Psychology’s Roots, Big Ideas, and Critical Thinking Tools
Chapter Overview

- Psychology’s roots
- Four big ideas in psychology
- Why do psychology?
- How do psychologists ask and answer questions?
- Psychology’s research ethics
- Use psychology to become a stronger person—and a better student
The Scientific Attitude

- Modern science is possible due to three basic attitudes:
  - Curiosity
  - Skepticism
  - Humility
The Scientific Attitude: Curiosity

- Research commences with the passion to explore and understand the world without misleading or being misled.
- Questions to consider:
  - Does the idea work?
  - When put to the test, can the idea’s predictions be confirmed?
The Scientific Attitude: Skepticism

- Skeptical testing can reveal which claim best matches the facts.
- Sifting reality from fantasy requires a healthy skepticism.
  - Attitude that is not cynical, but not gullible either
- Questions to consider:
  - What does one mean?
  - How does one know?
The Scientific Attitude: Humility

- Researchers can make mistakes and must be willing to be surprised and follow new ideas.
- One’s opinions do not matter.
  - Truths revealed in response to one’s questioning matter.
Psychology’s Roots

Roots of Psychology can be traced to two much older fields of study:

- **Philosophy** – a means of exploring and understanding the general nature of many aspects of the world, primarily through introspection
- **Physiology** – the scientific study of living organisms and of life-sustaining functions and processes, primarily through observation
- In ancient Greece, the two fields were not much different.

The word psychology comes from the Greek word *Psyche* which means “the soul.”
Plato vs. Aristotle

- Plato believed in nativism, that knowledge is innate and best discovered through reflection and introspection.
- Aristotle believed in empiricism, that knowledge was best acquired through observation and experimentation.
Rene Descartes and John Locke

Descartes believed in mind-body dualism--that the mind and body were made of entirely different materials. A rationalist, he believed that knowledge is innate and we discover it through introspection.
Rene Descartes and John Locke

Locke believed that the mind and body were both physical matter, and he believed that man is born with a blank slate (tabula rasa in Latin), that experience and observation write on that slate and we thus become enlightened.
Phrenology

Phrenology was developed by Franz Joseph Gall as a method of studying mental characteristics through analyzing the shape and size of the skull as well as “reading” the bumps on the skull. It was immensely popular in the 1900s.

Though the methods were false, the concept that there is some localization for brain functions proved to be true.
Broca’s area

In 1861, Paul Broca discovered an area of the brain responsible for speech production. We call this area of the brain Broca’s area.
Psychological Science’s Birth and Development

- Psychology as a science has a rather recent history -- less than 150 years.
- In 1879, philosopher and physiologist Wilhelm Wundt set up the first psychological laboratory in Leipzig, Germany.
- He and his associates measured things like reaction times. The method they used was called *introspection*, using themselves as experimental subjects.
Psychological Science’s Birth and Development

- Edward Titchener, a student of Wundt, further refined introspection and established the *structuralism* school of psychology, attempting to reduce sensations down to their most basic elements.
Psychological Science’s Birth and Development

- American philosopher William James took a very different approach.
- He founded the “school of” functionalism while teaching at Harvard in the United States.
- James was particularly interested in why people behave the way they do and how they adapt.
- In 1890, James wrote the book *Principles of Psychology* which is still studied today.
Psychological Science’s Birth and Development

- James was drawn to British Naturalist Charles Darwin’s theory of natural selection, the inspiration for evolutionary psychology. James saw the mental development of man as an adaptation as described by Darwin.
Psychological Science’s Birth and Development

- Russian physiologist Ivan Pavlov discovered **classical conditioning** accidentally as he was studying digestion in dogs.
Psychological Science’s Birth and Development

- Pavlov’s work later influenced behaviorists like John B. Watson and B.F. Skinner.
Austrian physician Sigmund Freud developed **psychoanalysis**, a controversial theory explaining behavior and psychological problems and innovative methods to treat psychological disorders. Freud proposed that one’s mental health was primarily influenced by one’s relationship with parents in early childhood.
Psychological Science’s Birth and Development

- Swiss biologist Jean Piaget explored children’s developing minds, establishing his stages of cognitive development.
- Piaget became the most influential theorist in the area of childhood development.
Psychological Science’s Birth and Development

- There were not many prominent women in the early days of psychology.
- William James accepted Mary Whiton Calkins as a student into his graduate seminar, despite protests from the men. She went on to outscore all the men on the Ph.D. exams, but Harvard refused to grant her the degree she had earned.
- In 1905, she was elected as the first female president of the American Psychological Association (APA).
Psychological Science’s Birth and Development

- Margaret Floy Washburn became the first woman to officially receive a Ph.D. in Psychology.
- She became the second female president of the APA in 1921.
The early pioneers in psychology defined psychology as “the science of mental life.”

