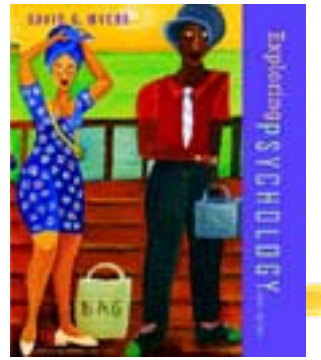


Chapter 1

Thinking Critically with Psychological Science

Psychology's Roots

Prescientific Psychology

- Is the mind connected to the body or distinct?
- Are ideas inborn or is the mind a blank slate filled by experience?

Psychology's Roots

- Prescientific Psychology
  - Empiricism
    - knowledge comes from experience via the senses
    - science flourishes through observation and experiment

Psychology's Roots

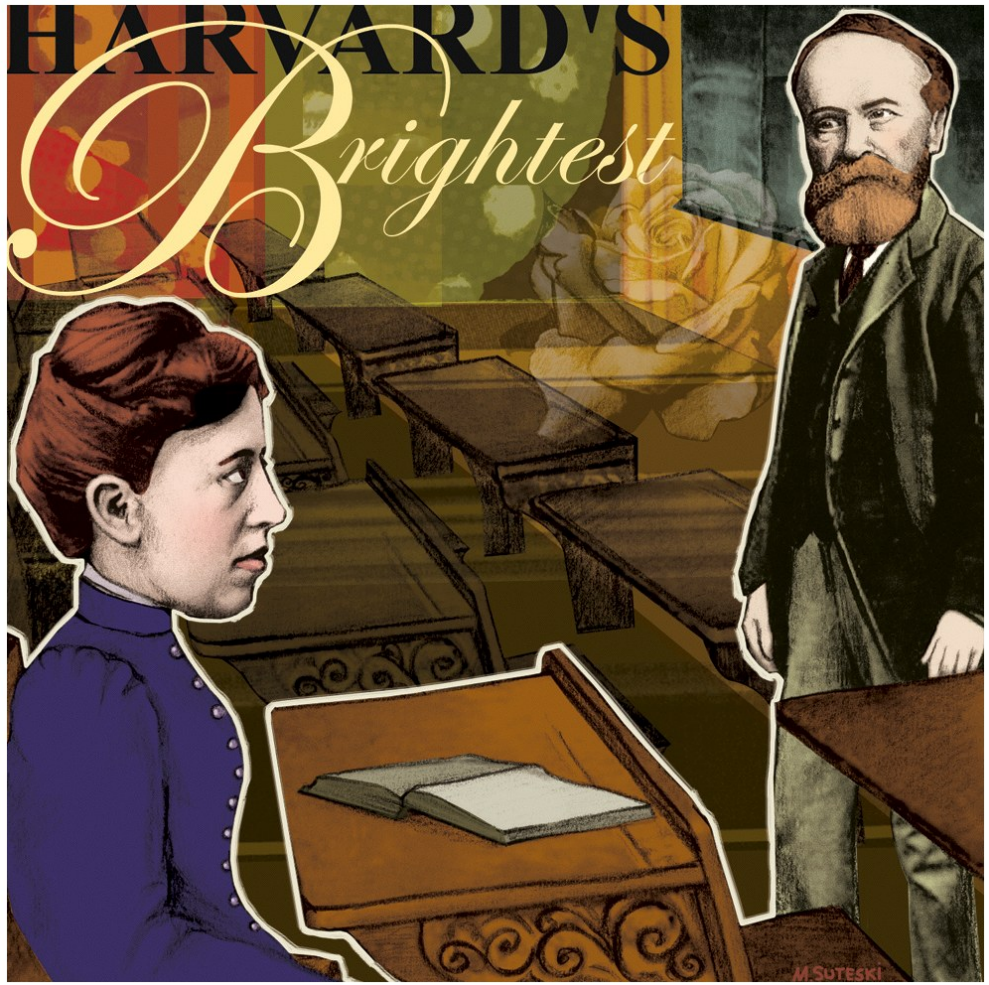
- Wilhelm Wundt opened the first psychology laboratory at the University of Leipzig (c. 1879)

Psychology's Roots

- Structuralism used introspection (looking in) to explore the elemental structure of the human mind

Psychology's Roots

- Functionalism focused on how behavioral processes function - how they enable organism to adapt, survive, and flourish



