Psychology: Explaining Behavior

Practice exercise

- Researchers have found that people with low self-confidence are more susceptible to flattery than those of high self-confidence.

- Researchers have found that people with high self-confidence are more susceptible to flattery than those of low self-confidence.

We do NEED to do the research!

Ways of Knowing -- Intuition

- Intuition
  - Draw on personal observations & knowledge
  - Create “logical” causal explanation
  - Problem: May or may not be true

Intuition: Potential Problems

- Illusory correlations (observations)
  - Overestimation of the co-occurrence of two events
  - Ex: Couples adopt -- then become pregnant
    - Salient event -- more memorable
    - Negative case: adopt - no pregnancy
      - More common
      - Less memorable
    - People overestimate adopt-pregnant

Intuition: Potential Problems

- Confirmation bias (observations)
  - Better memory/processing of events consistent with our beliefs
  - (Contributing factor to stereotypes)
  - Result: Reasoning with faulty information

  - Ex: Couples adopt -- become pregnant
    - Believe there is a relationship between the two
      - Process positive instances
      - Ignore negative instances
      - Strengthens “belief”
    - Hold onto our “beliefs/theories” about the world

Intuition: Potential Problems

- Inferential Bias
  - Bias to infer causality from correlation
  - If two things are correlated (tend to occur together)
    - Bias to construct causal explanation
      - One event caused the other
        - (WRONG -- correlation does not imply causation)
    - Ex: Couples adopt -- Become pregnant
      - Causal explanation?
      - Easy to construct a believable “story”
    - But is it true????
      - Ex: high/low self confidence & flattery?
Intuition is OK as a starting point for research ideas
- Don’t stop with just the idea
- NEED TO VERIFY EMPIRICALLY
Intuition led people to believe that:
- Skull size (and therefore brain volume) was related to intelligence
- Teaching subjects such as Latin exercised the brain, and would transfer to other domains
- Athletes shouldn’t drink water during practice
And even the contradictory notions that:
- Birds of a feather flock together / Opposites attract
- Absence makes the heart grow fonder / Out of sight, out of mind

7 Ways of Knowing: Authority
- Believe something to be true because a trusted source (authority) claimed that is was.
- Do you ever do this?
- Potential Problem – How did authority gain information?
  - Intuition?
  - Faulty research?
- Ex: Aristotle claimed that heavier objects fall faster than lighter objects (intuition and logic)
  - People believed for over 1000 years
  - Galileo showed that it was false (research)
- Authority -- sometimes best option available
  - But -- don’t blindly assume they are correct

8 Ways of Knowing: Science
- Scientific Method
  - Make observations to verify/test our ideas
  - Do so in a systematic, objective way – avoid biases, confounds, etc.
  - Advantages:
    • Self-correcting – if we are wrong, we will know it (eventually)
    • Ultimately will lead to the best answer
- Characteristics of Scientific Approach:
  - Skeptical Attitude
  - Empirical Approach

9 Skeptical Attitude
- Don’t accept assertions without data to back them up
- Question how the data was collected
  - Were sound research methods used?
- Look for alternative explanations for findings
  - Biases?
  - Confounds?
- Check/verify findings from other scientists before accepting
  - Uncovers bad research
    • Results due to something else
    • Uncovers fraudulent research
- Tentative acceptance of theories/ideas
  - May currently be best available explanation
  - Our understanding can change with new data

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11 Empirical Approach
Knowledge is built from observations
Take care to avoid biases and subjectivity
- Scientist is aware of these biases -- takes steps to avoid
- Seek to be as objective as possible
  • Make observations that others are able to verify
  • Others can replicate our results
  • Objective vs. Subjective measures
    - Objective -- other observers can verify/confirm
    - Subjective -- info available only to “observers”

12 Assumptions of the Scientific Method
- Ordered System -- systematic relationship among events
  - Can be observed, described, understood
- Determinism -- all events have a cause
  - These causal relationships can be understood
- Parsimony -- the simpler, the better
  - Simple mechanisms and relationships are preferred over more complex ones
  - More generalizable

13 Wheel of Science
- Knowledge advances with the development and testing of theories
- With each cycle, understanding becomes closer to true state of the world

14 Variables
- Psychology -- relationship among variables
- Variable -- anything that can assume different values
- Ex:
  - Test anxiety and test performance
  - Birth order and autonomy
  - Word length and memory span
  - Exposure to media violence and aggressive behavior
  - Alcohol use and condom use
  - Hormone levels and toy preference

15 Goals of Scientific Method
- Understanding usually progresses in this order
- Description -- characterize and catalog variables of interest
  - Describing characteristics of phenomenon
- Prediction -- identify relationship among variables
  - Relationship -- able to predict one from the other
- Explanation -- establish causal relationship
  - Understand HOW one variable influences the other
- Control -- use knowledge to improve human condition
  - Understanding of causal relationship -- allows control of phenomenon

16 Necessary Conditions for Causal Inference
- Temporal Precedence
  - Cause has to precede the effect
- Covariation
  - When cause changes, effect should change
- Elimination of plausible alternative explanations
  - Rule out other possible causes
  - ** most difficult to establish
Types of Research

- Basic vs. Applied
  - Differ in terms of goals or objectives

  - Basic Research
    - Goal: advance theoretical understanding
    - Test hypotheses derived from theories
    - May or may not have immediate applied implications

  - Applied Research
    - Goal: solve specific problem
    - Arrive at best solution
    - May or may not have immediate theoretical implications

Basic vs. Applied Example

- Basic
  - How situational factors influence behavior
  - How/why colors influence behavior/mood
  - Develop model/theory of relationship/mechanism

- Applied
  - Do the color of prisoner uniforms affect aggressiveness?
  - Do prisoners in green/blue/pink uniforms exhibit less violent behavior?