Two American psychologists, John B. Watson and B.F. Skinner dismissed this definition, maintaining that psychology should be the study of observable behavior. You cannot scientifically study or observe a sensation, a feeling or a thought.

Behaviorism became one of psychology’s two major forces well into the 1960s.
Psychological Science’s Birth and Development

- The other major force was Freudian psychology, based upon the theories of Sigmund Freud, which emphasized our unconscious thought process and our emotional responses to childhood experiences and unconscious sexual conflicts.
In response to the rather negative approaches of behaviorism and Freudian psychology, **Carl Rogers** and **Abraham Maslow** developed the **humanistic approach** to psychology, proposing that man not only has free will, but actually strives to achieve his potential.
## Early Definitions of Psychology

<table>
<thead>
<tr>
<th>Groups</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early pioneers</td>
<td>Science of mental life</td>
</tr>
<tr>
<td>Behaviorists</td>
<td>Scientific study of observable behavior</td>
</tr>
<tr>
<td>Freudian</td>
<td>Emphasis on unconscious thought processes and emotional responses to childhood experiences</td>
</tr>
<tr>
<td>Humanistic psychologists</td>
<td>Stress on people's growth potential</td>
</tr>
<tr>
<td>Cognitive psychologists</td>
<td>Scientific exploration of how information is perceived, processed, and remembered</td>
</tr>
<tr>
<td>Cognitive neuroscientists</td>
<td>Interdisciplinary study of the brain activity linked with mental activity</td>
</tr>
</tbody>
</table>
Definition of Psychology

Today’s definition of *psychology* is:

**The science of behavior and mental processes**

Behavior is anything a human or nonhuman animal does--any action that can be observed.

Mental processes are the internal states--such as thoughts, beliefs, and feelings--that we infer from behavior.
Retrieve and Remember 1

- Describe the three parts of the scientific attitude.

  - What event defined the start of scientific psychology?

  - How did the cognitive revolution affect the field of psychology?
Life After Studying Psychology

- The study of psychology and its critical thinking strategies have helped prepare people for varied occupations.
- Facebook CEO Mark Zuckerberg majored in psychology and computer science while at Harvard.
- Comedian Jon Stewart was a psychology major at William and Mary.
Psychology in Court

- Forensic psychologists:
  - Apply psychology’s principles and methods in the criminal justice system
  - May consult on witnesses, or testify about a defendant’s state of mind and future risk
Psychologists work in a variety of fields

- **Biological psychologists** exploring the links between brain and mind
- **Developmental psychologists** studying lifespan development
- **Cognitive psychologists** experimenting with how we perceive, think, and solve problems
- **Personality psychologists** investigating our persistent traits
- **Social psychologists** exploring how we view and affect one another
- **Counseling psychologists** helping people cope with personal and career challenges
- **Health psychologists** investigating psychological, biological and behavioral factors that promote or impair health
- **Clinical psychologists** assessing and treating people with mental, emotional, and behavior disorders
- **Industrial organizational** psychologists studying and advising on workplace-related behaviors and system and product design.
- **Community psychologists** working to create social and physical environments that are healthy for all.
<table>
<thead>
<tr>
<th>Perspective</th>
<th>Focus</th>
<th>Sample Questions</th>
<th>Examples of Subfields Using This Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroscience</td>
<td>How the body and brain enable emotions, memories, and sensory experiences</td>
<td>How do pain messages travel from the hand to the brain? How is blood chemistry linked with moods and motives?</td>
<td>Biological; cognitive; clinical</td>
</tr>
<tr>
<td>Evolutionary</td>
<td>How the natural selection of traits passed down from one generation to the next has promoted the survival of genes</td>
<td>How has our evolutionary past influenced our modern-day mating preferences? Why do humans learn some fears so much more easily than others?</td>
<td>Biological; developmental; social</td>
</tr>
<tr>
<td>Behavior genetics</td>
<td>How our genes and our environment influence our individual differences</td>
<td>To what extent are psychological traits such as intelligence, personality, sexual orientation, and optimism products of our genes? Of our environment?</td>
<td>Personality; developmental; legal/forensic</td>
</tr>
<tr>
<td>Psychodynamic</td>
<td>How behavior springs from unconscious drives and conflicts</td>
<td>How can someone’s personality traits and disorders be explained in terms of their childhood relationships?</td>
<td>Clinical; counseling; personality</td>
</tr>
<tr>
<td>Behavioral</td>
<td>How we learn observable responses</td>
<td>How do we learn to fear particular objects or situations? What is the most effective way to alter our behavior, say, to lose weight or stop smoking?</td>
<td>Clinical; counseling; industrial-organizational</td>
</tr>
<tr>
<td>Cognitive</td>
<td>How we encode, process, store, and retrieve information</td>
<td>How do we use information in remembering? Reasoning? Solving problems?</td>
<td>Cognitive neuroscience; clinical; counseling; industrial-organizational</td>
</tr>
<tr>
<td>Social-cultural</td>
<td>How behavior and thinking vary across situations and cultures</td>
<td>How are we alike as members of one human family? How do we differ as products of our environment?</td>
<td>Developmental; social; clinical; counseling</td>
</tr>
</tbody>
</table>

