

WHO'S SMILING?



Nancy Novikoff



Martin Oblea



Gene Ortiz



Ruth Norton



Susan Nunnally



Phillip Ochoa



Richard Orton



Larry Norwood



Margareta Nystrom



Gregory Orozco



Jorge Oviedo



Russell Noyes



Carl O'Brien

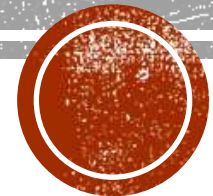


Rachel Ortiz



RESEARCH METHODS

8-10% of the Exam



**YOU WILL HEAR 10 STATEMENTS. CHOOSE
WHETHER YOU THINK EACH IS TRUE OR
FALSE.**



MONDAY, SEPTEMBER 8

- Learning objective: Students will identify the need for a scientific method in psychology
- Please have your vocabulary cards on your desk.
- Warm Up: write a reading summary for chapter 2. When you are done place your warm up paper in the hand in basket.



MONDAY, SEPTEMBER 8

- Agenda

1. Student presentations- The outrageous celebrity
2. Continue with Friday's questions/Answers, and the purpose of it all
3. "Who's Smiling?" (Time Permitting)



TUESDAY, SEPTEMBER 9

- Learning objective:
 - Students will identify the need for a scientific method in psychology

- Warm Up:
 - Hailey, Sam, Katlynn, and Shannon: get set up 😊
 - Everyone: Answer the following.
 1. What is your goal for a grade in this class?
 2. What is your goal for a score on the AP Psychology Exam?
 3. Do you plan to go to college?



**NOW FOR THOSE PESKY TRUE FALSE
QUESTIONS...**



STATEMENT 1

The opinions of 1500 randomly selected people can provide a fairly accurate picture of the opinions of an entire nation.

TRUE



STATEMENT 2

If you want to teach a habit that persists, reward the desired behavior every time, not just intermittently.

FALSE



STATEMENT 3

Patients whose brains are surgically split down the middle survive and function much as they did before surgery.

TRUE



STATEMENT 4

Traumatic experiences, such as sexual abuse or surviving the Holocaust, are typically “repressed” from memory.

FALSE



STATEMENT 5

Most abused children do *not* become abusive adults.

TRUE



STATEMENT 6

Most infants recognize their own reflection in a mirror by the end of the first year.

FALSE



STATEMENT 7

Adopted siblings usually do not develop similar personalities,
even though they are reared by the same parents.

TRUE



STATEMENT 8

Fears of harmless objects, such as flowers, are just as easy to acquire as fears of potentially dangerous objects such as snakes.

FALSE



STATEMENT 9

Lie detection tests often lie.

TRUE



STATEMENT 10

The brain remains active during sleep.

TRUE



WHY WE MUST FOLLOW A SCIENTIFIC METHOD!



THE SCIENTIFIC METHOD

- Who smiles more: Females or Males?
- How would you test this? What is your hypothesis?
Discuss in groups for 1-2 minutes.
- Count the number of smiles. Write your groups data on the board.



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WHY DID I MAKE YOU DO THIS?



WEDNESDAY, SEPTEMBER 10

- Learning Objective: I will write operational definitions.
- Warm Up: Describe how hindsight bias and overconfidence could affect the outcome of a study.



QUIZ REVIEW

- Read the short answer response provided silently. Highlight the words or phrases that guaranteed full credit for each perspective.
- Multiple choice review



HINDSIGHT BIAS

- How many of you said “I knew that, I just second guessed myself?”
- The tendency to believe, after learning an outcome, that one would have foreseen it



OVERCONFIDENCE

- Predictions made with 80% confidence level were right less than 40% of the time
- 27,000 expert predictions of world events; Philip Tetlock (1998,2005)



THE SCIENTIFIC METHOD



THE BIG PICTURE



THEORY

- a broad idea or set of closely related ideas
- attempts to explain observations
- used to make predictions about future observations
- can be modified or supported over time with additional research



A GOOD THEORY...

- Effectively organizes a range of observations
- Leads to a clear hypothesis
- Is supported by multiple replications of a study
- Produces a testable hypothesis- we use theories to create our testable questions



HYPOTHESIS

- A testable prediction that derives logically from a theory



TESTING A HYPOTHESIS

- Observing variables (anything that can change)
- Measuring variables requires **operational definitions**:
 - a carefully worded statement of the exact way a variable of interest will be measured
 - allows for replication of a study in a new environment with new participants and more reliable findings



DRAWING CONCLUSIONS

- Gathering data
- Analyzing data with statistics
- Using the analysis to draw meaningful conclusions



EVALUATING A THEORY

- only done when a specific hypothesis is supported numerous times



WRITING OPERATIONAL DEFINITIONS

Working with your group, develop observational definitions for the following items. Do not split them up. Work together as a group. You may choose as a group to work individually.

