Field Research

Observational Methods

- Research involving the direct observation of behavior.
- Three decisions to make:
  - Will the observation occur in a natural or contrived setting?
  - Will the participants know they are being observed?
  - How will the participants’ behavior be recorded?

Observational Studies

- Naturalistic/behavioural observation
  - Natural setting
  - E.g., Education and Clinical Research
  - Controlled Observation
    - Clear, explicit decisions about what, how and when to observe (systematic)
    - Draw time samples
  - Non-controlled Observation
    - Sampling rarely used

Observational Studies

- What to observe
  - Nonverbal behavior
  - Spatial behavior
    - cultural norms for personal space
  - Linguistic behavior
  - Extralinguistic behavior
    - Rate, volume, tendency to interrupt etc. (paralinguistic)
Project

- How would you measure level of customer interest in 10 store product displays

Field Research

Goal is to assess natural reactions to situations
Research designed to achieve a balance between control and naturalism
- People's natural behavioral responses to manipulated IVs are studied in natural settings
- Experimenter tries to establish conditions as close as possible to true experiment
- Goal is to allow causal conclusions to be drawn in natural setting

Implicit Prejudice

- Microaggressions
- Food court in a mall

Limitations of Field Research

- Control over IV is limited
  - Manipulation is often natural and uncontrolled
  - Choices of operational definitions for IV are limited
- DV is usually behavioral
  - Is measured by means of observation
  - Can learn what people do, but not why they do it
  - Choices of operational definitions for DV also limited
- Control over extraneous variables is limited
  - Results in plausible alternative explanations
    - This threatens...??
Participants in Field Research

Like participants in laboratory research, may be based on unrepresentative samples:
- Participants choose to be in particular settings

Example: *Hospitals* can be randomly assigned to experimental or control condition:
- However, people are not randomly assigned to hospitals
- Some hospitals take everyone; others take only those with insurance
- Hospitals can be affiliated with a university or religious organization or neither
- Therefore, patients at different types of hospitals likely differ from one another

Choosing a Research Setting

Must consider:
- extent to which setting restricts the sample of people available
- the amenability of the setting to manipulation of IV
- Better to use a variety of settings
  - Enhances ...???

Choosing a Research Setting

Natural settings vary along a dimension of "publicness":
- At high end of dimension, could include finding any member of the public
  - Examples: Streets, parks
- At middle of dimension, are reasonably public settings where people are likely similar on one or more characteristics
  - Examples: Ballparks, city halls
- At low end of dimension, settings are less public and more institutionalized
  - Examples: Rehabilitation centers, student dormitories

Problems in Field Experiments

Vulnerability to outside interference

Control over extraneous variables
- Must ensure that conditions of IV are not confounded with aspects of environment
- Must consider extent to which people self-select into settings
Gold's (1958) Typology of the Participant Observer Roles

- The complete participant
  - takes an insider role, is fully part of the setting and often observes covertly.
- The participant as observer
  - researcher gains access to a setting by virtue of having a natural and non-research reason for being part of the setting (not covert), as observers, they are part of the group being studied. This approach may be common in health care settings where members of the health care team are interested in observing operations in order to understand and improve care processes.
- The observer as participant
  - researcher or observer has only minimal involvement in the social setting being studied. There is some connection to the setting but the observer is not naturally and normally part of the social setting (not covert).
- The complete observer (nonparticipant or naturalistic observer)
  - the researcher does not take part in the social setting at all. An example of complete observation might be watching children play from behind a two-way mirror (covert).

Complete Participant Observation

- The researcher participates as a full member of the group or community being studied
- Others are unaware of observer's role
  - Offers unique insight into events of interest
  - Raises ethical issue of deception
- Rosenhan (1973)

<table>
<thead>
<tr>
<th>Response</th>
<th>Percentage making contact with patient</th>
<th>Number of patients judged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurses</td>
<td></td>
<td>180</td>
</tr>
<tr>
<td>Physicians</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of patients judged by one psychiatric hospital</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Number of patients judged by one psychiatric hospital and one other staff member</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>Number of patients judged by one psychiatric hospital and one other staff member</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

Pros
- Insight, accessibility
- High external validity

Cons
- Time consuming
- Dangers
- Loss of objectivity
Observer as participant

- The researcher interacts no more than necessary with the members of the group or community being studied

Nonparticipant observation

- Also called Naturalistic Observation or Complete Observer
- The observer avoids taking part in the research study
  - Observe and record behavior in natural setting without intervening in any way
- Pro
  - High external validity
  - Can measure behaviors not able to manipulate
- Con
  - Time-consuming
  - Important not to be disruptive

Contrived Observation

- Also called structured observation
- Sets up situation instead of waiting for behavior to occur naturally
- Often conducted in lab
- Also set up in natural settings
  - E.g., bird feeder
  - Piaget

Disguised vs. Nondisguised Observation

- Should participants know that they are being observed?
Problems in Naturalistic Observation

Reactivity
- Be aware of possibility that people’s behavior is affected when they know they are in a research study
  - Especially important when behavior is illegal or not normative

Disguised vs. Nondisguised Observation

- Ways to minimize reactivity:
  - Habitation
  - Partial concealment
  - Participants know that they are being observed but not the specific aspects of behavior being observed
  - Observer does not reveal that s/he is a researcher
  - Knowledgeable informants
    - People who know the participants well observe and rate their behavior
  - Unobtrusive/ nonreactive measures
    - Indirect measures that can be taken without participants knowing they are being studied

Nonreactive Measurement

- Physical traces
  - Erosion measures
  - Accretion measures
- Archives
  - Running records
  - Other records

