Introduction to Psychological Science:
Research methods, ethics and APA style

Lab 1

Popular psychology topics:
Myth or real?
- Most people use only 10% of their brain
- Expressing anger is better than holding it in
- Opposites attract in relationships
- High self-esteem is needed for good psychological health
- Listening to Mozart can make infants smarter
- A full moon can trigger wacky behavior
- Your first guess is the right one on a test
- Most people will have a mid-life crisis
- Handwriting can reveal personality traits

Pseudoscience

- “Claims that appear to be scientific but that actually violate the criteria of science.”
- “Claims exhibit superficial trappings of science but little of its substance” (Lilienfeld, 2004)
- Examples?
  - Crop circles, alien abductions, Big Foot, …
  - What about... hypnosis for memory recovery, multiple personality disorder, Rorschach inkblot test, handwriting analysis, polygraphs…?
- Scientific revolution (new paradigm/theory) or pseudoscience?
  - Thomas Kuhn (1970)
  - [http://www.youtube.com/watch?v=GT3N0GjlyTQA&feature=related](http://www.youtube.com/watch?v=GT3N0GjlyTQA&feature=related)

Pseudoscience and Science

- Each has a different approach to evidence
  - Science seeks out contradictory evidence; and adds it into theory
- Good or bad science, NOT good or bad scientist
  - No scientist is free of biases
  - But, can be aware of biases and try to control them
- Pseudoscience beliefs are not foolish or stupid
  - Don’t be a critic just to be contrary
  - There are remarkable theories that appear to be true
  - Seek out the truth – require good research methods!
- Do not confuse pseudoscience beliefs with religious beliefs
  - “Religious claims cannot be tested empirically so are outside the boundaries of science” (Lilienfeld, 2004)
Goals and Methods of science

- **Description**
  - Describe by careful observation
  - Observational methods
- **Prediction**
  - Identify when event will occur and examine relationships
  - Correlational methods
- **Explanation**
  - Determine causes that determine when and why behavior occurs
  - Experimental methods

Steps of a research study

- Identify a problem – determine **specific** question
- Read literature
- Generate a testable hypothesis
- Design a “good” study
- Conduct study – collect data
- Analyze data – interpret data
- Disseminate data – write-up study
- Replicate study

Scientific writing

- “Science is not static” – theories evolve – therefore...
- Wording of conclusions (note what words are **NOT** used)
  - “The results support the conclusion that...”
  - “The data provide evidence that...”
  - “The findings presented were not consistent with the hypothesis that...”
  - **DO NOT** use the word “prove” or “proof”!
- Interpretation of results
  - Careful of confounding variables
  - Need multiple studies to support theory

How to write in APA style

- “Essentials of scientific writing” on my website
  - Structure of the paper
  - Basic rules
  - Language: Word choice, quotations
  - In-text citations
  - Reference section
Sections of an empirical research article

- **Abstract**
  - Brief summary – usually not more than 120 words

- **Introduction**
  - Review of relevant prior research (citations); context for study
  - Purpose and rationale for the study

- **Hypotheses**

- **Method**
  - Participants
  - Materials / Apparatus
  - Procedure – how they did the study so it can be replicated

- **Results**
  - Results of statistical tests
  - Tables and figures

- **Discussion**
  - Restatement of purpose of study and hypotheses
  - Evaluation and interpretation of results
  - Relationship between results and previous research
  - Criticisms of the study and future research ideas

How to read a research article

- **Do not** read like a book (front to back)!
  - Get big picture first (intro & discussion) then particulars second (method & results)
  - Skim first time; Read first and last paragraphs of sections

- **How to deal with jargon?**
  - Do not just pass over term you don't understand!
  - Look-up vocabulary in textbooks or on-line

- **Examine tables and figures**
  - Read the titles, axis labels and legends

- **Read the article multiple times**
  - Write your own “abstract” of the paper – what are the central points/evidence that you want to remember?

References

- **In text**
  - If use names in sentence, list last names with year in parentheses
    - "Bopp and Verhaeghen (2005) found that on average…"
  - If reference after sentence, list last names and the year
    - "A larger age difference exists for RS compared to DS (Bopp & Verhaeghen, 2005)"
  - List all last names first time reference is cited (unless 6+)
  - If work has 3-5 authors, after first time then can use “et al.”
    - "…. (Mitchell et al., 2003)."