Remember that an operational definition must be observable and measurable.

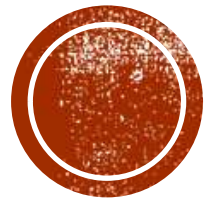
1. Happiness
2. Intelligence
3. Popularity
4. Good music
5. Grades (how should your grade in a class be operationally defined?)



THURSDAY, SEPTEMBER 11

- Learning Objective: I will identify the three types of psychological testing and the strengths and limitations of each.
- Turn in your operational definitions if not submitted in class yesterday.
- We will be taking notes again today, rearrange yourselves if necessary 😊
- Warm Up: Read the two abstracts provided. Identify the operational definition in each study. (5 minutes)





TYPES OF PSYCHOLOGICAL TESTING

THREE MAJOR TYPES OF TESTING USED IN PSYCHOLOGICAL RESEARCH

- Descriptive methods (describe behaviors)
- Correlation methods (associate different variables)
- Experimental methods (display cause-effect relationships)



DESCRIPTIVE RESEARCH

- How it works:
 - describes phenomenon
 - what the behavior is, how often it occurs, what setting it occurs in
- Strength: can reveal important information and provided a starting point
- Limitation: Cannot prove cause
- 3 kinds: Naturalistic Observation, Surveys/Interviews, Case Studies



NATURALISTIC OBSERVATION

- **How it works:**
 - recording details about what you see or hear
 - must be systematic (when, where, what)
 - should have multiple observers to ensure precision
- **Strength:**
 - offers interesting snapshots of everyday life
- **Limitation:**
 - observation, not understanding
 - Observation without controlling for all the variables that may influence behavior



SURVEYS

- **How it works:**
 - interviews of multiple people
- **Strengths**
 - Can access a large number of people ensuring a large population size
 - Can examine a wide range of topics
- **Limitations:**
 - People don't always tell the truth
 - must be carefully worded to evaluate the variable of interest according to the operational definition



CASE STUDIES

- **How it works:**
 - in-depth look at a single individual
- **Strengths:**
 - show what can happen and often suggests further areas for study
- **Limitations:**
 - only study individuals
 - cannot be applied from one person to the next due to individual differences



PHINEAS GAGE



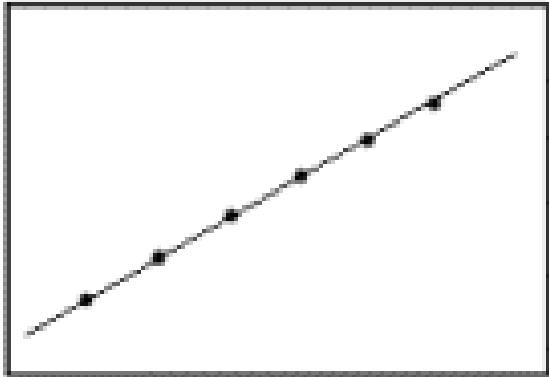
**A FAMOUS
CASE STUDY**



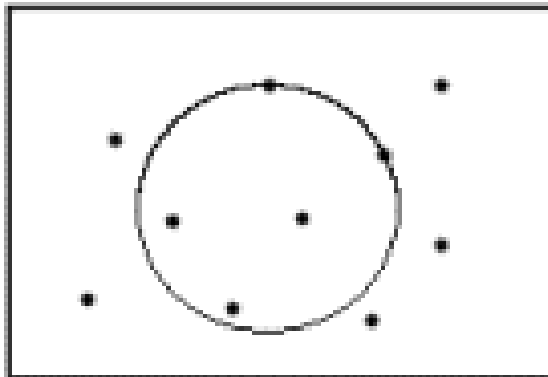
CORRELATION RESEARCH: HOW IT WORKS

- Examines the relationship between two variables; examines whether and how they change together
- Combination of two descriptive studies, usually surveys
- Correlation coefficient (r)
 - a measure of the degree of a relationship between two variables
 - identifies strength and direction of a correlation
- Ranges from -1.00 to +1.00
 - closer they are to 1, the stronger the relationship
 - - as one goes up the other goes down (inverse)
 - + as one goes up the other goes up (direct)