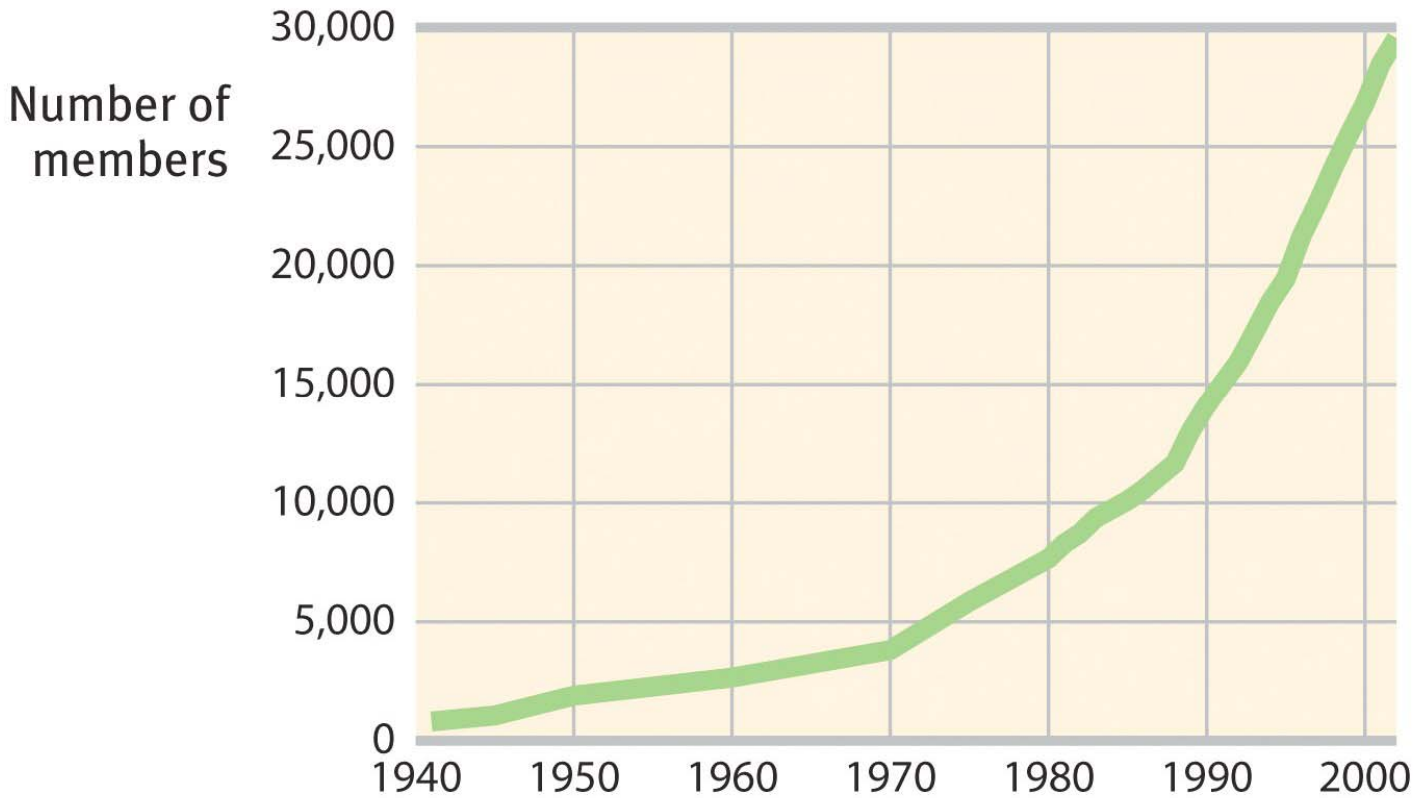
Psychology's Roots

- Definition of Psychology
  - The science of behavior (what we do) and mental processes (sensations, perceptions, dreams, thoughts, beliefs, and feelings)

Contemporary Psychology

- Nature-Nurture Controversy
  - the longstanding controversy over the relative contributions that genes and experience make to development of psychological traits and behaviors

Psychology's Roots



British Psychological Society membership

Contemporary Psychology

PSYCHOLOGY'S CURRENT PERSPECTIVES

Perspective	Focus	Sample Questions
Neuroscience	How the body and brain enable emotions, memories, and sensory experiences	How are messages transmitted within the body? How is blood chemistry linked with moods and motives?
Evolutionary	How the natural selection of traits promotes the perpetuation of one's genes	How does evolution influence behavior tendencies?
Behavior genetics	How much our genes and our environment influence our individual differences	To what extent are psychological traits such as intelligence, personality, sexual orientation, and vulnerability to depression attributable to our genes? To our environment?
Psychodynamic	How behavior springs from unconscious drives and conflicts	How can someone's personality traits and disorders be explained in terms of sexual and aggressive drives or as the disguised effects of unfulfilled wishes and childhood traumas?
Behavioral	How we learn observable responses	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?
Cognitive	How we encode, process, store, and retrieve information	How do we use information in remembering? Reasoning? Solving problems?
Social-cultural	How behavior and thinking vary across situations and cultures	How are we—as Africans, Asians, Australians, or North Americans—alike as members of one human family? As products of different environmental contexts, how do we differ?

