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

Implicit Prejudice

- Microaggressions
- Food court in a mall

Field Research

Goal is to assess natural reactions to situations

- To do so, participants should be unaware that they are being studied

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

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

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

Choosing a Research Setting

- Choice of setting should be governed by hypothesis to be tested
- Better to use a variety of settings
  - Enhances …???
- Good settings
  - Researcher has sufficient control over events to permit manipulation of IV
    - Assignment to condition should be random
  - Events used to manipulate IV should be similar to events that usually take place in that setting

Problems in Field Experiments

- Vulnerability to outside interference
  - Events outside experimenters' control can disrupt study
    - Examples: Accident on subway line could delay commute; address on "lost" letter could be smeared in rainstorm

Problems in Field Experiments

- Control over extraneous variables
  - Must ensure that conditions of IV are not confounded with aspects of environment
    - Study of commuter behavior should examine both morning and evening commuters
  - Also, must consider extent to which people self-select into settings
    - Can be more confident if get same results in multiple settings

Participant Observation

A type of naturalistic observation in which the researcher participates in the research setting and interacts with the informants

- Can range from complete participation to complete nonparticipation
- Level of deception varies from
  - *Complete deception:* Others are unaware of observer's role as a researcher
  - *Absence of deception:* Others are fully aware of researcher's role

Types of Participant Observation

Complete participant

- 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

Participant Observation

- Researcher interacts with and becomes one of the participants
  - Drug busts
  - Mobs
  - Occult activities
  - Rosenhan (1973)

Response	Percentage making contact with patient	
	Psychiatrists	Nurses
Moves on with head averted	71	88
Makes eye contact	23	10
Pauses and chats	2	4
Stops and talks	4	0.5

Number of patients judged	193
Number of patients confidently judged as pseudo patients by at least one staff member	41
Number of patients suspected by one psychiatrist	23
Number of patients suspected by one psychiatrist AND one other staff member	19

Participant Observation

- Pros
  - Insight, accessibility
  - High external validity
- Cons
  - Time consuming
  - Dangers
  - Loss of objectivity

Types of Participant Observation

Participant as observer

- The researcher participates fully in the research setting
- Others know that s/he is a researcher
  - Deception therefore not an issue

Disguised vs. Nondisguised Observation

- Should participants know that they are being observed?
- Problem with undisguised observation:
  - Reactivity – participants act differently because they know they are being watched
- Problems with disguised observation:
  - May violate right of informed consent
  - Potential violation of privacy

Disguised vs. Nondisguised Observation

- Ways to minimize reactivity:
  - Habituation
  - Partial concealment
    - participants know that they are being observed but not the specific aspects of behavior being observed
  - 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

Types of Participant Observation

Observer as participant

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

Types of Participant Observation

Nonparticipant observation
also called Naturalistic Observation

- The observer avoids taking part in the research study
  - Observe and record behavior in natural setting without intervening in any way
- Pros
  - High external validity
  - Can measure behaviors not able to manipulate
- Cons
  - Time-consuming
  - Important not to be disruptive

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).

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

Problems in Naturalistic Observation

Cognitive biases: Normal human cognitive processes can lead to bias in perceptual processes

- Can bias the data as it is based on *observers'* perceptions
  - Example: Due to *selective attention* people attend to certain stimuli
    - Focus on what is salient
    - May affect what is attended to in observation

Problems in Naturalistic Observation

  - Example: People have *reconstructive memory* that leads them to remember what they think should have happened rather than what did happen
    - Mental scripts tell them how events *should* unfold
- Possible cognitive biases can be reduced by
  - training observers
  - using behavioral ratings rather than observers' interpretations of behavior
  - recording the behavior as it occurs

Problems in Naturalistic Observation

Recordkeeping

- 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

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

Problems in Naturalistic Observation

Reactivity can be reduced if observer does not reveal that s/he is a researcher

- However, doing so can contaminate naturalism
- Observer might unintentionally influence people and events

Nonreactive Measurement

- **Physical traces**
  - Erosions 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

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

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

Triangulation

- Two or more methods of data collection
- Observe only
  - Miss reasons for behavior
- Survey only
  - Miss correspondence with actual behavior

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

- Measures of Latency
  - Reaction time
    - the time that elapses between the presentation of a stimulus and the participant's response
  - Task completion time
    - the length of time it takes participants to solve a problem or complete a task
  - Interbehavior latency
    - the time that elapses between two behaviors

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

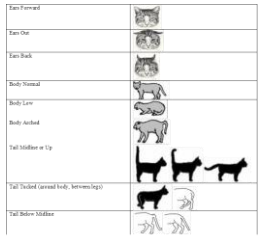
Behavioral Recording

- 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

Increasing the Reliability of Observational Methods

- 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)

Ethogram



Sit	**Cat's rear end is on the ground**
Lay	Cat is not standing, or locomoting: may be resting on abdomen, side, or back, with legs extended or tucked under
Stand Still	The cat is not in locomotion, but holds an upright posture
Walk–Stalk	Cat is locomoting with chest and abdomen close to the ground, legs not fully extended, may be pressed against walls or objects
Walk–Normal	Cat is locomoting with legs extended and relaxed body posture
Rub	Cat presses its body, or head, against object or surface
Jump	The cat uses its legs and feet to vertically lift off of the ground
Purr	A "rumbling" sound which does not require the cat to open its mouth, often accompanied by other relaxed–type behaviors
Growl	A deep "groaning" sound often accompanied by stress–type behaviors
Hiss	A sharp exhale of air
Meow	A staccato annunciated vocalization, onomatopoeic in sound "merrr–oww" or "rah–oowww"
Yowl/Whine	A greater intensity meow often with the last vowel sound extended
Paw at Door	The cat uses one or both front feet to manipulate the door
Eat Treats	Cat ingests food
Behind E	The cat is behind the experimenter's body
Rub on E	Cat presses its body, or head, against the experimenter
Lick E	Cat uses tongue in repetition on the experimenter
Climb on E's lap	Cat locomotes onto the experimenter's crossed legs
Bite E	Cat closes its mouth and teeth around experimenter, may be seen when cat is behaving negatively (as in attack) or positively (as in "love bites")
Scratch E	Cat uses paw and claws in a swiping motion
Paw E	Cat uses paw(s) to manipulate an object or touch an object, without the use of claws

Observational Methods

- Interval Method
  - Does behavior occur during pre-determined intervals?
  - Can be more representative
  - Like: One/Zero Sampling
  - Record whether or not a behavior is occurring at predetermined intervals
  - Tends to overestimate duration and underestimates frequency
  - Better with shorter intervals

	:15	:30	:45	1:00	1:15	1:30	1:45	2:00	2:15	2:30	2:45	3:00
Ears Forward												
Ears Out												
Ears Back												
Ears Out-of-View												

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
  - Id one participant to be sampled during 1st interval, then switch etc.
  - Like: Focal Individual Sampling
  - Focus on one subject at a time

Sampling cont.

- 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:
  - Ethical concerns