- What is psychology?
  - Science of behavior and mental processes
    - Systematically testing data
- Hindsight bias
  - The tendency to believe, after learning an outcome, that one would have foreseen it
    - I knew it all along phenomenon
    - Results in overconfidence
    - Leads us to overestimate our intuition
- What is armchair psychology and why is it unscientific?
  - Based on speculation and casual observation
  - Unscientific:
    - The influence of beliefs may be bias
    - You can do this psychology from your arm chair
      - No one gets out of their seat to test the knowledge
  - Problems with basing conclusions on casual observation
    - People miss a lot of information while doing casual observation
    - We may ignore instances that disconfirm out beliefs
- Wilhelm Wundt
  - Birthed psychology in 1879 in Germany
- How has psychology shifted between the study of cognition and the study of behavior?
  - Focused on cognitive processes until the 1920s
    - Consciousness
    - Mental events
    - Memory
  - Focused on behavior from the 1920s-1960s
    - Behaviorism backlash
    - Studied observable behavior
    - Argued that cognitive processes couldn't be objectively measured and couldn't be scientifically studied
  - The 1960s
    - Cognitive psychology returns
    - Imaging processes developed
    - Psychologists could no longer ignore that you could not learn everything by behavior
    - Modern day psychology: cognition and behavior
- Clinical psychologists vs. psychiatrists
  - Clinical psychologists:
    - PhDs: diagnosis and treatment
    - Treat mental illness
  - Psychiatrists:
    - MDs
    - Prescribe medication
- The different psychologists
  - Biological psychologists:

        - Study the influence of biology on psychological processes
        - Memory and language
    - Cognitive psychologists:
        - Study of mental processes
    - Developmental psychologists:
        - Study of how people change over a lifespan
    - Personality psychologists:
        - Study of individual differences
    - Social psychologists:
        - Study of interpersonal influences
    - Industrial/organizational psychologists:
        - Applies psychology principles to a work setting
- Biopsychosocial approach
    - Behavioral and mental phenomena arise from interaction of biological, psychological and social influences.
    - Example: experiencing an itch on your back
        - Biological factors: allergies, bug on back (sensory)
        - Psychological factors: nervous/anxious, distractions, recently heard about bed bugs.
        - Social factors: seeing other people scratching
- Nature vs. Nurture
    - The debate whether heredity or the environment impacts human psychological development
    - Nature: what you were born with, qualities, biological factors
    - Nurture: your experience, the environment
        - They both work together
    - We inherit predispositions that are modified by the environment
    - Gene/environment interactions:
        - Genes can be turned on/off according to the environment
        - Genes have indirect influence for psychological factors
        - Genes make building of proteins.
    - What is wrong with this debate?
        - They are inseparable
        - Interact with each other
        - Nurture works on what nature endows
        - Inherit predispositions that are modified by the environment
        - Human behavior is not determined by biological factors
- Critical thinking
    - Critical thinking is important
        - Scientific thinking
        - Questions others and yourself
            - Do not think because I believe it, it must be true.
    - Aspects of critical thinking
        - Examine how terms are defined
            - Ask what do you mean by that
        - Look for potential biases, hidden agendas

        - Was that study done or sponsored by the company that makes the product?
    - Inspect the evidence, ask how do you know
    - Watch for overgeneralizations/oversimplifications
        - Beware of ethnocentrism: belief that owns cultural/ethnic group is normal.
        - Attributing behavior to a single cause
            - Oversimplification because complex behavior is going to be influenced by many different causes.
    - Consider alternative interpretations of the evidence
    - Be cautious of reports in the media
        - Could be skewed to make in their favor
            - This creates a bias
        - Something reported in the popular media doesn't mean it is good science or scientifically important
    - A single study is not definitive
        - Can trust a scientific study if supported by lots of research
    - Expectations to the general rule don't necessarily disprove the rule
        - Psychology studies tell you what is true on average.
- The scientific method
    - The steps:
        - Identify research question
            - Formulate a hypothesis: a specific, testable prediction
            - Hypothesis (research question) is based on observation, previous research or theories
            - Theory:
                - In depth explanation of a phenomena that simplifies and summarizes a body of research findings
                - Good theories should generate testable hypotheses
                - Theory worthless if it can't be tested, proved or disproved
        - Decide how to test the hypothesis
        - Gather data
            - Through experiment or observation
        - Analyze data
            - Statistics
        - Draw conclusions
        - Communicate results
            - Publish or present
- Case studies
    - May not apply to others
    - Does not prove anything because they are very limited in generalized ability
    - Done on a single individual or small group
        - Done if the individual has a rare disorder or experienced very rare circumstances
        - No other way to find out about rare conditions→ avenues for further research.