

# Unobtrusive Measures



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One can state, without exaggeration, that the observation of and the search for similarities and differences are the basis of all human knowledge.

Alfred Nobel



# Unobtrusive Measures



Unobtrusive and Nonreactive Measures are those that do not entail direct interaction with the subjects being studied; i.e., there is no talking to, interviewing, questioning of the subject.



# Unobtrusive Measures



## Key Founders

- Eugene J. Webb
- Donald T. Campbell
- Richard D. Schwartz
- Lee Sechert

*Unobtrusive Measures: Nonreactive Research in the Social Sciences* (1966) remains the definitive work in this arena.



# Unobtrusive Measures



## Key Founders

- Webb and colleagues saw social psychology as overly reliant on two primary types of measurement: (1) created situations and (2) questionnaires or surveys.
- Developed unobtrusive measures as an alternative.



# Unobtrusive Measures



Sechrest: “Unobtrusive Measures invoked the notion that we do not have the correct, right, accurate, valid measure of anything. We have measures that are more or less useful under different circumstances. And the best response that we can make to our measurement problem is to use measures that get at the construct of interest in a very different way.” (Interview, 2003)



# Unobtrusive Measures



## Modern Researchers

- Raymond Lee
- Allan Kellehear (1993)
- Shaughnessy & Zechmeister (1990)



# Unobtrusive Measures



**“Unobtrusive Measures” defined by a range of techniques:**

- Erosion
- Accretion
- Archival research
- Simple observations
- Contrived observations



# Natural Erosion Measures



- Measure natural change or wear of some object/entity over time with a known starting point and end point.
- Historic example:
  - Researchers measured the wear of vinyl tiles at a popular exhibit at a museum.
  - Researchers validated the measurements by checking maintenance records relating to vinyl tile repair/replacement.
  - Researchers provided further validation for the erosion measurement by taking head counts for the popular exhibit.
- This example of unobtrusive erosion measure has three sources of information
  - The natural erosion of the vinyl tile
  - Maintenance records of vinyl tiles in the museum
  - Head count for the exhibit.



# Controlled Erosion Measures



- Measure change or wear of some erosion instrument intentionally implemented to track change.
- Examples:
  - The John Wallace study; measured children's activity level via wear on shoes over time. The instrument was measured at the starting point and then again at the ending point. The two scores were compared to produce an estimate on activity level.
  - Kasper and Throne study; using an adapted watch called an "actometer" to measure the activity level of children. The information collected was compared and validated against children's oxygen consumption.



# Accretion



- Physical Traces of behavior. Based on the accumulation of evidence.
- Examples:
  - Cigarette butts on the floor, studies of human trash, accretion of laundry, pencil marks from chewing.
- Friedman and Wilson (1975) described natural versus controlled accretion.
  - Natural: underlining in a textbook
  - Controlled: number of broken glue seals



# Erosion and Accretion



## Advantages

- Free of reactive bias
- Inconspicuous, anonymous
- Rarely underestimates findings
- Can study characteristics of a population no longer available for study.

## Disadvantages

- Some behaviors do not leave lasting traces.
- Identifiable individual data requires permission.
- uncertainty of others who have come between researcher and subjects



# Archival Records



- Examines data previously collected for other records or scholarly purposes
  - Actuarial records
  - Birth certificates
  - Marriage certificates
  - Death certificates



# Archival Records



## Advantages

- Fraction of cost of collecting new data
- Already collected and ready to use!

## Disadvantages

- Little can be done about missing or spotty records
- New or overlapping data can be difficult to obtain from same or equivalent samples
- Selective deposit / survival (multiple reports of same phenomenon)
- Your statistics are only as good as the first person who recorded them.



# Simple Observation



- A time-sampling observation in which it is assumed the observation infers current or past behavior of subjects
- Examples
  - exterior physical signs
  - expressive movement
  - physical location
  - language behavior
  - conservation sampling
- Simple observation is gathered first hand with the researcher as the data collection instrument.



# Simple Observation



## Advantages

- No response bias
- First-hand knowledge
- Allows for collection of other information to reduce alternative hypothesis.



## Disadvantages

- Because it is a snapshot of a population, there is a chance that it is atypical.
- Data gathering instrument (the human) can vary over observations.

# Contrived Observation



- Using hardware or stepping into environment with attracting attention to “force” data in an unobtrusive way.
- Example
  - *Hardware*: recorded observation in which the collection tool is inconspicuous (photography, videotaping, one-way mirrors)
  - *Stepping into environment*: horn honking for cars that don't move when traffic light turns green.

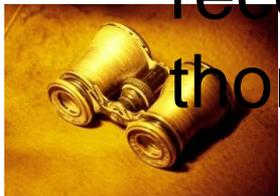


# Contrived Observation



## Advantages

- Since it is recorded, reliability checks are possible.
- Can expand scope of research after collecting data.
- Observations are recorded quickly and thoroughly.



## Disadvantages

- It's a permanent record.
- Privacy issues
- Legal issues

# Older Techniques



- Analysis of physical traces
  - Indicate people's behavior
  - Indicate peoples' interaction with the environment (e.g. littering).
- Archival data
  - Arranged intentionally, according to the research topic/question.
- Simple observations
- Content analysis
  - Thematic analysis of a text
  - Indexing
  - Quantitative descriptive analysis



# Modern Methods



- Recent developments offer new tools for unobtrusive methods.
- Hardware techniques
  - Voice recording
  - Camera
- Use of the internet
  - Analyzing written material on the internet
  - Log file analysis



# Disciplines



Social Sciences

Social Psychology

Education

History

Geography

Archaeology

Communication / Mass Media Sciences



# Context in which the Measure was Developed



Developed to encourage creative and opportunistic exploitation of unique measurement possibilities.



# Logic of Measurement Technique



- Reduce measurement error
- Reduce bias
- Improve external and internal validity
- Only restricted by the researcher/s imagination
- This can be accomplished by selecting and implementing combinations of measurement techniques to avoid overlapping weaknesses.



# Logic of Measurement Technique



- Founders express frustration for most social science research.
- Most Social Research conducted surveys or questionnaires
- These methods are fallible and have bias if used alone.
  - foreign to research environment
  - create attitudes
  - measure attitudes
  - elicit atypical responses
- Only gather information from willing participants.
- They are often used alone.



# Ethics



## Two major issues

- Privacy
- Participants' informed consent



# Ethics: Privacy



- Since measurement procedures are meant to evade awareness, where does measurement begin to impede on privacy?

## ● People

- Public behavior of public figures is okay.
- For citizens (non-public figures) consider what is being observed (e.g. leg jigging in coffee shops probably okay)

## ● Places

- Physically public vs. momentarily or psychologically private



# Ethics Measures



- Use places that are psychologically *and* legally public (i.e. no public toilets).
- Post warnings
- Ask for permission post facto. (However, may compromise sample size.)
- Informed consent - Participants are told the nature of the research and its procedures, risks and benefits.



# Ethics Measures: Examples



- *Sex and Acknowledgement: A Nonreactive Study* (Moore, 1984)
  - Archival
  - Used book acknowledgements to illustrate changes in gender in field of psychology.
- *Variability in Automatic Activation as an Unobtrusive Measure of Racial Attitudes: A Bona Fide Pipeline?* (Fazio et al, 1995)
  - Used unobtrusive methods to circumvent issues in self-reporting.
  - Observation of behavior under pretense of word and recognition exercise used to assess degree of racial prejudice.



# Unobtrusive Measures

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*El Fin!*