Contemporary Psychology

- Psychology's Subfields
  - Basic Research
    - pure science that aims to increase the knowledge base
  - Applied Research
    - scientific study that aims to solve practical problems

Contemporary Psychology

- Clinical Psychology
  - branch of psychology that studies, assesses, and treats people with psychological disorders
- Psychiatry
  - a branch of medicine dealing with psychological disorders
  - practiced by physicians who sometimes use medical (for example, drug) treatments as well as psychotherapy

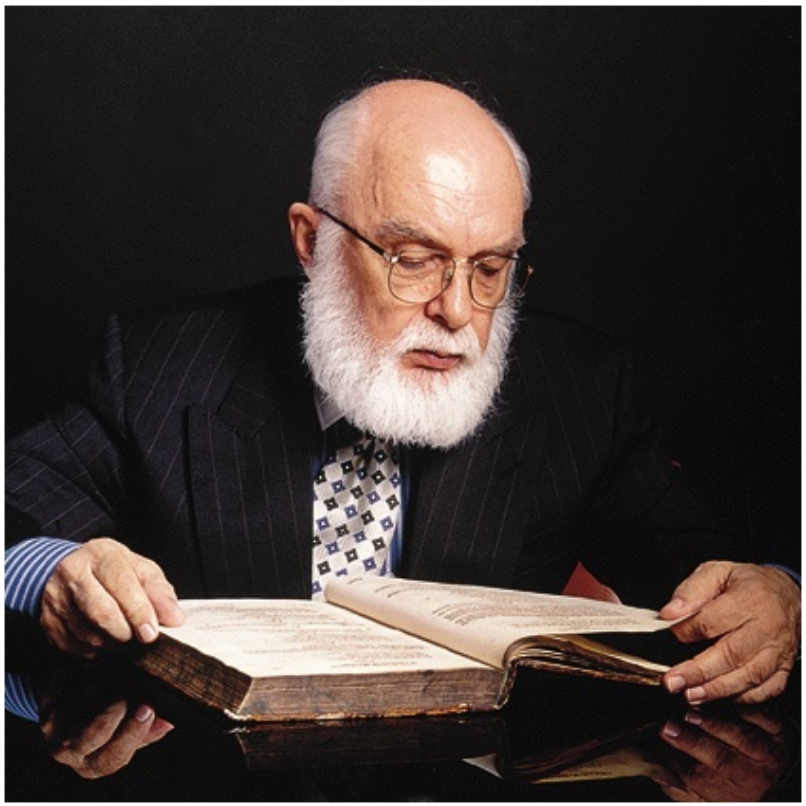
Why Study Psychology?

- Psychologists, like all scientists, use the scientific method to construct theories that organize observations and imply testable hypotheses

Why Study Psychology?

- Hindsight Bias
  - we tend to believe, after learning an outcome, that we would have foreseen it
  - the “I-knew-it-all-along” phenomenon
- Overconfidence
  - we tend to think we know more than we do

The Scientific Attitude



The Amazing Randi--Skeptic

- Critical Thinking
  - thinking that does not blindly accept arguments and conclusions
    - examines assumptions
    - discerns hidden values
    - evaluates evidence
    - assesses conclusions

The Scientific Method

- Theory
  - an explanation using an integrated set of principles that organizes and predicts observations
- Hypothesis
  - a testable prediction
  - often implied by a theory

The Scientific Method

(1) Theories
Example: Low self-esteem feeds depression.

generate or refine

lead to

(2) Hypotheses
Example: People with low self-esteem are more apt to feel depression.

lead to

(3) Research and Observations
Example: Administer tests of self-esteem and depression. See if a low score on one predicts a high score on the other.