Table 1.1
Retrieve and Remember 2

- The _______ perspective in psychology focuses on how behavior and thought differ from situation to situation and from culture to culture.

- The _____ perspective emphasizes how we learn observable responses.
Basic and Applied Research

- Basic research is intended to build the field’s knowledge base
- Applied research is conducted to tackle practical problems
Four Big Ideas in Psychology

1. Critical Thinking is Smart Thinking
2. Behavior is a biopsychosocial approach
3. The two-track mind (dual processing)
4. Exploring human strengths as well as challenges
From a Twitter feed:

“The problem with quotes on the Internet is that you never know if they are true.”

-Abraham Lincoln
Big Idea #1 - Critical Thinking

The scientific attitude prepares us to think smarter--to examine assumptions, consider the source, uncover hidden values, weigh evidence, and test conclusions.
Critical thinking in psychology has led us to some surprising findings:

- Massive losses of brain tissue early in life may have few long-term effects.
- Within days, newborns can recognize their mother’s odor.
- After brain damage, some people can learn new skills, yet at the mind’s conscious level be unaware that they have these skills.
- Most of us, male and female, old and young, wealthy and not wealthy, with and without disabilities--report roughly the same levels of personal happiness.
The same critical thinking has debunked some popular beliefs:

- Sleepwalkers are not acting out their dreams.
- Our past experiences are not recorded word for word in our brain. Neither brain stimulation nor hypnosis will let us “hit the replay button” and relive long-buried memories.
- Most of us do not suffer from low self-esteem, and high self-esteem is not all good.
- Opposites do not generally attract.
Big Idea # 2 - The Biopsychosocial approach

We can view human behavior from three levels--the biological, psychological, and social-cultural.

We share a biologically rooted human nature. Yet cultural and psychological influences fine-tune our assumptions, values, and behaviors.
A Smile Is a Smile the World Around

- People in different cultures vary in when and how often they smile, but a naturally happy smile means the same thing anywhere in the world.
Nature–Nurture Issue

- An age-old controversy over the relative influence of genes and experiences in the development of psychological traits and behaviors
- Today’s psychological science views traits and behaviors arising from the interaction of nature and nurture.
- In most cases, nurture works on what nature endows.
A Nature-Made Nature—Nurture Experiment

- Identical twins have the same genes.
  - This makes them ideal participants in studies designed to shed light on hereditary and environmental influences on personality, intelligence, and other traits.
- Fraternal twins have different genes but often share the same environment.
Big Idea #3 - The two-track mind

Psychology today explores our dual-processing capacity. Our perception, thinking, memory and attitudes all operate on two levels: a conscious, aware track, and an unconscious, automatic, unaware track.

It has been surprising to learn how much information processing happens without our awareness.
Big Idea #4 - Exploring Human Strengths

Psychology today focuses not only on understanding and offering relief from troublesome behaviors and emotions, but also on understanding and developing the emotions and traits that help us thrive.
Positive Psychology

The scientific study of human functioning, with the goals of discovering and promoting strengths and virtues that help individuals and communities to thrive.
Positive Psychology

- Suggests that happiness is a by-product of a pleasant, engaged, and meaningful life
- Focuses on building a:
  - Good life that engages one’s skills
  - Meaningful life that points beyond the self
- Uses scientific methods to explore positive emotions, character traits, and institutions
Why Do Psychology?

