Doing Developmental Research

• How do scientists measure topics of interest in lifespan human development?
• General research designs
• Developmental designs

The Scientific Method

Involves 4 steps:
1. Choosing a question to be answered.
2. Formulating a hypothesis regarding the question.
3. Developing a method for testing the hypothesis.
4. Using the data to draw conclusions with regard to the hypothesis.

Measurement in Developmental Research

• Systematic Observation
  • Naturalistic Observation
  • Structured Observation

Sampling Behavior with Tasks

• Tasks thought to sample the behavior of interest
  • E.g., Lundy (2000)
  • Children’s face recognition

Self-Reports

• Participants answer questions asked either in person or on a questionnaire
  – Questionnaires
  – Interviews
    • Structured Interviews
    • Clinical interviews
• Structured Interviews
  – Useful when the goal is to collect self-reports on the same topics from all the people being studied

• Clinical interviews
  – Especially useful for obtaining in-depth information about an individual child

Research Designs

  – Correlational Designs
  – Laboratory Experiments

Correlational Studies

• Correlational Study
  – Look at relations as they exist in the real world

• Correlational Coefficient ($r$)
  – These real world relations are expressed as a correlation coefficient

Properties of correlations:

• Positive correlation:
• Negative correlation:
• No correlation:
Advantages of Correlational Research

• ____________________________________________
• ____________________________________________

Disadvantages of Correlational Research

• Can not establish causation

• Third variable problem

• Permissive parenting
• Children’s self-control

• Permissive parenting → lack of self control?
• Lack of self-control → permissive parenting?

Other factors:

Experimental Studies

• Experiment
  – Involves manipulating key factors that the researcher thinks are important
  – Independent Variable
    • _______________________________________
  – Dependent Variable
    • _______________________________________
  – Field Experiment
    • _______________________________________

Designs for Studying Development

• Longitudinal Studies

• Cross-sectional Studies

• Longitudinal-sequential Studies
Longitudinal Design

- **Procedure:**
  - Observe one age group repeatedly over time.
- **Information gained:**
  - describes age changes.
- **Advantages:**

Cross-sectional Design

- **Procedure:**
  - people of different ages at one point in time.
- **Information gained:**
  - Describes age differences.
- **Advantages:**

Longitudinal-Sequential

- **Procedure**
  - Cross-sections of children are tested longitudinally
- **Information Gained**
  - Information about continuity
- **Advantages**

Longitudinal (cont’d)

- **Disadvantages:**
  - Time-consuming, expensive.
  - Measures may later prove inadequate.
  - Participant drop-out.
  - Repeated testing

Cross-sectional (cont’d).

- **Disadvantages:**
  - Age differences may reflect cohort effects

Longitudinal-Sequential (cont'd)

- **Disadvantages**
  - Provides less information about continuity than a longitudinal study
  - ________________
Integrating Findings from Different Studies

• Meta-analysis
  – Integration of studies published on a topic over a substantial period of time.