



SACRAMENTO STATE  
Leadership begins here.

## Preliminary Research Considerations

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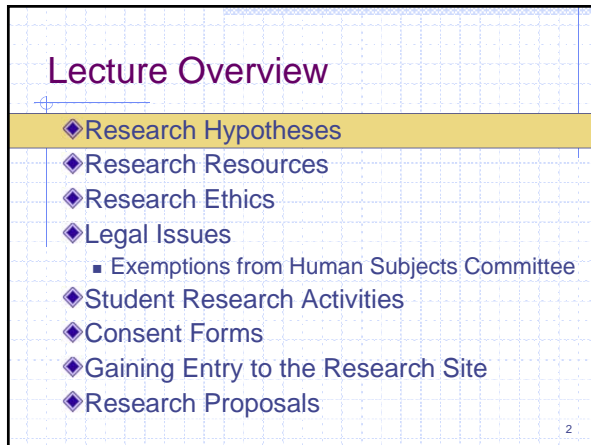
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## Lecture Overview

- ◆ Research Hypotheses
- ◆ Research Resources
- ◆ Research Ethics
- ◆ Legal Issues
  - Exemptions from Human Subjects Committee
- ◆ Student Research Activities
- ◆ Consent Forms
- ◆ Gaining Entry to the Research Site
- ◆ Research Proposals

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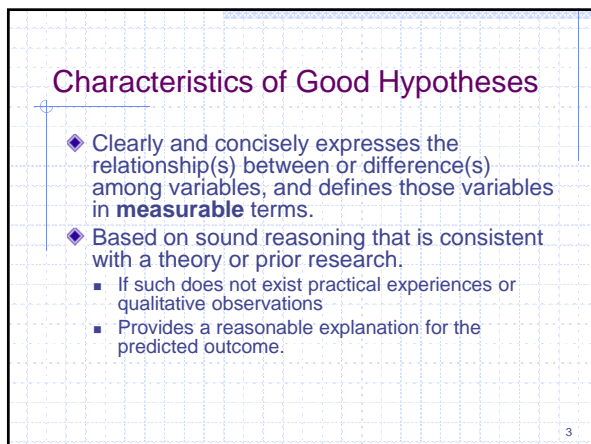
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## Characteristics of Good Hypotheses

- ◆ Clearly and concisely expresses the relationship(s) between or difference(s) among variables, and defines those variables in **measurable** terms.
- ◆ Based on sound reasoning that is consistent with a theory or prior research.
  - If such does not exist practical experiences or qualitative observations
  - Provides a reasonable explanation for the predicted outcome.

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### Characteristics of Good Hypotheses

- ◆ Clearly states the **expected relationship among or difference between** well defined (operationalized) variables.
  - ◆ Some survey research or descriptive studies may not have such
- ◆ Testable within a reasonable time frame.

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### Directionality and the Hypothesis

- ◆ Directional hypotheses are written when your interpretation of the literature (or your experience) suggests to you that a given finding is expected.
- ◆ Non-directional hypotheses are written when your interpretation of the literature does not suggest a specific direction.

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### Pseudohypotheses

- ◆ Failing to include a basis for comparison
  - What is wrong with this statement?
    - ◆ "ADHD children will perform poorly on reading comprehension measures."
- ◆ Value judgments
  - What is wrong with this statement?
    - ◆ "Pre-service teachers will benefit from suicide intervention training."

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## Research Interest to Correlational Research Hypothesis

1. General area of interest: ADHD and reading
2. Population of interest: School aged youth
3. Specific topic of study: Reading comp. & ADHD
4. Sample to be studied: Intermediate grade students
5. Method of study: Correlational
6. Identify variables to be studied
  - Correlational Study
    - Variable 1 ADHD symptom severity
    - Variable 2 Reading comprehension test scores

Given these factors state a good correlational hypothesis.