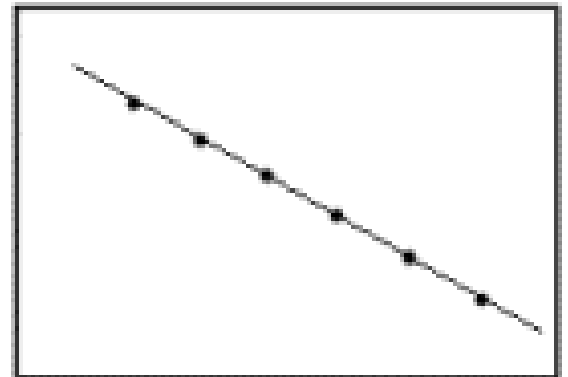




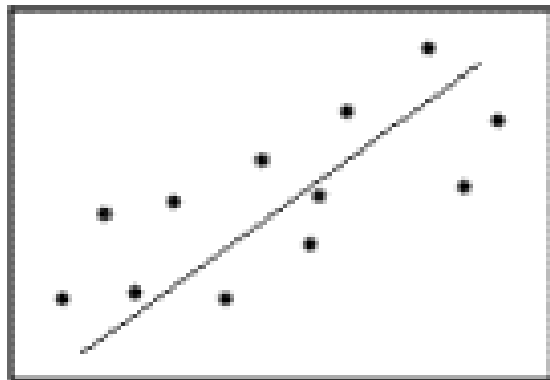
$r = +1.0$



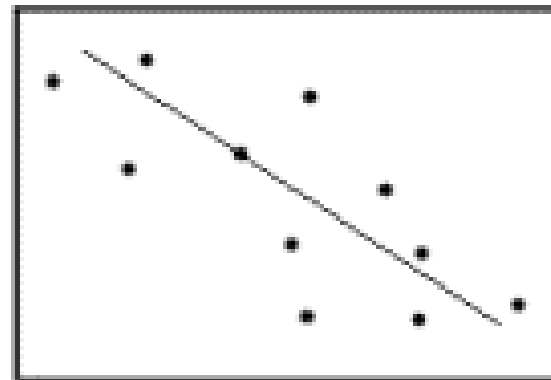
$r = 0.0$



$r = -1.0$



$r \approx +0.6$



$r \approx -0.6$



CORRELATION RESEARCH: STRENGTHS

- They allow one variable to predict another (usually quite accurately if it has been shown to do so over time)
- May involve variables that cannot be changed such as biological sex, personality traits, ethnic background
- May deal with major events that cannot be repeated
- Valuable when it may not be ethical to perform the research in any other way



CORRELATION RESEARCH: LIMITATIONS

- Correlation does not equal causation
- Confounding variables (3rd variable problem)-a variable not considered that may have an effect

