Psychology 101

History, Psychological methods

Psychology: A definition
- Psyche: the mind
- Ology: the study of
- Definition: the study of behavior and mental processes

Question
- How does the mind relate to the body/brain?

Long long ago...
- YO! The mind is separate from the body...
- That's right Soc, and knowledge is innate (we're born with it)

Along came Aristotle
- Not quite guys, the soul/mind is part of the body. The are not separable. Also, knowledge is something we acquire through experiences.

What Aristotle did...
- He loved data and math
- He observed the world and people around him
- Beginning of Psychology as a science
New definition of Psychology

- It is the *scientific study* of behavior and mental processes

Modern takes on these old theories

- Some modern scientific minds have agreed with both sides
- Rene Descartes agreed with Socrates and Plato that the mind and body are separate and knowledge is innate

The other side

- John Locke agreed with Aristotle that observation is key and we only acquire knowledge through observation
  - This is the beginning of Empiricism
  - We are born a "blank slate"

Wilhelm Wundt

- Credited with the first psychological experiment and starting the first psychological laboratory
- Started "structuralism" – we’ll get back to this shortly

Question

- Do cell phones impair driving?
- Do we have problems dividing our attention?
- How could you study this?

Here’s how structuralism would study the same problem

- Method of introspection
- 1913: Dallenbach
  - Two tasks
    - Counting metronome beats while adding numbers out loud
  - Asked the subjects to report their experiences to study attention
Introspection: An example

- One subject:
  - "The sounds of the metronomes, as a series of discontinuous click, were clear in consciousness only four or five times during the experiment, and they were especially bothersome at first."
- What conclusions can you draw from this?
- How scientific is this?

Psychology’s problems

- Mary Calkins: first woman to finish a PhD in Psychology (she was denied the degree for being a woman)
- Eventually she was given the degree after her death

Psychology’s problems

- John Watson: wanted to demonstrate that learning occurred after birth
  - Little Albert: 9 month old baby conditioned to be terrified of white rats (he was adopted a few months later, still fairly terrified of white rats)

Are behaviors complex or simple?

- What drives a little boy to desire a red fire truck?

3 levels of analysis

- Biological
- Psychological
- Socio-cultural

Psychology is a science

- How do we learn things?
  - Authority figures
  - Intuition and Use of Reason
  - Experiences
Authority Figures

- Open to bias
- Authorities could be wrong
- Drug recalls
- Are eggs good for us or bad for us?

Use of Reason

- If you folded a sheet of paper on itself 100 times, how thick would your folded paper be?
  - 800 trillion times the distance between the Earth and the Sun
- If you had enough rope to circle the Earth at the equator, how much more rope would be needed to circle the Earth at 1 foot off the ground at the equator?
  - Only 6 more feet
- Videos: Dowsing; Aura Healing

Problems with Reason

- Hindsight Bias
  - The "I knew it all along phenomenon"
- Overconfidence
  - We think we are better than we actually are
    - If I asked you to unscramble these, how long would it have taken you?
      - LNPTA - PLANT
      - WREAT - WATER
- Let's try:
  - OCHSA
  - DOSNU

Obviously we need to have some scientific way to deal with things

- The Scientific Method
  - Theories: Establishes a connection - is TESTABLE
  - Hypothesis: predictions about what will happen
  - Research and Observations: test it out

Types of Research

- The Case study
  - Study one person to try and apply their case to the world
  - Studying one person with Schizophrenia
    - They got better by drinking Ice Tea
    - Thus, every Schizophrenic should drink Ice Tea
  - Not always too useful, but some rare disorders can only be studied via case studies

Observational Research

- Observing interactions between sons and fathers, mothers and daughters
- Observing interactions between doctors and nurses
  - Nurses are less likely to speak up and disagree with doctors
  - Attempts to identify obstacles to having a productive workplace
  - Jane Goodall with her chimpanzees
Would you like to take a survey?

- Looks for relationships between survey items

Correlation

- Think *relationship*
- Examines the relationship between two things
- As one thing increases, what does the other do?
- As height increases, what does weight do?

Graphical representations

The correlation “r”

- $r =$ correlation coefficient
- It is at most 1 and at least -1
- An $r$ value of 0 means no correlation
- An $r$ value of -1 means a perfect negative correlation
- An $r$ value of +1 means a perfect positive correlation
The correlational coefficient

- If you get a value between 0 and 1, your correlation is positive
- If you get a value between 0 and -1, your correlation is negative
- The closer to 1, the stronger the positive correlation
- The closer to -1, the stronger the negative correlation

What does a correlation mean?

- If low self-esteem correlates with depression, what can we learn from this?
- Does low self-esteem cause depression?
- Does depression cause low self-esteem?
- Is there something else causing both low self-esteem and depression (like a bad breakup?)

Correlation does not equal Causation

- We can NEVER find the cause of something using correlations
- It can only tell us about the relationship between two things

Correlation does not equal Causation

- In the Philippines, contraception use positively correlates with number of appliances owned
  - Solution to population control
  - Something else must be causing this
  - Socio-Economic Status

Illusory Correlations

- When we believe a correlation exists because it seems to exist
  - "Wear a coat outside because if you don’t you’ll catch a cold"

Perceiving order in random events

- New York 3-number lottery on September 11th, 2002 was 9-1-1
- In Utah, 3 grandchildren from 3 daughters were delivered on the same day
- New Jersey lady wins lottery TWICE! That’s one lucky girl!
Experiments

- Attempt to find a cause and effect relationship
- Independent Variable: what is manipulated
- Dependent Variable: what is measured

The need for control

- The Placebo Effect
  - Knowing that you are being helped will make you better
- Placebo: a “fake” drug
  - Maybe a sugar pill that looks just like the drug being studied
- Double-Blind Procedure
  - Neither the patient or the doctor knows whether they received the placebo or the drug
- Placebo Video