- The limits of intuition and common sense
Limits of Intuition and Common Sense

● Research shows that thinking, memory, and attitudes operate on conscious and unconscious levels.
  ○ Most of an individual’s mental life happens automatically, but intuition can lead him/her astray.
● Flaws in intuitive thinking:
  ○ Hindsight bias
  ○ Overconfidence
  ○ Perceiving patterns in random events
Hindsight Bias

- The tendency to believe, after learning an outcome, that the outcome could have been predicted
- Known as the I-knew-it-all-along phenomenon
Overconfidence

- People tend to think they know more than they do.
- Manifets in:
  - Field of academics
  - Social behavior

People in a study were asked to unscramble the following word puzzles or anagrams:
- WREAT → WATER
- ETRYN → ENTRY
- GRABE → BARGE

- About how many seconds do you think it would take you to unscramble each anagram?
Overconfidence

• Knowing the answer makes us overconfident.

• You may assume that the solution would take only 10 seconds or so. In reality, the average problem solver spends 3 minutes when given a puzzle without the solution.

Fun anagram solutions from Wordsmith (www.wordsmith.org):
Snooze alarms = Alas! No more z’s
Dormitory = dirty room
Slot machines = cash lost in ’em
People perceive patterns to make sense of their world.
Even in random, unrelated data people find order.
Random sequences often do not look random.
People trust their intuition more than they should.
Intuitive thinking is flawed.
Retrieve and Remember 3

- Why, after friends start dating, do we often feel that we knew they were meant to be together?
How Do Psychologists Ask and Answer Questions?

- The scientific method
- Description
- Correlation
- Experimentation
- How would you know which research design to use?
- Predicting everyday behavior
Figure 1.1 - The Scientific Method

Research and observations
Example: Give study material to people before (a) an ample night's sleep, or (b) a shortened night's sleep, then test memory.

Theories
Example: Sleep boosts memory.

Hypotheses
Example: When sleep deprived, people remember less from the day before.

confirm, reject, or revise

lead to

lead to

Figure 1.1
Myers/DeWall, Psychology in Everyday Life, 4e, © 2017 Worth Publishers
The Scientific Method, Part 1

- Helps avoid pitfalls of intuitive thinking by:
  - Observing events
  - Forming theories
  - Refining the theories in light of new observations

- **Theory:** Explanation using principles that organize observations and predict behaviors or events
  - Can bias one’s observations
The Scientific Method, Part 2

- **Hypothesis**: Testable prediction, often implied by a theory
  - Specifies those results that support the theory
  - Highlights those results that would cast doubt on the theory
- **Operational definition**: Carefully worded statement of the exact procedures used in a research study
The Scientific Method, Part 3

- **Replication**: Repeating the essence of a research study to see whether the basic finding can be reproduced
  - Performed with different participants in different situations
  - Enables confirmation of findings
  - Enables one to correct and refine their knowledge
Features of a Good Theory

- Effectively organizes a range of self-reports and observations
- Leads to clear predictions that can be used to check the theory or to create practical applications of it
- Stimulates replications and more research that supports the theory
- Leads to a revised theory that better organizes and predicts what is observed
Ways to Test Hypotheses and Refine Theories

- Descriptive methods
  - Describe behaviors by using case studies, naturalistic observations, or surveys
- Correlational methods
  - Associate different factors
- Experimental methods
  - Manipulate, or vary, factors to discover their effects
Retrieve and Remember 4

- What does a good theory do?
- Why is replication important?
Descriptive Techniques

- **Case studies**: Examine one individual or group in depth
  - Provide fruitful ideas
  - Do not uncover general truths
- **Naturalistic observations**: Technique of observing and recording behavior in a natural environment
  - Describe but do not explain behavior
  - Can be revealing
Freud and Little Hans

- Sigmund Freud’s case study of 5-year-old Hans’ extreme fear of horses led Freud to his theory of childhood sexuality.
  - Freud believed Hans’ intense fear had its roots in the boy’s unconscious desire for his mother and his fear of being castrated by his rival father.
Descriptive Technique - Surveys

- Techniques for obtaining self-reported attitudes or behaviors of a group
- Examine many cases in less depth
  - Wording effect - Subtle changes in the wording of a question can have major effects on the survey crowd.
  - Random sample: Sample that fairly represents a population because each member has an equal chance of inclusion
Figure 1.2 - Twitter Message Moods by Time and by Day
Retrieve and Remember 5

- We cannot assume that case studies always reveal general principles that apply to all of us. Why not?