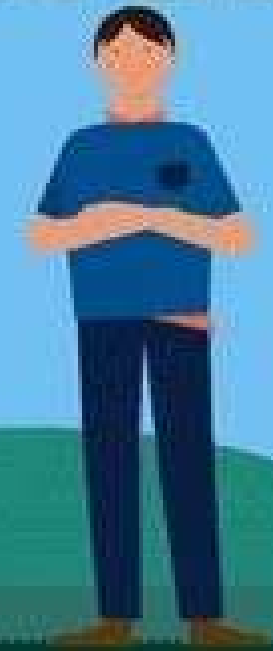


FRIDAY, SEPTEMBER 12

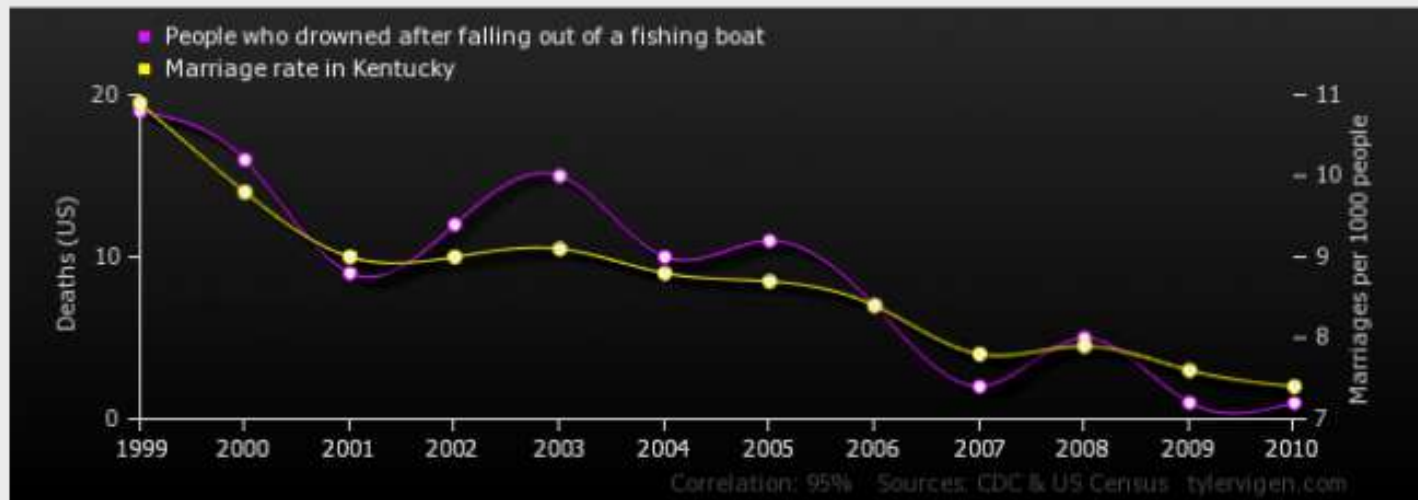
- Learning Objective: I will describe the difference between correlation and causation and the components of an experiment.
- Warm Up: Sketch a graph of two variables with a correlation coefficient of $r = -1$



THE CURIOUS SECRETS OF A LONG LIFE (IN A SHORT FILM)



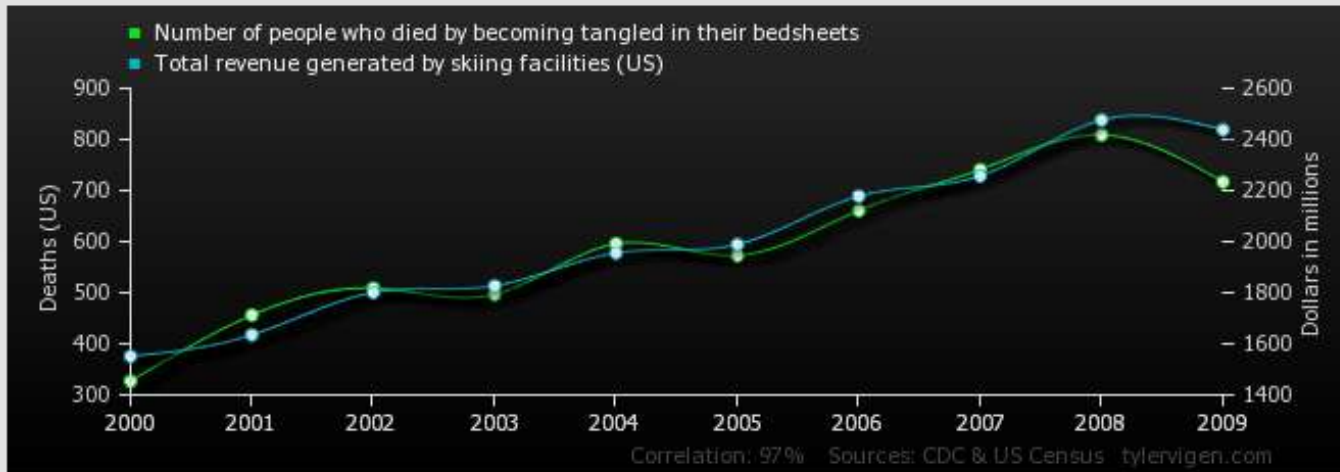
People who drowned after falling out of a fishing boat correlates with Marriage rate in Kentucky



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
People who drowned after falling out of a fishing boat Deaths (US) (CDC)	19	16	9	12	15	10	11	7	2	5	1	1
Marriage rate in Kentucky Marriages per 1000 people (US Census)	10.9	9.8	9	9	9.1	8.8	8.7	8.4	7.8	7.9	7.6	7.4

Correlation: 0.952407

Number of people who died by becoming tangled in their bedsheets correlates with Total revenue generated by skiing facilities (US)



