How to Quantify Qualitative Data

Judgment Study
- Using raters to quantify observational data
- E.g., Bales study of small group interactions
  - A group of participants discuss on a topic for a period of time
  - Trained observers observe group behavior through one-way screen (or watch video-tape recordings)
  - Trained observers record categories of «socioemotional» and «task-related» events

What Can Be Learned from Quantifying Observations?

Judgment Study
- Using raters to quantify observational data
  - Advantage:
    - We can use basic statistics
      - How many «events» there were per hour?
      - How many of them were «problem solving events»
    - We can measure judge-to-judge reliability
      - Degree of which different judges were rate the same event similarly

What Can Be Learned from Quantifying Observations?

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

Measures of Latency
- Reaction time - the time that elapses between the presentation of a stimulus and the participant's response

What Can Be Learned from Quantifying Observations?

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.

What Can Be Learned from Quantifying Observations?

Measures of Latency (cont.)
- 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
How to Quantify Qualitative Data
- Content Analysis is an example of judgement study
  - Sorting and categorizing content of materials (books, videos, newspapers, etc.)
  - The goal is to classify words, phrases, or other units of text into a limited number of meaningful categories or to rate those units of text on specified dimensions.

Guidelines for Content Analysis
- Guidelines
  - Good judge-to-judge reliability (inter-rater reliability)
  - Categories should be relevant to hypotheses
  - Choose a good sampling procedure

How Are Raters or Coders Chosen for Judgment Study?
- Use intuition
- Consult research literature
- Pilot testing

How to Quantify Qualitative Data
- Archival Material
  - Secondary observation (information is twice removed from source)
  - Researchers analyze data pulled from existing records, such as census data, court records, personal letters, old newspapers, etc.
Reactive and Nonreactive Observation

- Reactive Observation
  - Observations affect behavior observed
  - E.g. Simply asking students about their plan to engage in a certain behavior increases the likelihood of engaging in that behavior

- Nonreactive Observation
  - Observations don't affect behavior observed
  - Concealed (secret) measurement
    - E.g. Hidden recording device
  - Partial concealment (secrecy)
    - The act of recording is evident by who is recorded not
  - What might be the ethical problems in such research!

Reactive and Nonreactive Observation

- Unobstrusive observation
- Participants are unaware of observation
- Rational vs. emotional appeals
  - 1935 Election (Hartmann)
  - Rational and emotional leaflet
  - Examined actual voting behavior
  - Found greatest effect for emotional appeal
- Lost-letter technique

Identifying Rival Hypotheses

- Rival (alternative) Hypotheses
  - Alternative explanations for the reported results
  - Possible ways to improve the studies
  - This is how science progresses

Identifying Rival Hypotheses

- Individual's personal values affect their perception
  - Participant's value orientation was determined with a questionnaire as
    - Predominantly aesthetic, theoretical, economic, social, political, religious
    - Words related with these orientations were presented rapidly
    - Participants recognized words related with their predominant value faster
    - They perceive these words more quickly

- Rival Hypothesis:
  - Individuals read more literature relevant to their values
  - They are more familiar words relevant to their values
  - They recognized words because they are familiar not because they perceive them faster
  - Next step would be to conduct an experiment in which familiarity of words were equated
Translation and Back Translation

- Questionnaires are developed in one language
  - Beck's Depression Inventory was developed in English
- Translation: Translating questions from source language to target language
- Backtranslation: Translating question from target language and source language
- Control if meaning is changed, or if anything lost in translation