- What are the advantages and disadvantages of naturalistic observation, such as the EARs study?

- What is an unrepresentative sample, and how do researchers avoid it?
Correlation

- Measure of the extent to which two events vary together
  - Measure of how well either one predicts the other
- Correlation coefficient
  - Mathematical expression of the relationship
  - Ranges from −1.00 to +1.00
    - 0 indicates no relationship
Correlation - Measures

- **Positive correlation (above 0 to +1.00)**
  - Indicates a direct relationship
  - Two things increase together or decrease together

- **Negative correlation (below 0 to −1.00)**
  - Indicates an inverse relationship
  - As one thing increases, the other decreases

- **Weak correlation**
  - Coefficient near zero
  - Indicates little or no relationship
Retrieve and Remember 6

Indicate whether each of the following statements describes a positive correlation or a negative correlation:

1. The more husbands viewed Internet pornography, the worse their marital relationships (Muusses et al., 2015).

2. The less sexual content teens saw on TV, the less likely they were to have sex (Collins et al., 2004).

3. The longer children were breast-fed, the greater their later academic achievement (Horwood & Fergusson, 1998).

4. The more income rose among a sample of poor families, the fewer symptoms of mental illness their children experienced (Costello et al., 2003).
Figure 1.3 - Three Possible Cause-Effect Relationships

1. Low self-esteem could cause Depression

or

2. Depression could cause Low self-esteem

or

3. Distressing events or biological predisposition could cause Low self-esteem and Depression

Figure 1.3
Correlation and Causation

- Correlation indicates the possibility of a cause-effect relationship, but it does not prove causation.
  - Knowing that two events are associated does not reveal which event causes the other.

"When scientists communicate with each other, they . . . are cautious about oversimplifying results and speaking beyond the data. But when science is . . . fed to the public, the nuance and uncertainty is often lost."

Clay Routledge, “What Scientists Know and Need to Share with the Public,” 2015
Length of marriage correlates with hair loss in men. Does this mean that marriage causes men to lose their hair (or that balding men make better husbands)?
**Experiment**

- A method in which researchers vary one or more factors to observe the effect on some behavior or mental process
  - Researchers aim to control other factors by random assignment of participants
- Helps researchers focus on the possible effects of one or more factors by:
  - Manipulating factors of interest
  - Holding other factors constant
Random Assignment

- Assigning participants to experimental and control groups by chance, thus minimizing any preexisting differences between the groups
  - **Experimental group**: Group exposed to the treatment, that is, to one version of the independent variable
  - **Control group**: Group not exposed to the treatment
    - Serves as a comparison with the experimental group for judging the effect of the treatment
Double-Blind Procedure

- A procedure in which both the participants and the research staff are ignorant about who has received the treatment or a placebo
  - **Placebo**: Inactive substance or condition that is given to those in a control group in place of the treatment given to the experimental group
  - **Placebo effect**: Results caused by expectations alone
● What measures do researchers use to prevent the placebo effect from confusing their results?

“If I don’t think it’s going to work, will it still work?”

Variables in an Experiment

**Independent variable**
- Factor that is manipulated
- Variable whose effect is being studied

**Confounding variable**
- Factor other than the factor being studied that might influence a study’s results

**Dependent variable**
- Factor that is measured
- Variable that may change when the independent variable is manipulated
**Figure 1.4 - Experimentation**

Random assignment
( controlling for other confounding variables such as parental intelligence and environment)

<table>
<thead>
<tr>
<th>Group</th>
<th>Independent variable</th>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Formula</td>
<td>Intelligence score, age 8</td>
</tr>
<tr>
<td></td>
<td>Breast milk</td>
<td>Intelligence score, age 8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 1.4
<table>
<thead>
<tr>
<th>Research Method</th>
<th>Basic Purpose</th>
<th>How Conducted</th>
<th>What Is Manipulated</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Descriptive</em></td>
<td>To observe and record behavior</td>
<td>Do case studies, naturalistic observations, or surveys</td>
<td>Nothing</td>
<td>No control of variables; single cases may be misleading.</td>
</tr>
<tr>
<td><em>Correlational</em></td>
<td>To detect naturally occurring relationships; to assess how well one variable predicts another</td>
<td>Collect data on two or more variables; no manipulation</td>
<td>Nothing</td>
<td>Does not specify cause and effect.</td>
</tr>
<tr>
<td><em>Experimental</em></td>
<td>To explore cause and effect</td>
<td>Manipulate one or more factors; use random assignment</td>
<td>The independent variable(s)</td>
<td>Sometimes not possible for practical or ethical reasons.</td>
</tr>
</tbody>
</table>
In the rental housing experiment discussed in this section, what was the independent variable? The dependent variable?