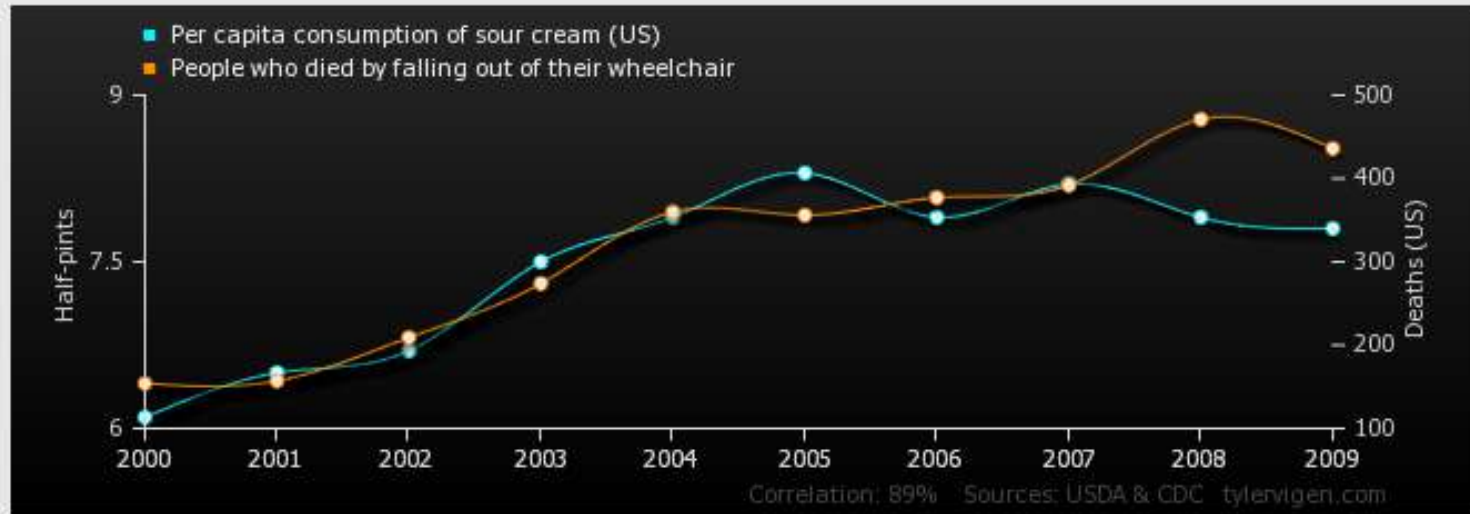
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<i>Number of people who died by becoming tangled in their bedsheets</i> Deaths (US) (CDC)	327	456	509	497	596	573	661	741	809	717
<i>Total revenue generated by skiing facilities (US)</i> Dollars in millions (US Census)	1,551	1,635	1,801	1,827	1,956	1,989	2,178	2,257	2,476	2,438

Correlation: 0.969724

<http://www.businessinsider.com/spurious-correlations-by-tyler-vigen-2014-5>



Per capita consumption of sour cream (US) correlates with People who died by falling out of their wheelchair



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<i>Per capita consumption of sour cream (US) Half-pints (USDA)</i>	6.1	6.5	6.7	7.5	7.9	8.3	7.9	8.2	7.9	7.8
<i>People who died by falling out of their wheelchair Deaths (US) (CDC)</i>	154	157	209	274	360	356	377	392	471	436

Correlation: 0.888923

<http://www.businessinsider.com/spurious-correlations-by-tyler-vigen-2014-5>



LONGITUDINAL STUDIES

- Comparing multiple correlation research studies over time
- Strength: can get closer to suggesting a causal relationship
- Limitation: cannot prove a causal relationship between two variables because there are so many confounds included



EXPERIMENTS: HOW IT WORKS

- A carefully regulated procedure in which the researcher manipulates one or more variables that are believed to influence some other variable
- Independent Variable- the one that the experimenter manipulates
- Dependent Variable- the measured outcome



EXPERIMENTAL VS. CONTROL GROUP

- The experimental group receives treatment (change of independent variable)
- The control group gets all the same conditions, but no treatment (no change of independent variable)
- Participants must be randomly (completely by chance) assigned into a group





EXPERIMENTS: STRENGTHS AND LIMITATIONS

- Strengths:
 - Carefully controlled setting
 - Can strongly suggest a cause and effect relationship
- Limitations
 - It is unethical to manipulate some variables (best left to case studies)
 - Bias plays a large part in the validity



VALIDITY

- Refers to the soundness of a conclusion that a researcher draws from an experiment
- External Validity → does this study actually reflect the real-world issue it was designed to address?
- Internal Validity → is the independent variable really responsible for the change in the dependent variable?



