

# Research Methods in Psychology

## Chapter 4: Observation

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### 😊 A fast review on the chapter 😊

Sampling behavior	Time sampling	
	Situation sampling	
Observational methods	Direct observational methods	Without intervention with intervention
	indirect observational methods	Physical traces Archival records
Recording behavior	Comprehensive records of behavior	
	Selected records of behaviors	
Analysis of observational data	Qualitative analysis	
	Quantitative analysis	
Thinking about observational research	Influence of observer	
	Observer bias	

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## Observational Research



- **You should know that researchers cannot observe:**
  - All the behaviors of all people
  - All the behaviors of a person
- **For this reason researchers observe**
  - *Samples* of individuals
  - *Samples* of behavior at particular times
  - *Samples* of different settings and conditions

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## Observational Research



- **Goal of sampling**
  - Choosing a representative sample that reflects:
    - Behaviors of larger population
    - People of larger population
    - Settings and conditions of larger population



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## Observational Research

- **Example:**
  - How many hours of television **did you** watch last week?
    - These hours show how much you typically watch TV?
    - Is the average for the number of hours of TV watched by:
      - all students on university?
      - all students on college?
      - all people?



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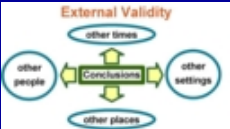
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## Observational Research

- **Use data from a sample to represent the population**
  - "Generalize" the findings from sample to population
  - Sample must be similar to population



- **External validity**
  - Extent to which a study's findings may be used to describe people, settings, conditions beyond those used in the study.

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### Sampling Behavior

- External validity depends to:
  - How behavior is sampled. Look at the below methods:
- Two methods
  - Time sampling
  - Situation sampling
- Goal: obtain representative sample of behavior



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### Sampling Behavior

- Time Sampling
  - Choose time intervals for making observations
    - Systematic (8:30, 10:30, 12:30)
    - Random (selecting few times randomly during a time period)



Time	Behavior	Observer
8:30		
9:00		
9:30		
10:00		
10:30		
11:00		
11:30		
12:00		
12:30		
13:00		
13:30		
14:00		
14:30		
15:00		
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19:00		
19:30		
20:00		
20:30		
21:00		
21:30		
22:00		
22:30		
23:00		
23:30		
24:00		

Don't use time sampling for observing behavior during rare events (e.g., hurricane)!!! because you will lose the beginning and end of an event!  
 Use Event sampling

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### Sampling Behavior

- Situation Sampling
  - Choose different settings, circumstances, conditions to observe a behavior (e.g., animals behavior in zoo & jungle).



- It improves external validity
- Use subject sampling to observe only some individuals within a situation.

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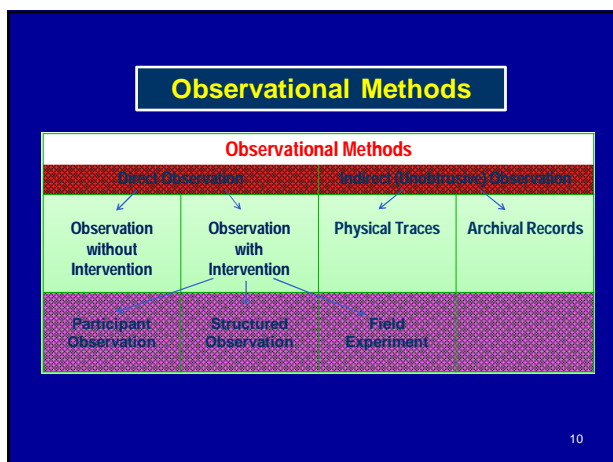
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### Direct Observation without Intervention

- **Naturalistic Observation**
  - Observation in natural (real-world) setting
  - No attempt to intervene or change situation
  - (Example, observing school students behaviors).
- **Goals**
  - Describe behavior as it normally occurs.
  - Examine relationships among naturally occurring variables.
  - Establish external validity of lab findings.
  - Use when ethical considerations prevent experimental manipulation.



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### Direct Observation with Intervention

- **Most psychological research follow direct observation.**
  - Give us more control over observations.
- **Three methods in natural settings**
  1. Participant observation
    - Disguised > Participants **do not know** that they are under observation.
    - Undisguised > Participants **know** that they are under observation.
  2. Structured observation
    - less control, less intervention than experimental research.
    - Example, Mother-child interactions.
  3. Field experiment



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### Observation with Intervention

- **Problem of reactivity**
  - People **change** their real behavior when they know they're under observation.
  - Goal: observe people's usual behavior
  - **Avoid** reactivity




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### Indirect Observational Methods

- **These methods test evidence of past behavior.**
  - Benefit > **Non-reactive** > people do not react toward them.
- **Two types of methods**
  - **Physical traces**
    - Use traces (natural or controlled) > E.g., Cigarettes, Clock settings, Chips color.
    - Products > E.g., paintings, music, tools.
  - **Archival records:** public and private documents describing activities of individuals, groups, institutions and governments.
    - Running records > continues and updated documents > school grades.
    - Episodic records > specific events in specific times > marrying document.