The Scientific Method

- Operational Definition
  - a statement of procedures (operations) used to define research variables
  - example-
    - intelligence may be operationally defined as what an intelligence test measures

The Scientific Method

- Replication
  - repeating the essence of a research study to see whether the basic finding extends to other participants and circumstances
  - usually with different participants in different situations

Description

- Psychologists describe behavior using case studies, surveys, and naturalistic observation

Description

Case Study

- observation technique in which one person is studied in depth in the hope of revealing universal principals

Is language uniquely human?

Description

- Survey
  - technique for ascertaining the self-reported attitudes or behaviors of people
  - usually by questioning a representative, random sample of people

Description

Description

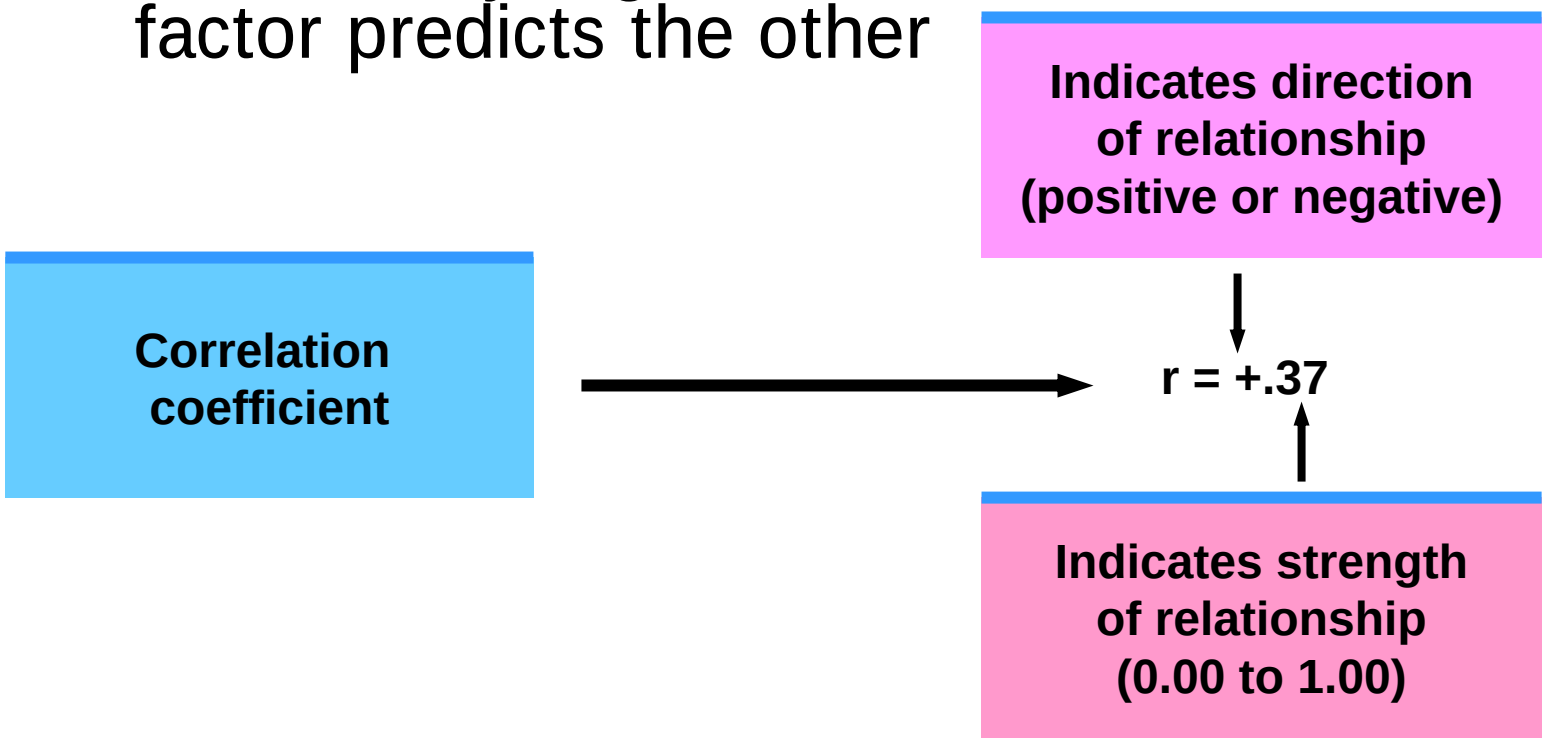
- Population
  - all the cases in a group, from which samples may be drawn for a study
- Random Sample
  - a sample that fairly represents a population because each member has an equal chance of inclusion

Description

- Naturalistic Observation
  - observing and recording behavior in naturally occurring situations without trying to manipulate and control the situation

Correlation

- **Correlation Coefficient**
  - a statistical measure of the extent to which two factors vary together, and thus how well either factor predicts the other



Correlation

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**

Illusory Correlation

- Illusory Correlation
  - the perception of a relationship where none exists

	Conceive	Do not conceive
Adopt	confirming evidence	disconfirming evidence
Do not adopt	disconfirming evidence	confirming evidence

Two Random Sequences

- Your chances of being dealt either of these hands is precisely the same: 1 in 2,598,960.

