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
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
- 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)

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

Complete Participant Observation

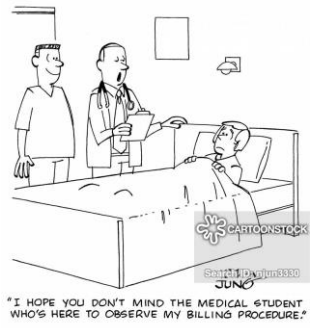
- Pros
  - Insight, accessibility
  - High external validity
- Cons
  - Time consuming
  - Dangers
  - Loss of objectivity

Participant as observer

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

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
- Pros
  - High external validity
  - Can measure behaviors not able to manipulate
- Cons
  - 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:
  - Habituation
  - 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**
  - 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

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

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

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

Behavioral interaction	Description
No Interaction (NI)	The observer is flying around the arena, is not attracted to the demonstrator, and never lands by the demonstrator or on the table. The demonstrator pulls flowers alone. There is no direct interaction between the two bees.
Scrounging (Sc)	The demonstrator pulls a flower alone. The observer is flying around the arena. Once the demonstrator is drinking from the flower, the observer lands at her side and starts drinking too.
Following (Fo)	The observer is attracted to the demonstrator and follows her for more than 5 s when walking around the edges of the table.
Reaching (R)	The observer tries to reach underneath the table to power her way underneath and sometimes extend the proboscis towards the blue flower.
Accidentally Moving String (AMS)	Whilst walking next to the edge of the table, the observer accidently moves a string. This may move the flower slightly closer to the edge, but the bee makes no further attempt to move the flower via the string.
Attending (A)	The observer is at the side of the demonstrator, in direct contact with her, when she is pulling the string. The observer does not touch or manipulate the string herself. The observer feeds from the flower once the demonstrator finishes pulling the flower from under the table.
String Touching while Attending (STA)	As in Attending (A), but the observer touches the string and tries to manipulate it, however ineffectively (no movement of the flower closer to the edge of the table).
Pulling Action (PA)	The observer pulls the string with her mandibles or legs. The flower moves closer to the edge of the table, though not close enough to allow the bee to obtain the reward. The observer is in direct contact with the demonstrator.
Pulling Action alone (PAa)	Same as above, except that the demonstrator is either flying around or is busy with another flower.
Rewarded Pull (RP)	The observer pulls the string with her mandibles or legs. The flower moves closer to the edge of the table. The other bee is in direct contact with the observer or is trying to pull the same flower. The bees obtain the reward.
Rewarded Pull alone (RPa)	The observer pulls the string with her mandibles or legs. The flower moves closer to the edge of the table. The other bee is either flying around or is busy reaching another flower. The observer (alone) obtains the reward.

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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 underestimates frequency
  - Better with shorter intervals

	0.15	0.3	0.45	1:00	1:15	1:30	1:45	2:00
Scrounging								
Following								
Reaching								
Attending								
Pulling								

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

Scan Sampling

Time	Animal and Behavior
1200	3 running, 2 sitting, 1 drinking, 1 lying
1210	1 running, 2 walking, 1 sitting
1220	3 running, 1 sitting
1230	2 running, 3 walking, 1 drinking
1240	3 walking, 2 sitting, 1 lying
1250	2 sitting, 1 lying, 4 walking
1300	4 running, 2 sitting, 1 lying

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