It is hypothesized that there will be a significant Positive /Negative /Directionality: Optional relationship between (variable 1) and (variable 2) among (Sample being studied)

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## Research Interest to Group Comparison Research Hypothesis

1. General area of interest: ADHD and reading
2. Population of interest: School aged youth
3. Specific topic of study: Reading comp. & ADHD
4. Sample to be studied: Intermediate grade students
5. Method of study: Group Comparison
6. Identify variables to be studied
  - Causal Comparison Study
    - Independent Variable The presence or absence of ADHD
    - Dependent Variable Reading comprehension test scores

Given these factors state a good group comparison hypothesis

It is hypothesized that among (Sample being studied) those with<sup>1</sup> / who receive<sup>2</sup> (Independent Variable [cause]) will score significantly higher / lower, (directionality optional) than those without<sup>1</sup> -or- who do not receive<sup>2</sup> -or- who receive an alternative treatment<sup>2</sup> (Comparison group: IV not present, Control group(s) IV not applied or is altered [e.g., placebo, no treatment, or alternative treatment]) with respect to (Dependent Variable [effect])

<sup>1</sup>An Ex Post Facto or Causal-Comparative study. The cause is not "assigned." It is pre-existing.

<sup>2</sup>An Experiment or Quasi-Experiment. The cause or treatment is "assigned."

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## Research Interest to Group Comparison Research Hypothesis

1. General area of interest: ADHD and self esteem
2. Population of interest: School aged youth
3. Specific topic of study: Counseling and ADHD student self esteem
4. Sample to be studied: Intermediate grade students
5. Method of study: Group Comparison
6. Identify variables to be studied
  - Causal Comparison Study
    - Independent Variable Counseling
    - Dependent Variable Scores on a self-esteem measure

Given these factors state a good group comparison hypothesis

It is hypothesized that among (Sample being studied) those with<sup>1</sup> / who receive<sup>2</sup> (Independent Variable [cause]) will score significantly higher / lower, (directionality optional) than those without<sup>1</sup> -or- who do not receive<sup>2</sup> -or- who receive an alternative treatment<sup>2</sup> (Comparison group: IV not present, Control group(s) IV not applied or is altered [e.g., placebo, no treatment, or alternative treatment]) with respect to (Dependent Variable [effect])

<sup>1</sup>An Ex Post Facto or Causal-Comparative study. The cause is not "assigned." It is pre-existing.

<sup>2</sup>An Experiment or Quasi-Experiment. The cause or treatment is "assigned."

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## Portfolio Activity #2

- ◆ Develop three research hypotheses. At least one of which is correlational and one of which is for a group comparison study.
- ◆ In small groups discuss your hypotheses and make necessary corrections before turning in for grading.
- ◆ Handwritten corrections are acceptable.
- ◆ Collaboration with fellow students at this point is appropriate for this activity.

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## Office of Research & Graduate Studies

- ◆ <http://www.csus.edu/research/>
  - Human Subjects Committee (HSC) policies, procedures, and forms
- ◆ <http://www.csus.edu/gradstudies/>
  - Thesis formatting workshops
    - ◆ <http://www.csus.edu/gradstudies/CurrentStudents/Thesis-Project-Dissertation/FormattingWorkshops.html>
  - Thesis/Project resources
    - ◆ Templates and Guides/Instructions

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**Lecture Overview**

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**Research Ethics**

- ◆ Informed consent
  - Make certain potential participants understand the general nature of the study.
  - Point out any aspects of the study that might influence their decision to participate.
    - ◆ Will review sample consent forms in just a bit.
- ◆ Concealment
  - Sometimes it is necessary not to tell subject the complete truth about the study.

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**Research Ethics**

- ◆ Deception
  - Purposely providing false information about a the nature of a study.
  - When employed requires the researcher to
    - ◆ de-hoax the study at its conclusion (tell the truth).
    - ◆ believe that participants will view the deception as reasonable.
    - ◆ desensitize participants to help them overcome negative feelings.

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### Research Ethics

- ◆ Volunteers
  - The ethical approach.
  - The ideal approach.
    - ◆ How does the use of volunteers affect a study?
- ◆ Protection from mental stress/physical harm
  - The research must not cause unnecessary stress or harm.

