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Chapter 1- Thinking Critically With Psychological Science

Need for Psychological Science:

- The "grandmother test" – tidbits of knowledge getting passed down through tradition
    - We don't always know if it is good information
    - "Birds of a feather flock together" = like minded people tend to get along
    - "Opposites attract"
    - ^ They got passed down, but their opposite so which one is actually correct?
- Potential problems relying on intuition (personal experiences) and common sense
    - *Hindsight bias*: you learn what the outcome is, then you're like "oh yeah duh" and you think you could have predicted it or it was the obvious thing that was going to happen
        - Explaining what happened yesterday or in the past
        - Example:
            - Higher amounts of sleep lead to greater academic achievement: more awake, pay attention better
            - Lower amounts of sleep lead to greater academic achievement: cramming for test so you know more information
            - Problem with hindsight bias is after you learn about an outcome you can have any explanation for almost anything. As a researcher you want to be able to make predictions
    - *Overconfidence*: you feel like you're never wrong and know what is going to happen and you know more than you actually do
        - Huge danger in being overly confident when studying for an exam under this assumption
        - When shown that they aren't accurate, participants explain away the results
        - Placing a bet: you think a bet because you think you're going to win and you were confident enough in your team to put money on them but they loose and you come up with excuses of why they lost "my team would have won if… the coach didn't blow the call"
    - *Perception of patterns in random events:*

Asking & Answering Psychological Questions:

- The scientific method:
    - *Theory*: an explanation using an integrated set of principles that organizes observations and predicts behaviors or events

        - Big thing
    - *Hypotheses*: testable predictions
        - Specific prediction- what do I expect to happen IN THIS circumstance
        - Allows us to show support for, revise, or reject a theory
    - *Operational definitions:* a statement of the procedures used to define research variables
    - Replicate… and expand
- Observing and describing behavior:
    - *Case study*: an in depth study of one individual conducted in hopes of revealing universal principles
        - HM's brain study

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    - *Survey method:* method of obtaining self-report data from a particular group.
        - Population- all the cases in a group being studied, from which samples may be drawn
        - Random sample- a sample that fairly represents a population because each member has an equal chance of inclusion
    - *Naturalist observation*- observing and recording behavior in naturally occurring situations without trying to manipulate and control the situation
        - Overt observation- you know you are being watched, you know that there is a researcher there taking notes on your behavior
        - Covert observation- people being studied don't know that they're being watched
        - Participant observer- you embed yourself within the group that you're studying
            - Ex: 21 jump street, drew Barrymore in never been kissed
            - Can do this covert as well as overt
        - Non- participant observer
            - Can be cover or overt
            - Non-participant and overt is an administrator watching a class room
            - Non-participant covert- administrator setting up a hidden camera in a classroom and we don't know about it
    - *Correlation*- measure of the extent to which two factors vary together
        - Looking at two different characteristics/traits- shown on graph
        - <u>Direction</u>:
            - Positive- when one variable increases, so does the other
                - Low scores on variable 1 = low scores on variable 2 and vice versa (low goes with low and high goes with high)

            - Negative- when one variable increases, the other decreases
        - Strength: the closer the absolute value of the correlation is to 1, the stronger the relationship
        - Correlation ≠ causation
            - Variable 1 could cause variable 2 or variable 2 could cause variable 1
            - There could be a third variable that could case variable 1 and variable 2
    - *Experimentation*: investigator manipulates one or more factors (independent variables) to observe the effects on some behavior or mental process (dependent variables)
        - Independent variable- variable you are manipulating
        - Dependent variable- measureable effect
        - Ex: how much sleep effecting school
            - Independent variable: hours of sleep student gets
            - Dependent variable: exam performance
        - Must hold constant (control) other factors that you aren't interested in

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CHAPTER 2
Its all about the brain… or is it?

- Phrenology
    - Biological psychology- concerned with links between biology and behavior
        - Sleep & dreams
        - Biological causes of psychological disorders
            - Drilled holes in top of head to allow evil spirits to escape when people back in the day had something like schizophrenia but now they know its linked to neurotransmitter disorder
        - Drives (sex, thirst, hunger)
    - Biopsychosocial model
        - Biology
        - Individual psychology- you're experiences as an individual
            - Birth order, socioeconomic status, how much pressure your parents/guardians put on you
        - Social influences- where are you living? What time period?
    - You don't have a round head because…
- Neural communication
    - **Neurons**: responsible for delivering information from brain to body and vice versa
        - Similar to cells in body:
            - Contains *cell body (soma)*- the cell's life support center