Blueprints for Constructing Psychology

Lecture Goals

- Discuss types of person information
- Discuss constructs and the construct problem
- Discuss operational definitions
- Discuss ways to operationalize constructs

Types of Person Information

- ________________________________
  - gender, SES, smoker?
  
- Can be counted ________________________________
  - sneezes, goals scored, # people who stop at stop sign

- Can be measured in ________________________________ units
  - Temperature, amount of sleep, age, height, weight, blood pressure, amount weight lifted, time to complete task

- __________ be measured in standardized units
  - General abstract concepts
  - Personality, IQ, memory span, coordination, attention, self-esteem, conscientiousness, agreeability, motivation, skills, abilities

  - Called ________________________________

Constructs

- Psychologists want to measure constructs
  - Intelligence      Happiness
  - Creativity       Attention
  - Love             Hate
• Generally interested in _________ types of constructs

• Those that ___________________ change
  • Called Independent Variables (“I” for influence, or initiate change)

• Those that ___________________ change
  • Called Dependent Variables (“D” for detect change)

• Examples
  • Relationship between similarity and attraction
  • Relationship between frustration and aggression
  • Relationship between mood and agreeability
  • Relationship between alcohol consumption and driving errors
  • Relationship between medication and symptom reduction

The Construct Problem
• How do we measure constructs ____________________?
  • Can’t measure in standardized units

  • Can’t assume “_____________________” understanding
    • Same concept can have many meanings
      • Relationship between frustration and aggression?
      • Relationship between similarity and attraction?

• Need a solution that promotes…

  • ____________________ measurement
    • Falisifiability
    • Convergence
    • Public Verification/__________________________

• Solution = ____________________________________________
Operational Definitions

- Re-define concepts and constructs as specific, observable, and
  - Intelligence => IQ test
  - Aggression => # punches during class
  - Customer satisfaction => Survey
  - OCD => DSM-IV R

5 Ways to Operationalize Constructs

- Observations of behaviors
  - Anxiety level based on hand wringing

- Self-reports
  - Anxiety level based on self description

- Psychological tests
  - Anxiety level based on score on personality test

- Physiological measures
  - Anxiety level based on blood pressure reading

- Performance on other tasks
  - Speed/accuracy on clerical test

Operationalizing with Observations

- General methods
  - Naturalistic observation
  - Case studies

- Naturalistic Observation
  - Briefly observe behavior of many in
    - Work
    - Play
    - Mock setting (usability)

- Examples
  - # tickets before and after Click it or ticket campaign
  - Goodall (1986) and chimp tool making
  - Bobo doll study

- Case Studies
  - Observe same subject/group
• Clients
• Patients
• Families

• Advantages
  • Good for hypothesis generation
  
  • Great for __________________________
  
  • Easy to collect data about ______________________________
  
  • Good for learning about a single case or individual

• Concerns
  • Not as good for evaluating ______________________________
  • Selective attention of observer
  • Illusory correlations
    • Perception of a relationship ______________________________
  • Intrusive or guess intentions
  • Bias & expectations
  • Observer ______________________________
    • Inter-rater reliability
  • Coding costs
  • ______________________________

Operationalizing with Self-Report

• General Methods
  • Testimonials
  • Surveys
  • Questionnaires
  • Interviews

• Testimonials

• Concerns
  • Personal beliefs
  • The “Person Who”
  • Vividness
  • Sales tool
• Surveys/Questionnaires/Interviews
  • Techniques for getting self-reported attitudes, beliefs, ______________________________

• Advantages
  • Good for hypothesis generation about ______________________________
  • Easy to collect lots of data quickly
  • Good for showing changes in attitudes ______________________________
  • Good for identifying people with specific attributes
  • Good for learning about an ______________________________

• Concerns
  • ______________________________
  • Literacy
  • Intentions ______________________________

______________________________ (from Tversky and Kahneman, 1981)
  • Positive frame
    • If Program A is adopted, exactly 200 people will be saved.
    • If Program B is adopted, there is a 1 in 3 probability that all 600 people will be saved and a 2 in 3 probability that no people will be saved.

  • Negative frame
    • If Program C is adopted, exactly 400 people will die.
    • If Program D is adopted, there is a 1 in 3 probability that nobody will die and a 2 in 3 probability that all 600 will die.

**Operationalizing with Psychological Tests**

• Evaluating physical limits, abilities, ______________________________

  • Physical tests
    • “The Right Stuff”
    • Firefighter tasks

  • Psychomotor tests
    • Perfection
    • Typing
• Evaluating mental limits, abilities, ______________________________
  • Cognitive Tests
    • Problem solving tests (Hobbits & Orcs, Water Jugs, Ping Pong Balls)
    • Memory tests
  • Personality tests
    • MMPI
    • Integrity Tests
    • Inkblot/TAT

**Operationalizing with Physiological Measures**

• Heart rate
• Blood Pressure
• Galvanic skin response (lie detector)
• Hormone levels (stress & cortisol)
• EEG, EKG
• PET, CAT, MRI

• Good for learning about the ______________________________

• Less helpful in evaluating ________________________________

**Operationalizing with Task Performance**

• Luck - ________________________________
• Strength and agility – firefighter ladder climbing
• Verbal abilities – crossword puzzles
• Hand-eye coordination - basketball shooting
• Music/Sports skill learning - recital, race, meet/match