Why, when testing a new drug to control blood pressure, would we learn more about its effectiveness from giving it to half the participants in a group of 1000 than to all 1000 participants?
Match the term below with the correct description on the right.

1. Double-blind procedure
2. Random sampling
3. Random Assignment

a. Helps researchers generalize from a small set of survey responses to a larger population
b. Helps minimize preexisting differences between experimental and control groups
c. Controls for the placebo effect; neither researchers nor participants know who receives the real treatment
Predicting Everyday Behavior

- The purpose of an experiment is to test theoretical principles.
- Resulting principles, not specific findings, help explain everyday behaviors.
- Psychological sciences:
  - Focus less on specific behaviors
  - Focus more on revealing general principles that help explain many behaviors
<table>
<thead>
<tr>
<th>Psychology’s Research Ethics</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Studying and protecting animals</td>
</tr>
<tr>
<td>● Studying and protecting humans</td>
</tr>
<tr>
<td>● Values in psychology</td>
</tr>
</tbody>
</table>
Animal Research

- Conducted by psychologists to:
  - Understand how different species learn, think, and behave
  - Learn about people
- Helped develop treatments for human diseases
  - Examples: insulin for diabetes, vaccines for polio and rabies, and transplants to replace defective organs
Studying and Protecting Animals

- Animal protection movements protest the use of animals in psychological, biological, and medical research.
- Use of animals for research is debated among psychologists.
  - Is it right to place the well-being of humans above that of other animals?
  - What safeguards should protect the well-being of animals in research?
Protecting Animals

- British Psychological Society (BPS)
  - Requires animals to be housed under reasonably natural living conditions
  - Social animals provided with companions
- American Psychological Association (APA)
  - Requires researchers to:
    - Ensure comfort, health, and humane treatment of animals
    - Minimize infection, illness, and pain
Benefits of Animal Research for Animals

- Invention of handling and stroking methods to reduce stress and ease dogs’ move to adoptive homes
- Improvement of care and management in animals’ natural habitats
- Increased empathy and protection for other species
Animal Research Benefiting Animals

- Psychologists have helped enrich zoo animal environment.
- Thanks partly to research on the benefits of novelty, control, and stimulation, these gorillas have enjoyed an improved quality of life in New York’s Bronx Zoo.
APA and BPS ethics codes urge researchers to:

- Obtain the participants’ **informed consent** to participate
- Protect participants from out-of-the-ordinary harm and discomfort
- Keep information about individual participants confidential
- Fully **debrief** participants
Values in Psychology

- Values impact:
  - The material that is being studied
  - How the material is being studied
  - How results are interpreted
- Applied psychology contains hidden values.
- Psychology has the power to deceive, though its purpose is to enlighten.
In making its historic 1954 school desegregation decision, the U.S. Supreme Court cited the expert testimony and research of psychologists Kenneth Clark and Mamie Phipps Clark (1947).
How are animal subjects and human research participants protected?
Use Psychology to Become a Stronger Person—and a Better Student
Tips to Live a Happy, Thriving Life

- Manage time to get a full night’s sleep
- Make space for exercise
- Set long-term goals, with daily aims
- Maintain a growth mind-set
- Prioritize relationships
Psychological Principles

- **Testing effect**: Enhanced memory after retrieving, rather than simply rereading, information
  - Known as retrieval practice effect or test-enhanced learning
- **SQ3R**: Study method that incorporates five steps
  - Survey, question, read, retrieve, and review
Strategies That Help to Learn and Remember

- Use self-testing and rehearsal
- Implement the SQ3R study method
- Distribute study time
- Learn to think critically
- Actively process class information
- Overlearn
The _____ describes the improved memory that results from repeated retrieval (as in self-testing), rather than from simple rereading of new information.

- What does SQ3R mean?