BIAS

- Participant bias- occurs when the behavior of the participants during the experiment is influenced by how they think they are supposed to behave or by their own expectations
- Experimenter bias- occurs any time an experimenter's expectation influence the outcome of research
- Double Blind Procedure: a way to prevent bias; neither the participant nor the researcher know who is in what group



THE PLACEBO EFFECT



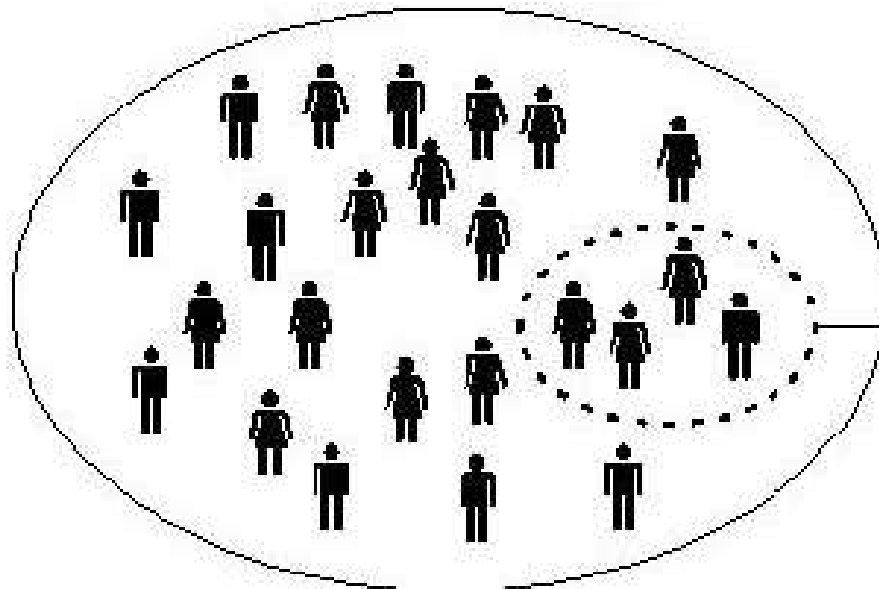
THE PLACEBO EFFECT



POPULATION VS. SAMPLE

Population:

the entire group about which
the researcher wants to draw a
conclusion

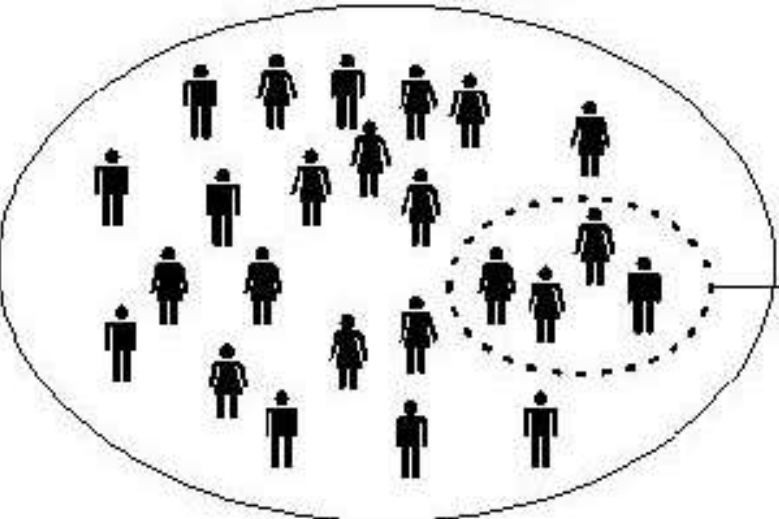


Sample:

the subset of the
population that is
actually part of the study



Population



Sample



Experimental Group



Control Group



RESEARCH SETTING

	Advantages	Disadvantages
Laboratory Setting	Carefully controlled variables	Participants know they are there to be studied (participant bias) Lack of diversity in participants
Naturalistic Observation	Real-world setting and action Can be done anywhere	Less control over confounds



FACILITATED COMMUNICATION



FACILITATED COMMUNICATION

- Claim: facilitated communication techniques can help people with developmental and communication disabilities express themselves.
- How would you design a psychological test to investigate this question?
 - Identify the population and sample.
 - What type of test would you use?
 - What would be your operational definition?
 - How would you design your test?
 - What data would you collect?