Experimentation

- Experiment
  - an investigator manipulates one or more factors (independent variables) to observe their effect on some behavior or mental process (the dependent variable)
  - by random assignment of participants the experiment controls other relevant factors

Experimentation

- Double-Blind Procedure
  - both the research participants and the research staff are ignorant (blind) about whether the research participants have received the treatment or a placebo
  - commonly used in drug-evaluation studies
- Placebo
  - an inert substance or condition that may be administered instead of a presumed active agent, to see if it triggers the effects believed to characterize the active agent

Experimentation

- Experimental Condition
  - the condition of an experiment that exposes participants to the treatment, that is, to one version of the independent variable
- Control Condition
  - the condition of an experiment that contrasts with the experimental treatment
  - serves as a comparison for evaluating the effect of the treatment

Experimentation

- Random Assignment
  - assigning participants to experimental and control conditions by chance
  - minimizes pre-existing differences between those assigned to the different groups

Experimentation

- Independent Variable
  - the experimental factor that is manipulated
  - the variable whose effect is being studied
- Dependent Variable
  - the experimental factor that may change in response to manipulations of the independent variable
  - in psychology it is usually a behavior or mental process

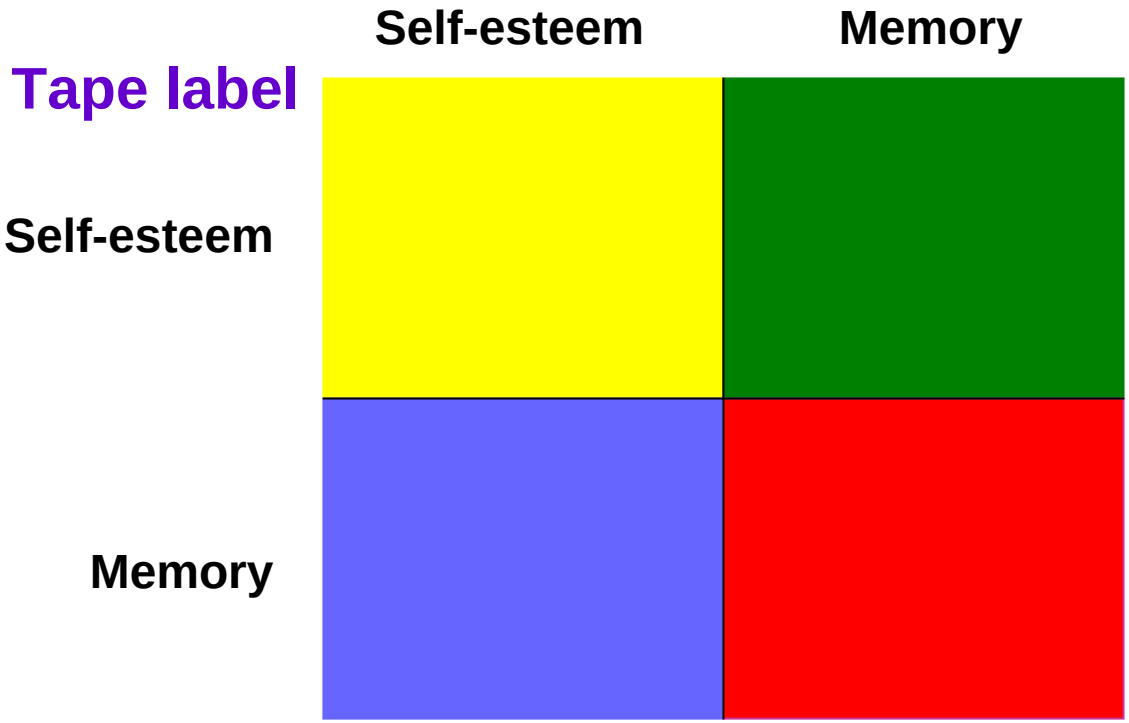
Experimentation

COMPARING RESEARCH METHODS

Research Method	Basic Purpose	How Conducted	What Is Manipulated	Possible Problems
Descriptive	To observe and record behavior	Do case studies, surveys, or naturalistic observations	Nothing	Atypical sample; biased observations
Correlational	To detect naturally occurring relationships; to assess how well one variable predicts another	Compute statistical association, sometimes among survey responses	Nothing	Does not specify cause and effect
Experimental	To explore cause and effect	Manipulate one or more factors; use random assignment	The independent variable(s)	Sometimes not feasible; results may not generalize to other contexts

Research Strategies

Subliminal tape content



- Design of the subliminal tapes experiment

Frequently Asked Questions About Psychology

Can laboratory experiments illuminate everyday life?