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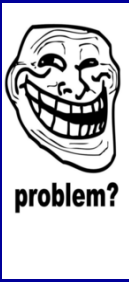
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### Indirect Measures



- **potential problems in archival records**
  1. **Selective deposit** > when some information is selected to be presented but other information no!
    - ✓ Example: self-image in Facebook profile.
  2. **Selective survival** > when some records or documents are missing or incomplete!
    - ✓ Example: family photo albums.
  3. **Spurious relationships** > when evidence indicate falsely that two or more variables are associated!
    - ✓ Example: Crime & ice cream.

✓ **Solution** > Seek converging evidence using **multi-method** approach. ☺

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### Recording Behavior

- **Comprehensive record**
  - Video, audio recordings; written field notes
- **Select specific behaviors**
  - Checklists, ratings

Our method for recording behavior determines how results are

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Measured, summarized, analyzed, reported


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### Measurement Scales

- **Nominal**
  - Categorize behaviors, events. Example: gender.
- **Ordinal**
  - Rank-order. Example: educational degrees.
- **Interval**
  - Specify distance on a dimension. Example: intelligence.
    - Rating scales are treated as interval scales
- **Ratio**
  - Specify distance plus meaningful zero. Example: weight




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### Analysis of Observational Data

- **We choose a method for analysis depends on**
  - Goal of the study.
  - How data are recorded > Selected or comprehensive...
  - Measurement scale > nominal, ordinal, ....
- **Two types of analysis**
  - **Qualitative:** When we record comprehensive behaviors using a archival records.
  - **Quantitative:** When we record selected behaviors using a measurement scale.

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### Analysis of observational Data



- **Qualitative Analysis**
  - ✓ **Data reduction** is the process of abstracting and summarizing behavioral data.
  - ✓ **Data reduction** occurs when researchers verbally summarize information.
  - ✓ **Content analysis**
    - Identify relevant source
    - Obtain representative sample from the source.
    - Code content using descriptive categories.

➤ **Coding:** identify units of behavior using specific criteria ☺

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### Analysis of Observational Data

- **Quantitative Analysis**
  - Is a statistical summary of observations.
  - Descriptive statistics depend on measurement scale:
    - Nominal: relative frequency
    - Ordinal: rank percentages
    - Interval and ratio: mean, standard deviation

Question:

Can you say the statistical

s  
u  
m  
m  
a

The Question: Favorite Disney Character?

The Results:

Answer	Per %	Graph
Mickey Mouse	27.0%	<div style="width: 27%;"></div>
Donald Duck	36.3%	<div style="width: 36.3%;"></div>
Goofy	22.8%	<div style="width: 22.8%;"></div>
Pluto	10.8%	<div style="width: 10.8%;"></div>
Minnie Mouse	4.0%	<div style="width: 4.0%;"></div>

There were 1078 responses on 11/18/2007

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### Analysis of Observational Data

Object or Phenomena

Observer 1

Observer 2

Method of Measurement

Observer 1

Observer 2

- **Inter-observer reliability**
  - Measure of agreement between observers
  - If measurement scale is:
    - Nominal: percent agreement
    - Ordinal: Spearman rank-order correlation
    - Interval and Ratio: Pearson correlation

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### Analysis of Observational Data

#### Factors that affect inter-observer reliability

- **Characteristics of the observers**
  - Bored, tired, amount of experience
  - Train observers and provide feedback
- **Clearly define events and behaviors to be observed**
  - Provide examples
  - Clear operational definitions



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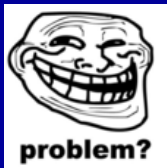
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### Thinking Critically About Observational Research



- **Problems in observational research**
  - Influence of the observer on behavior
  - Observer bias

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### Thinking Critically About Observational Research

#### Influence of the Observer

- **Reactivity:** people change their usual behavior when they know they're being observed.
- **Demand characteristics:** people pay attention to cues and information in the situation to guide their behavior.



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### Thinking Critically About Observational Research

#### Controlling reactivity



- Hiding observer
- Disguised participant observation
- Use indirect observation
- Adapt participants to observer
  - Habituation
  - Desensitization
- Limit the information of participants about study

✓ **Reactivity** is a potential problem in most psychological research.

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### Thinking Critically About Observational Research

#### Ethical issues when controlling reactivity

- Privacy and informed consent
  - Observe people without their knowledge



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### Thinking Critically About Observational Research

#### Observer bias

- ✓ Observers often have expectations about behavior.
  - Example: expectations based on research hypotheses.
- ✓ Expectations can lead observers to look at only particular behaviors.
- ✓ Observer bias: systematic errors in observation that result from expectations
  - Also called experimenter expectancy effects



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