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### Legal Issues

- ◆ National Research Act of 1974.
  - Resulted in Human Subjects Committees.
  - Ensures participant rights are respected.
  - Can be very time consuming.

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## Legal Issues

- ◆ Family & Education Rights and Privacy Act, 1974.
  - Protects the confidentiality of data.
  - Use of data that identifies the individual participant requires informed consent.
  - If the data does not allow the individual participant to be identified (or if such information is permanently removed) then completion of an informed consent form is not required

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## Exemptions from HSC

- ◆ Research conducted in established or **commonly accepted** educational settings, involving **normal** educational practices.
  - Research on regular and special education instructional strategies.
  - Research on the effectiveness of or the comparison among instructional techniques, curricular, or classroom management methods.

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## Exemptions from HSC

- ◆ Research involving the use of **educational tests** (cognitive, diagnostic, aptitude, achievement), **survey** procedures, **interview** procedures or **observation of public behavior**, *unless*:
  - Exceptions
    - (i) information obtained is recorded in such a manner that human subjects **can be identified**, directly or through identifiers linked to the subjects and
    - (ii) any **disclosure** of the human subjects' responses outside the research could reasonably **place the subjects at risk** of criminal or civil liability or be damaging to the subjects' financial standing, employment or reputation.
      - Research which deals with **sensitive aspects** of the subject's own behavior such as illegal conduct, drug use, sexual behavior, or use of alcohol, cannot be exempt from review.

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### Exemptions from HSC

- ◆ Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior that is not exempt under paragraph 2 (above), if:
  - (i) the human subjects are **elected or appointed** public officials or candidates for public office;  
or
  - (ii) **federal statute(s) require(s)** without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
    - ◆ Again, however...
    - ◆ Research that deals with **sensitive aspects** of the subject's own behavior such as illegal conduct, drug use, sexual behavior, or use of alcohol, cannot be exempt from review.

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### Exemptions from HSC

- ◆ Research involving the collection or study of **existing** data, documents, records, ...
  - if these sources are **publicly available** or if the **information is recorded** by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

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### Exemptions from HSC

- ◆ Research and demonstration projects which are conducted by or subject to the approval of **federal** department or agency heads, and that are designed to study, evaluate, or otherwise examine:
  - public benefit or service programs;
  - procedures for obtaining benefits or services under those programs;
  - possible changes in or alternatives to those programs or procedures; or
  - possible changes in methods or levels of payment for benefits or services under those programs.
- ◆ Certain taste and food quality evaluation studies.

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**Student Research Activities**

- ◆ Students conducting research involving human subjects shall first submit a protocol statement to the department in which the research will be conducted.
- ◆ The protocol is reviewed by a department committee composed of at least three faculty members or by an established departmental committee for the protection of human subjects.
- ◆ A judgment is then made by the committee regarding the value of the proposed research activity and the potential risk to human subjects.

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**Student Research Activities**

- ◆ The protocol, the department committee's judgment of risk to human subjects, and an assessment of the risk assumed by the subject are then forwarded to CPHS.
- ◆ For student research to be approved as "Exempt" or "No Risk," the departmental committee must be unanimous. When the vote within the department committee is not unanimous, the study in question must be submitted to the CPHS for its review.

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**Elements of a Consent Form**

- ◆ For guidance from the CSUS IRB go to:
  - <http://www.csus.edu/research/irb/>

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**Elements of a Consent Form**

- ◆ Explain procedures to be followed in the research project, and their purpose.
  - When the purpose of the research cannot be disclosed without biasing the behavior of the subjects in a way that could invalidate the study, the investigator may request that the procedures for obtaining informed consent be modified.
- ◆ Describe direct benefits to the participant;
- ◆ Describe discomforts or risks that can reasonably be expected;
- ◆ Offer to answer any questions about the research procedures;
- ◆ Explain that the subject is free to discontinue participation at any time;

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## Elements of a Consent Form

- ◆ Describe the extent to which confidentiality can be assured for information provided;
- ◆ Explain whether any compensation is available;
- ◆ Identify individuals who are responsible for the research, and explain how they may be contacted for answers to pertinent questions;
- ◆ Explain any conditions that determine whether a subject is eligible to participate in the project.

