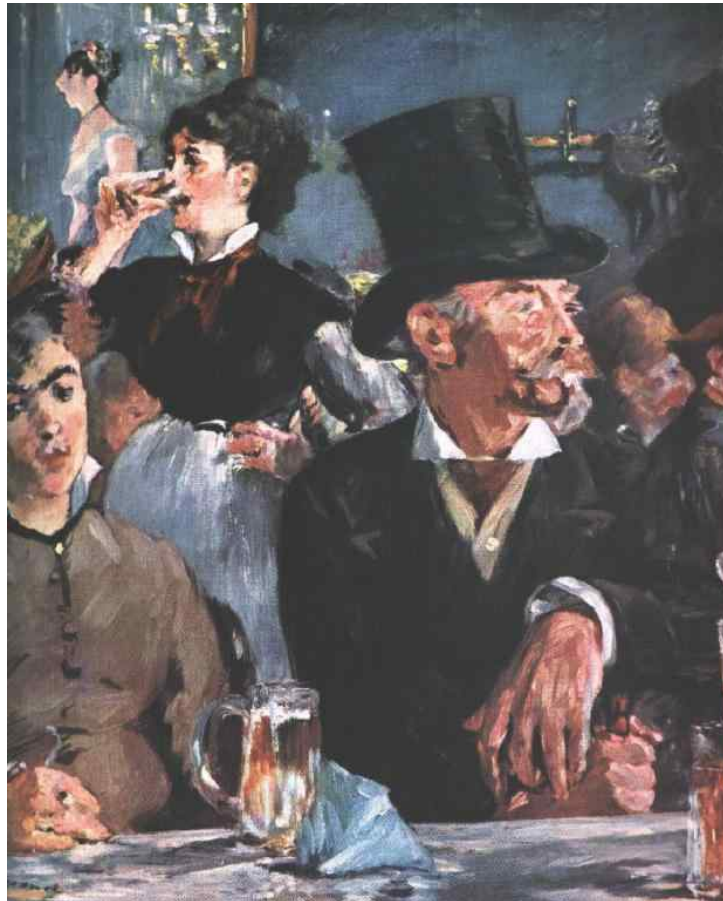
Use of Teams

- Teams will be used for group answers to the study questions.
- Online students will go to breakout rooms
- Arianna will visit the breakout rooms and I will meet with the Face2Face teams to help.
- Return to class to discuss.

Use of Group Answers

- We will discuss the group answers as a class.
- You will submit your group answers to me at the end of the day.
- The study questions have been designed to help you study for the online test.
- Your answers to the study questions will help me prepare the next session to provide additional information to you as needed

Café? 15 minuti!



<http://jssgallery.org>