- **Reference section**
  - List of all references cited in paper
  - References in alphabetical order by first author’s last name

Reference in APA format


- Author last name, first initial (year). Title of article. *Name of Journal*, volume, page numbers.

- Use the references at the end of your article or at the end of your textbook as examples of APA style references.
**History of ethical standards in research**

- **Unethical examples**
  - Nazi war crimes trials after WWII
  - **Tuskegee syphilis study** (1932-1972)
- **Ethical guidelines**
  - Developed in 1948: Nuremberg Code for medical research
  - 1953: APA developed own guidelines
  - 2002: last revision to guidelines
    - Principles (Table 2.2)
    - Standards (Table 2.3)

**General principles: APA ethical standards**

- **Principle A: Beneficence and nonmaleficence**
  - Benefit those work with and try to do no harm
- **Principle B: Fidelity and responsibility**
  - Establish trust with those work with
- **Principle C: Integrity**
  - Promote accuracy, honesty and truthfulness
- **Principle D: Justice**
  - All entitled to access and benefits; equal quality in services
- **Principle E: Respect for people’s rights and dignity**
  - Respect rights of individuals to privacy, confidentiality and self-determination; use special safeguards

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APA ethical standards

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**APA ethical standards**

- **Standard 1: Resolving ethical issues**
- **Standard 2: Competence**
  - 2.01 Boundaries of Competence; 2.03 Maintaining Competence
- **Standard 3: Human relations**
  - 3.04 Avoid harm; 3.10 Informed Consent
- **Standard 4: Privacy and confidentiality**
- **Standard 5: Advertising and other public statements**
- **Standard 6: Record keeping and fees**
- **Standard 7: Education and training**
- **Standard 8: Research and publication**
- **Standard 9: Assessment**
- **Standard 10: Therapy**
  - 10.01 Informed Consent to Therapy; 10.10 Terminating Therapy
Ethical standards for human research

- IRB: Institutional Review Board
  - Committee of faculty members and 1 person from outside institution
  - Complete IRB application to conduct research
- Informed consent
  - Purpose of study, risks, participant’s rights, researcher’s rights
- Risk (vs. benefit)
  - Types of risk
  - Minimal risk
- Deception
  - Acceptable if used for right reasons and participants are fully debriefed at end
- Debriefing
  - Informed true purpose of study; remove any harmful effects or misconceptions

Ethical standards

- Research with children or other humans unable to make decisions on own
  - Consent from guardian and participant if possible
  - Debriefing must consider capabilities
- Research with animals
  - Guidelines for Ethical Conduct in Care and Use of Animals (1996) (p.49)
  - IACUC – institutional animal care and use committee
    - I. Justification of research
    - II. Personnel
    - III. Care and housing of animals
    - IV. Acquisition of animals
    - V. Experimental procedures
    - VI. Field research

Kassin & Kiechel (1996): False confessions

- Would you falsely confess to a crime you didn’t commit?
  - HYP: If under stress more likely to falsely confess
- Method: Type document with confederate, told not to press “alt” key or computer will crash!
- Conditions:
  - Stress IV: fast-paced v. slow paced typing
  - Evidence IV: confederate “witnessed” v. didn’t see
  - All denied at first. Asked to sign a “confession”.
- Results:
  - 69% signed written confession
  - Fast & witness condition: 100% confessed
    - 65% of group really believed their confession

IRB

- You’ve decided to replicate the Kassin & Kiechel study at Wofford.
- What are the benefits of the study?
- What are the risks of the study?
- Is the risk-to-benefit ratio worthwhile?
  - Is deception necessary for this experiment? Is it acceptable? Could it be done without deception?
  - Are the Ss treated in a way consistent with APA principles?
- What would be required for the study to be approved by the IRB committee?
IRB proposal

- Description of the study.
- **Purpose of the study and potential benefits.**
- Description of participants.
- Description of method and procedure.
- Participant payment.
- **Description of how will keep participant confidentiality.**
- Potential risks to participants. Describe likelihood of risk. Describe how it will be minimized.
- Informed consent and debriefing forms.