Psy 331
Inferential Statistics

Introduction

What We Will Cover in This Section

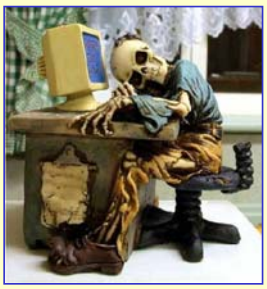
- Course requirements.
- Introduction.
- Research designs.
- Variables.
- Numbers.

Course Requirements

- Text.
  - Heiman
- Study Guide.
  - Asterisks.
- Pocket calculator.
- SPSS Data Set.
- Attendance.
- Contacting me.
- Honesty.
- Office hours.
- Review sessions.
- Completed a preliminary course in descriptive statistics.

Course Web Site

- Syllabus.
- Study Guide.
- SPSS Guide
- How to contact me.
- PowerPoint slides.
- Interesting sites.
- Pictures of me.



Evaluation: Assignments

- Homework problems in the Study Guide.
  - You must do your own work but you may consult with classmates to do them.
- SPSS problems in the study guide.
  - Your NAME MUST BE PRINTED on the SPSS printouts.
  - You must do your own work.

Evaluation #2: Quizzes

- Quiz after each section.
  - Each quiz worth about 15-25 points.
  - Drop lowest quiz in computing grade.
  - Drop the first missed quiz as the lowest quiz.
  - Make up subsequent quizzes with excuse.
  - Lose a point a day for late quizzes.
  - Must make up work the week you return to class.

What Quizzes May Look Like

Sample Multiple Choice Item.

1. **This course is called**
   - A. **Elementary physics**
   - B. **Fun with sushi.**
   - C. **Inferential statistics.**
   - D. **Existential phenomenology.**

Typical TRUE FALSE items.

1. **TRUE FALSE** **California University of Pennsylvania is not located in the state of California.**

2. **TRUE FALSE** **Your professor is Wolley Segap.**

Typical Fill-in Item

_____ is the current President of the United States.

Your incredibly handsome instructor sports what kind of neckwear?

_____

Typical Definition

Define and give an example of the term CHEATING.

CHEATING occurs when a person copies another person's work and turns it in as his/her own. An example would be copying someone's quiz answers or turning in someone else's paper and taking credit for it.

Examples of Bad Definitions.

CHEATING is when you cheat and do bad things. Like taking your friend's pencil.

CHEATING is illegal stuff people do in class and they get caught.

Evaluation #3: Other

- Optional final examination.
  - Get 80% or better and I will increase your grade one letter.
- No extra credit.

WARNING #1!

WARNING #2!

- Your homework assignments MUST represent YOUR WORK.
- I will not grade an assignment that does not show YOUR CALCULATIONS.

WARNING #3!

I get to answer all cell phones that ring during class.

Warning #4!

- If you **TEXT MESSAGE** during class I will assume that this is more important than what I have to teach.
- I will ask you to carry out this critical activity elsewhere.

Approach to the Course

- Theory.
- How computations are done.
- Interpretation.
- Assumptions.

Major Goal of the Course

Give you the basic knowledge to understand basic inferential statistics as they are used in psychological research.

Reality Check

- What are your assumptions or concerns?
- My assumptions about you.
  - You want to do well.
  - You will contact me when you get stuck.
  - You have the courage to ask…

Basic Terms and Concepts

Basic Terminology

STATISTICS

Numerical techniques for describing groups of people or events.

Fundamental Uses

DESCRIPTIVE STATISTICS

Techniques used to organize, summarize, and describe sets of numbers.

INFERENTIAL STATISTICS

Techniques that allow us to make estimates about populations based on sample data.

Population

All members of a group that are alike on at least one characteristic.

PARAMETER

Symbol used to indicate the properties of a population.

In statistics, parameters are expressed in Greek letters (μ,σ).

Sample

A group that is less than the total population from which it is drawn.

STATISTIC

Symbol used to indicate the properties of a sample.

Statistics are expressed in Roman letters (M, S, r).

Variables

Experimental Variables

- **Independent variable.**
  - **The treatment or condition that is manipulated by an experimenter.**
- **Dependent variable.**
  - **The variable that is measured in an experiment.**

Using Numbers

Levels of Measurement

NOMINAL SCALE

Numbers are used as labels.

ORDINAL SCALE

Numbers are used to indicate rank order.

Levels of Measurement

INTERVAL SCALE

Numbers are used to indicate an actual amount and there is an equal unit of measurement between adjacent numbers.

RATIO SCALE

Numbers indicate an actual amount and there is a true zero.

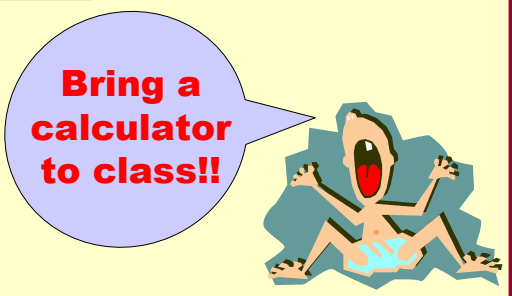
Computing and Reporting Numbers

1. **Make computations at 4 decimals.**
2. **Report data at two decimals.**
   - **Round to two decimals only after the computations are done.**

Round Each of these Numbers

- **55.679**
- **-.583**
- **109.34768**

FINALLY



The End