Frequently Asked Questions About Psychology

Does behavior depend on one's culture and gender?

- Culture - the shared ideas and behaviors that one generation passes on to the next

Frequently Asked Questions About Psychology

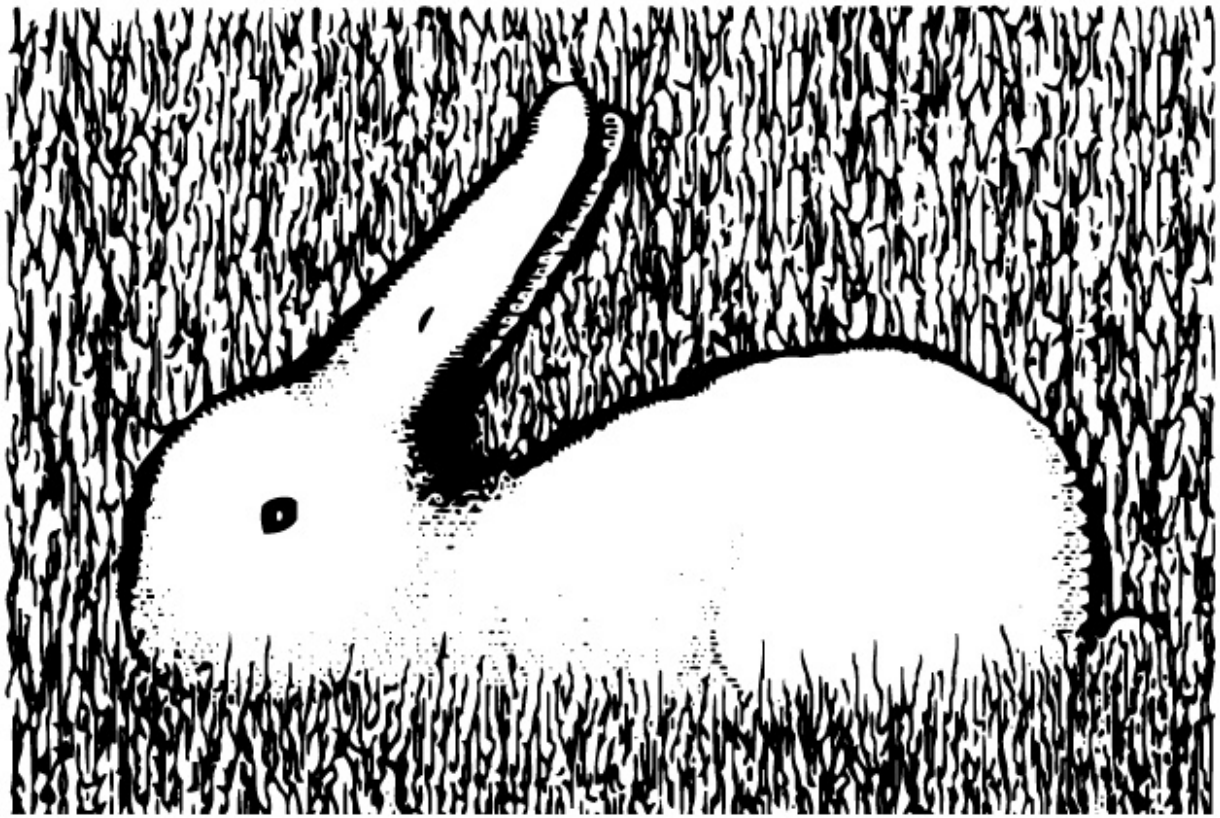
Why do psychologists study animals?

Is it ethical to experiment on animals?

Is it ethical to experiment on people?

Frequently Asked Questions About Psychology

Is psychology free of value judgments?



Frequently Asked Questions About Psychology

Is psychology potentially dangerous?

Tips for Studying Psychology

- Distribute your time
- Learn to think critically
- In class, listen actively
- Overlearn
- Be a smart test-taker