Simple Observation
- Researcher does not intervene
- External appearance
- Analysis of Expressive movement
- Physical Location Analysis
- Observation of Language Behavior

Problems in Naturalistic Observation

Cognitive biases can bias the data as it is based on observers’ perceptions
- E.g., *selective attention*, people attend to certain stimuli
  - Focus on what is salient
- May affect what is attended to in observation
- E.g., *reconstructive memory* leads observers to remember what they think should have happened rather than what did happen
  - Mental scripts tell them how events *should* unfold
Problems in Naturalistic Observation

- Possible cognitive biases can be reduced by:
  - Training observers
  - Using behavioral ratings rather than observers’ interpretations of behavior
  - Recording the behavior as it occurs
  - However, participant observers often can’t take notes
  - Doing so would inhibit their full participation in events
  - Notes are written afterwards

Note Taking Improved By

- Recording observations as soon as possible and in private
- Not talking about observations until they are recorded
- Diagramming physical layout of setting and using it to trace sequence of events
- Outlining the topics covered and recording observation by topic
- Using manageable time periods
- Not worrying about getting exact record of any dialog
- Picking up pieces of lost data after initial recording session

From Bogdan, 1972

Problems in Naturalistic Observation

Effects on observer

- Role of participant observer is stressful
  - Dual role of participant and recorder of events
  - Especially true if identity is concealed
  - Observer may feel anxiety or guilt about deception

Realism

- Mundane
  - Extent to which events in lab are likely to occur in real world
  - Physical characteristics mimicked
- Experimental
  - Experienced as real
  - Psychological aspects reproduced
Behavioral Recording

- Narrative records
  - Full description of a participant’s behavior
  - Piaget used this type of recording when studying his children’s behavior.

- Checklists
  - Researcher records whether particular behaviors or attributes were observed
  - Must formulate clear operational definitions

Behavioral Recording

- Frequency Method
  - Instances of behavior during fixed time period

- Duration Method
  - Time engaged in each behavior during fixed time period
  - How long a particular behavior lasts
  - Examples: how long people talk during a conversation; how long people engage in eye contact

Increasing the Reliability of Observational Methods

- Observational Rating Scales
  - Researcher rates the quality or intensity of a certain behavior.
  - For example, rating a child’s crying as (a) slight, (b) moderate, or (c) extreme

- Researchers must have clear and precise operational definitions for all behaviors that will be observed and recorded.

- Raters should practice using the coding system by comparing and discussing their practice ratings.
  - Subjective interpretations by observer
  - List of behavior categories
  - Well-trained, multiple observers
    - Inter-rater reliability (Cohen’s Kappa – 0 to 1.0)
**Observational Methods**

- Interval Method
  - Does behavior occur during pre-determined intervals?
  - Can be more representative
- One/Zero Sampling
  - Record whether a behavior is occurring at predetermined intervals
  - Tends to overestimate duration and underestimate frequency
  - Better with shorter intervals

**Sampling Observations**

- Time Sampling
  - Observe-record sequence through series of intervals
    - Observe at every X seconds interval
- Event Sampling
  - Shift to different behaviors or events at each new interval
- Individual Sampling
  - Focal Individual Sampling
    - Id one participant to be sampled during 1st interval, then switch etc.
    - Focus on one subject at a time

**Sampling cont.**

- Continuous Recording
  - Record everything that happens
- Scan Sampling
  - Scanning whole group simultaneously

**Ethogram**

- **Associative Mechanisms Allow for Social Learning and Cultural Transmission of String Pulling in an Insect**

<table>
<thead>
<tr>
<th>Behavioral Interaction</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrounging (Sc)</td>
<td>The observer holds the food between its jaws and the demonstrator holds the food in its mouth.</td>
</tr>
<tr>
<td>Following (Fo)</td>
<td>The observer follows the demonstrator as it moves around the arena.</td>
</tr>
<tr>
<td>Reaching (Re)</td>
<td>The observer reaches out to touch the demonstrator's body.</td>
</tr>
<tr>
<td>Assisting Positioning (AP)</td>
<td>The observer positions itself adjacent to the demonstrator.</td>
</tr>
<tr>
<td>Attending (At)</td>
<td>The observer watches the demonstrator as it moves around the arena.</td>
</tr>
<tr>
<td>Pulling Action (PA)</td>
<td>The observer pulls the food towards itself.</td>
</tr>
<tr>
<td>Reward Pull Action (PA)</td>
<td>The observer pulls the food towards itself while being rewarded.</td>
</tr>
</tbody>
</table>

**Sampling**

<table>
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<th>Attending</th>
<th>Pulling</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.15</td>
<td>0.3</td>
<td>0.45</td>
<td>1:00</td>
<td>1:15</td>
<td>1:30</td>
</tr>
</tbody>
</table>

**Sampling**

- **Continuous Recording**
  - Record everything that happens
- **Scan Sampling**
  - Scanning whole group simultaneously
Physiological and Neuroscience Approaches

- Five types of psychophysiological and neuroscientific measures
  1. Measures of neural electrical activity (e.g., EEG)
  2. Neuroimaging (e.g., fMRI)
  3. Measures of autonomic nervous system activity (e.g., heart rate, respiration)
  4. Blood and saliva assays (e.g., cortisol)
  5. Precise measurement of overt reactions (e.g., EMG)

Strengths and Weaknesses of Observational Research Designs

- Pros:
  ◦ Directness – Actual behavior vs. reports of it
  ◦ High external validity
  ◦ Flexibility
  ◦ Study of those who can not communicate verbally

- Cons:
  ◦ May not gain insight into reasons for behavior
  ◦ Lack of control over extraneous variables
  ◦ Ethical concerns