

1 **Module 2: Research Strategies**

How psychologists ask and answer questions

2 **Intuition and common sense can cause problems!!!**

- They sometimes cause us to think in ways that seem to make sense but aren't really true.

3 **Common Sense???**

A ROOM MUST HAVE 367 PEOPLE IN IT TO HAVE A 100% CHANCE OF TWO PEOPLE HAVING THE SAME BIRTHDAY. HOW MANY PEOPLE WOULD YOU NEED TO HAVE A 50% PROBABILITY?

4 **The Hindsight Bias**

- The "I knew it all along" bias
- The tendency to believe, after something happens, that this outcome was obvious all along.
- Research: Wells and Bradfield

5 **Overconfidence**

- Having too much confidence in your own opinions despite evidence to the contrary
- Valone research
- Tetlock research

6 **Case studies**

Studying one or more people in depth in hopes of revealing universal principles

Give scientists ideas for further study

7 **Sample Surveys**

- Interviews
- Questionnaires

8 **In a Sample Survey, the Population is**

The whole group that the researcher is interested in

9 **In a sample survey, the Sample is**

- The people who actually answer the questions on the questionnaires or

interviews

- 10 Benefits of sample surveys as a research method
- Relatively cheap and fast
 - Valuable for finding out how people think or how they behave
- 11 How are people chosen to be in the sample group?
- Random sample: every member of the population has an equal chance of being chosen to be in the sample group.
 - Stratified Random sample: Used in the same way as a random sample using lists of different groups.
- 12 Problems with sample surveys as a research method
- 13 Wording effects (biased questions)
- Are you in favor of increased benefits for poor people?
 - Are you in favor of increasing welfare benefits?
- 14 Nonrepresentative sample
- The sample group must be typical (representative) of the population or the scientist cannot accurately generalize from the sample to the population.
- 15 Examples of nonrepresentative samples
- 1 ■ If you wanted to know what COTC students thought about increasing tuition, would you only ask nursing students?
 - 2 ■ The Literary Digest study: 1936:
Alf Landon: R
F.D. Roosevelt: D
- 16 Illiteracy
- In the United States 6% of the people who receive a questionnaire will be unable to read or write adequately enough to answer the questions. In Licking County the figure is about 17%
- 17 Volunteer Bias (self selected returns)
- People who feel strongly for or against an issue are more likely to answer the questions.
 - Ex: Shere Hite's 1987 book Women in Love
- 18 CORRELATIONS
- 19 Correlation: What is it?
- Shows how any two variables (factors) vary in relationship to each other. What

happens to one variable as the other increases or decreases?

- Variable: Something that can change from time to time, place to place, person to person, etc.

20 Examples of correlations: Identify the variables. . .

The taller you are, the more you are likely to weigh

21 The more often you attend class, the higher your grade is likely to be

22 The more sunny days there are, the more likely you are to be suntanned

23 The fewer the parking spaces in the lot, the higher the level of frustration among students

24 The more time you spend with your children, the less likely they are to do drugs

25 A correlation has 2 characteristics

- #1: Direction: a correlation is either positive (+) or negative (-)

26 Identify the direction of these correlations. . .

- The more active an older adult is, the longer he/she is likely to live.
- The longer the line at the bookstore, the more frustrated students feel.
- The longer a couple is engaged, the greater the risk of divorce later.

27 The more a person attends church, the less likely he/she is to be a criminal

28 The 2nd characteristic of a correlation is. . .

- #2: Strength: A correlation is always a number between +1 and -1.

$$-1 \leq r \leq +1$$

29 Any correlation is considered to be a strong one if it is .4 or above

30 Example

- The correlation between being abused as a child and being an abuser in adulthood is

$$r = .6$$

This is a strong correlation

31 People who have been abused as children are more likely to be abusers themselves when they become adults. However, it is still true that most people who were abused as children are not abusive parents themselves.

32 If $-1 \leq r \leq +1$, then. . .

- Some correlations can be $r = +1$
 - Every single time, as one variable increases, the second variable increases.
 - Ex: The moon and tides

33 But also. . .

- $r = -1$
 - One variable always decreases as the other increases

--Ex: The longer the line at the bookstore, the more students grumble while in line.

34 And finally. . .

- $r = 0$
 - There is no predictable pattern between the two variables.

--Ex: the number of hairs on your head and book sales in Tokyo.

35 You can never tell cause and effect from a correlation. You can never assume that the change in one variable is causing a change in the 2nd variable.

WHY????

- 36 The more time spend with their children, the less likely the children are to do drugs.
- 37 The more parents who attend PTA meetings, the better grades the children get in that school.
- 38 The more Camaros there are in a city, the more traffic fatalities there are likely to be.
- 39 The more ice cream is sold in Newark, the greater the number of rapes.
- 40
- The more active older adults are, the longer they are likely to live
- 41 The longer men are married, the more hair they lose.
- 42 Correlations are reasonable good for prediction, but are not infallible.
- Ex: Abused children
 - Ex: There is a strong correlation between a boy's arrest by age 14 and his risk of becoming a chronic offender: We can predict that a boy who is arrested before age 14 is at higher risk for being a chronic offender, but 66% of boys arrested before age 14 do not become chronic offenders.
- 43 You can predict from a correlation, but you can not tell cause and effect.
- 44 Illusory correlations
- When we already believe that there is a relationship between two variables, we are more likely to notice and recall instances that conform our belief. We are also less likely to notice and recall instances that disagree with our belief.
- 45 Illusory correlations: Examples
- Couples who adopt are more likely to conceive later.
 - More babies are born at full moon than at other times.
 - Tversky research: Can your arthritic joints tell you when the weather is changing?
- 46 Experiments: the only reliable way of telling cause and effect

- 47 An experiment has 4 parts
- The independent variable
 - The dependent variable
 - The experimental group
 - The control group
- 48 An experiment
- You want to find out if tutoring improves students' grades. You divide your students into 2 groups.
 - Group #1: Nothing different
 - Group #2: Get individual tutoring for 1 hour each weekYou give all students the same quizzes and exams and compare course grades at the end of the quarter.
- 49 Another experiment. . .
- Sniffing lavender has been shown to increase scores on math tests. How would you design an experiment to see if it worked on psychology tests?
- 50 Why is it important that the two groups be as identical to each other as possible??
- 51 What is the best way to make sure the 2 groups are as nearly identical as possible?
- 52 Experiments are the best way we have of establishing cause and effect.

WHY??????

- 53 Can subliminal tapes improve your life? Read about it beginning on page 29.