

Non-Experimental Designs

Claudia J. Stanny
PSY 6217 – Research Design



Observation – Quantifying Behavior

- ☞ Developing Behavioral Categories
- ☞ Counting frequencies of behavior
- ☞ Measuring duration of behavior
- ☞ Interval measures for behavior
 - ♦ *Rare events – does the behavior occur in a given interval of time?*
- ☞ Behavioral sequences
 - ♦ *Developmental milestones*

Sampling Methods for Behavioral Observations

- ☞ Time sampling
- ☞ Individual sampling
- ☞ Event sampling
- ☞ Recording behaviors from a permanent record
 - ♦ *Video or audio tape*
 - ♦ *Advantages*
 - *Accuracy of measures*
 - *Detail of data recorded*
 - *Establishing reliability of observers*
 - ♦ *Disadvantages*

Reliability of Observers

- ☞ Measures of Reliability
- ☞ percent agreement
 - ♦ *.875 for both examples*
- ☞ Cohen's Kappa
 - ♦ $K = P_o - P_c / (1 - P_c)$
 - ♦ *Case 1: $K = .383$*
 - ♦ *Case 2: $K = .709$*
- ☞ correlation coefficients
- ☞ Cronbach's alpha
 - ♦ *This procedure is useful when there are 3 or more judges*

		Judge 1		
		Smile	Frown	
Judge 2	Smile	33	4	37
	Frown	1	2	3
		34	6	40

		Judge 1		
		Smile	Frown	
Judge 2	Smile	25	3	28
	Frown	2	10	12
		27	13	40

Multiple Observers

- ☞ Use for establishing reliability of observations
- ☞ How to use the data generated?
 - ♦ *Primary observer for data analysis – secondary observer for reliability assessment*
 - ♦ *Average values from each observer*
 - ♦ *Refine scores by resolving disagreements before data analysis*

Sources of Observer Bias

- ☞ Expectations of the observer
 - ♦ *Blind observation conditions*
- ☞ Record interpretations instead of objective observations
 - ♦ *Anthropomorphism in observation of animal behavior*

Qualitative Observations

- ☞ examples of qualitative data
 - ◆ *verbal descriptions of reactions*
 - ◆ *narratives of experiences (e.g., journal entries)*
- ☞ data analysis
 - ◆ *Extract common themes or elements*
 - ◆ *Develop frequency counts of the use of these themes*

Naturalistic Observation

- ☞ Unobtrusive Observations
 - ◆ *Hidden observers*
 - ◆ *Habituate participants to observation*
 - ◆ *Indirect measures of behavior*
 - *Measure artifacts of behavior – physical traces left as a result of behavior*
 - *Accumulation measures*
 - *Erosion measures*

Ethnography

- ☞ Participant observer studies
 - ◆ *Overt observation*
 - *Guides & informants*
 - *Focus groups*
 - ◆ *Covert observers*
 - *ethical issues*
 - ◆ *Problems of reactivity*
 - *Observer effects*
 - *Loss of observer objectivity*

Other Techniques

- ☞ Sociometry
- ☞ Case History
- ☞ Archival Research
 - ◆ *Consider how records are created in the archive*
- ☞ Content Analysis
 - ◆ *How will information be acquired for study?*
 - ◆ *How will content be defined and measured?*
 - ◆ *Control of reactivity & reliability of measures*

Meta-Analysis

- ☞ Quantitative approach to a literature review
- ☞ Identification of variables to examine
 - ◆ *Research domain must have some common measures across studies*
 - ◆ *Consider similarities of methods used in studies compared*
- ☞ Locate relevant literature
 - ◆ *Problem of inability to access null results that never get published*
 - ◆ *Variability in the editorial review of different journals*

Meta-Analysis

- ☞ Meta-analysis
 - ◆ *Compare the results of studies*
 - *significance levels attained*
 - *effect sizes reported*
 - ◆ *Combine studies with similar methodologies*
 - *Average effect sizes*
 - *Significance testing with combined samples*
- ☞ Difficulty of combining studies with slightly different methodologies
- ☞ Weighing the quality of different studies