Wrap-Up and Review for Exam 3

Former MSU Student Needs Help

• About a 25 minute survey
• http://www.surveymonkey.com/s/NV52PGB

Outline

• Review Previous Thursday
• Core Themes in 395
• Exam 3 Details
• General Review
Review

- Physical Trace Measures
- Archival Research
  - Miss America and BMI
  - Temperature and Aggression
  - Home Field Disadvantage in Championship Games

Null Hypothesis
Significance Testing (NHST)

What does a $p$ value tell us?

- The probability of the result occurring by chance GIVEN that the null hypothesis is true.
- It DOES NOT tell us the truth of the null hypothesis given the data.
- It DOES NOT tell us the probability of replicating our results.
- It DOES NOT tell us if the effect is important or useful.
- It DOES NOT tell us if the effect is meaningful in terms of theory or practice.
All Studies Have Limitations...

Myth of the Perfect Study
(Hunter & Schmidt, 2004)
• There are no perfect studies (p. 12)
  – All studies contain measurement error
  – No study has measures with perfect construct validity
  – Sampling error
• No single study or small selected subgroup of studies can provide an optimal basis for scientific conclusions about cumulative knowledge (p. 18)

Repeatability is Good, Very Good!
Replication is Crucial

- Replication is a critical scientific activity, one not given its due in the behavioral sciences. (Kline, 2004, p. 247).
- Consider each study as a piece of the overall puzzle that addresses a particular topic.
- Place more emphasis on findings that can be duplicated and findings that emerge across study types and types of samples.

An essential ingredient in the research process is the judgment of the scientist.

-Jacob Cohen
(1923-1998)

Exam 3 Details

- What? 40 Questions (2.5 points each)
- When? Thursday in class
- 35 Multiple Choice, 5 True/False
Review Topics

Important: Read the Text and Know Key Terms!

Internal Validity and Experiments

• Causality and Correlation
• Definition of Internal Validity
• Threats to Internal Validity (p. 245 to 252)
• Experimental Designs (p. 254 to 264)
• Strengths and Limitations of Experiments (p. 264 to 268)
Laboratory Studies

- Universalistic versus Particularistic Research Goals
- Types of Lab Studies
- Video Game Example
- Factorial Design: Landy and Sigall (1974) Study (Attractiveness and Essay Quality)

Quasi-Experiments, Program Evaluation, and Applied Research

- Definitions and Designs (p. 311 to 324)
- Program Evaluation – Types
- Evaluation: Abstinence Only Programs
- Regression to the Mean (p. 324 to 329)
- Interventions that Harm (e.g., Cambridge-Somerville Youth Study, Dishion et al., 1999)
- Palmgreen et al. (2001) Study (p. 310 to 313)

Observational Research

- Example: Littering Study and Gender Differences in Receptivity to Sexual Offers
- Types: Physical Traces, Systematic Observation, Ethological Approaches
- Steps for Conducting a Systematic Observation (pages 375 to 380)
Archival Research

• Examples: Miss America and BMI; Association between Heat and Aggression; The Home Field Disadvantage in Sports Championships
• Measurement Task ➔ Obtaining Acceptable IVs and DVs

Other Topics

• Null Hypothesis Significance Testing
• Meta-Analysis (see Chapter 19)
• Labs 8 to 10 – Substantive and Methodological Issues
  – Especially: t-tests, ANOVA, effect sizes, correlations, Lab 10 Stuff!