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## Elements of a Consent Form

- ◆ **Additional Information.** When appropriate, the investigator should also:
  - describe the number of participants;
  - explain that the research procedures may involve unforeseeable risks;
  - explain the circumstances in which the investigator would discontinue subject's participation;
  - explain consequences of the subject deciding to withdraw;
  - describe any additional costs the subject might incur;
  - describe how any significant findings will be communicated to the subject.

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### INFORMED CONSENT TO PARTICIPATE IN A RESEARCH STUDY UNIVERSITY OF CALIFORNIA, DAVIS

*The Reading Comprehension Abilities of Children with Attention-Deficit/Hyperactivity Disorder*

Principal Investigators: Stephen E. Brock, Division of Education (209) 331-7077  
Penelope Krener, M.D. Department of Psychiatry (916) 734-2969

#### Purpose of the Study

You are being asked to participate in a research study. The purpose of this study is to learn if children who have Attention-Deficit/Hyperactivity Disorders (ADHD) have difficulty understanding what they read. We hope that this study will help us to better understand the special instructional needs of children with ADHD.

#### Procedures

If you decide to volunteer, you will be asked to respond to questionnaires and your child will be given a series of tests. These tests will assess attention skills, vocabulary development, science knowledge, and reading abilities. Test administration will take about one hour. All tests will be administered by one of the principal investigators (Stephen E. Brock) who is a Licensed Educational Psychologist. All information obtained from testing will be shared with you. Also, you will be asked not to give your child the medication used to treat ADHD symptoms during the 24 hours prior to test administration. Your child may return to his or her normal medication routine as soon as testing is completed.

#### Risks

It is possible that your child may have difficulty sitting still for the hour required to take the tests.

#### Benefits

It is hoped that you will find the test results valuable in better understanding some of your child's learning abilities. However, there is no guarantee that this benefit will be obtained. You will be provided with a written report summarizing all test results. Upon request, individual consultation with the examiner will be arranged. Also, the opportunity to observe your child un-medicated will help to determine the effectiveness of medication therapy.

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No information will be used in any way that will identify your child to anyone besides authorized University of California, Davis, Child and Adolescent Attention and Learning Clinic personnel. However, absolute confidentiality cannot be guaranteed, since research documents are not protected from subpoena.

**Right to Refuse or Withdraw**

Participation in this study is purely voluntary. You have the right to withdraw your child from the testing at any time for any reason without any sort of consequences from withdrawing. The Investigators may terminate your participation at their discretion.

Parent's/Guardian's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Questions**

If you have any questions, please ask. If you have additional questions later, please contact Stephen E. Brock at (209) 331-7077. Locally, we can be reached through the office of Dr. Penelope Krener at (916) 734-2969.

**You will be given a signed and dated copy of this form to keep. You will also be given a copy of the Experimental Subjects Bill of Rights.**

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**WOULD YOU LIKE TO HELP WITH A STUDY?**

Hi, my name is Steve Brock. I am studying how children read. Your parents have given their permission for you to help me. Would you like to help me?

**What am I studying?**

I will be asking 4th, 5th, and 6th grade children to read. All of the children have problems paying attention. I want to know if they understand what they read. It will help teachers. I will be able to tell teachers about how children read.

**What will you be asked to do?**

If you agree, I will be giving you tests. The testing will be like school. Some tests will see how well you can pay attention. Other tests will tell me how many words you understand and what you know about science. Most of the tests will ask you to read. I will give the tests to you. The testing will take 1 hour. Your parents have agreed that you will not take any medication for one day before the tests. You can take your medication again as soon as the testing is completed.

**What will the tests do for you?**

I will tell you and your parents what I learn. This will help you and your parents. The test will tell us about how you learn. They may help us do a better job of teaching you. However, there is no guarantee that they will help you.

**Who will know about your testing?**

I will tell your parents and the doctors at the clinic about your tests. I will not tell anyone else about your tests. You can tell anyone you want to about the tests.

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**Can you change your mind?**

You can change your mind about helping me with the study. You can change your mind at any time. I will not be mad if you decide to stop taking tests.

Helper's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Questions?**

If you have any questions, please ask me.

\*\*\*\*\*

Do you understand the study? Do you understand what you will be asked to do? If your understand, and would like to help, please sign this paper. Once you sign this paper we will start the testing. Remember, you can change your mind at any time.

Date: \_\_\_\_\_ Signature of Helper: \_\_\_\_\_

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**Gaining Entry to the Research Site**

- ◆ Know the required procedures.
  - Research approval protocols
- ◆ Obtain approval.
  - Know who is in charge of such
- ◆ Have a well thought out research plan.
  - Be crystal clear about what you want to do.

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**Gaining Entry to the Research Site**

- ◆ Explain the study to all participants.
- ◆ Monitor the feelings of all participants and do every thing possible, without compromising the research, to accommodate to their desires.
  - Be nice!!! Typically, you need your participants way more than the need you.

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### Components of the Quantitative Research Proposal

- ◆ Introduction (Required by HSC)
- ◆ Methods (Required by HSC)
  - Participants
  - Instruments or measures
  - Design
  - Procedure
- ◆ Data Analysis
- ◆ Typically don't require a comprehensive Review of the Literature

Part of the mini-proposals

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### Introduction

- ◆ Topic.
- ◆ Related Literature.
- ◆ Hypothesis.
- ◆ Make sure to carefully define all terms.
  - What are the variables to be described, correlated, or manipulated (independent variables) and measured (dependent variable)?

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### Method (Participants)

- ◆ Population being sampled.
  - Discussed further in the next class meeting
- ◆ Number of participants to be sampled.
- ◆ Source of participants.
- ◆ Relevant characteristics of participants.

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### Method (Instruments)

- ◆ Addresses how you will collect the data used in the research.
- ◆ Report validity and reliability data if available.
- ◆ Indicate how a measures validity and reliability will be determined if it is not already available.

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### Method (Design)

- ◆ What type of structure will the study employ.
- ◆ Usually determined by the nature of the variables and their hypotheses.
  - e.g., understand/describe = descriptive (qualitative)
  - e.g., assessing relationships = correlational.
  - e.g., group comparisons = ex post facto or experimental.

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## Method (Procedure)

- ◆ A sequential, step-by-step account of how the study will be conducted.
- ◆ Sampling techniques.
- ◆ Post tests.
- ◆ Interventions or treatments.
- ◆ Acknowledged limitations of the procedure.
- ◆ Sufficient detail such that persons other than the experimenter could implement the design.

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## Data Analysis

- ◆ How will the obtained data be analyzed to obtain the studies results?
- ◆ Exactly how will the hypothesis be assessed?
- ◆ Includes both descriptive and inferential statistics.
  
- ◆ NOTE: not a graded element of the miniproposals (but still give this a shot)

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## Components of the Qualitative Research Proposal

- ◆ Prior fieldwork
- ◆ Title
- ◆ Introduction Section
  - Purpose of the research
  - Framing the study
  - Initial research questions
  - Review of the literature

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### Components of the Qualitative Research Proposal

- ◆ Research Procedures Section
  - Approach and rationale
  - Site and sample
  - Researcher's Role
  - Data collection methods
  - Data management and analysis strategies
  - Trustworthiness features
  - Ethical considerations
  - Potential contributions
  - Limitations

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### Portfolio Activity #3

- ◆ **Computer search printouts**
  - From **at least three (3)** different computer databases (e.g., PsycINFO, ERIC, MEDLINE), include in your portfolios printouts that provide information on at least one of you identified specific research questions.

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### Next Meeting

- ◆ Selecting a Sample
  - Read *Educational Research* Chapter 6.
  - Portfolio Element Due  
(#3) Computer Search Printouts

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