Lesson 1
Background to the Study of Psychology

Introduction: Connecting Your Learning

The lessons in this course are designed so that you must view the online lectures, read the required selections from the course textbook, and complete the online lesson. You will find the link to the video lecture in the “Lectures and Readings” table within each lesson. Some students find it best to view the lecture first and then read the online lesson and textbook selections, while others are more successful by completing the textbook readings first.

Also, you will notice that the lecturer in the video refers to media such as other video clips and presentations that you will not be able to see. The online lessons include similar, supplementary media that provide equivalent learning experiences.

Psychology is the scientific study of human behavior and the human mind. More broadly, it includes the mental and behavioral states of animals.

Lesson 1 introduces you to the history and science of psychology, as well as research strategies. The study of psychology requires critical thinking. To enhance your critical thinking skills, read the questions in the margins throughout the textbook.

Lectures and Readings

<table>
<thead>
<tr>
<th>Media Lecture</th>
<th>Yale Open Source Video: Introduction</th>
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| Textbook Readings   | Chapter 1 – "Foundations for the Study of Psychology"
|                     | Chapter 2 – "Methods of Psychology" |

Focusing Your Learning

Course Competencies covered in this lesson:

- Describe the historical roots of psychology.
- Describe the fundamental theoretical systems in historical and contemporary psychology.
- Describe the research methods used by psychologists.

Lesson Objectives

By the end of this lesson, you should be able to:

1. Define psychology.
2. Discuss the historical movements from physiology and philosophy to the science of psychology.
3. Describe psychology as a science.
4. Identify and explain the various psychological professions.
5. Explain the nature of a scientific experiment and the basic uses of statistics in scientific research.
6. Explain the importance of ethics in psychological research.

Approaching the Objectives

Chapter 1 in your textbook introduces you to the skills of critical thinking, the history of psychology, and the development of theories, perspectives, and specializations. In the nineteenth century, psychology became an official discipline with the introduction of formal scientific research. Psychology's methods of inquiry moved from observations of anecdotes to laboratory experiments, and from there, to multiple research methods.

Keep these questions in mind as you read Chapter 1.

- Who began the quest to understand the human mind and human behavior?
- How has psychology evolved?
- Why is critical thinking relevant to psychological research?
- Are all psychologists the same?
- If not, what distinguishes them from each other?
- How can you determine the validity and reliability of psychological research?

Chapter 2 introduces you to the methods of scientific research in psychology. Scientific research distinguishes public opinion or unsubstantiated information from reliable psychological data, discovers new phenomena in both human and animal experiences, and corrects misinformation that has caused or may cause harm to humans and animals.

Keep these questions in mind as you read Chapter 2.

- Why do psychologists continue to research findings that have already been established?
- Is one research method just as good as the next?
- Do biases exist in psychological research?
- What role do ethics play in the study of human beings and animals?
- What do statistics tell about scientific research?

What is Real Psychology?

In pop culture, many ideas regarding human behavior and mental states have entered into people's consciousness, social institutions, and the media as "real psychology." You often hear of recent studies revealing phenomenal, impressive data that seem to solve a current dilemma. Real psychology requires empirical research and evidence.

Consider this!

Can you think of a recent article, commercial, or product promotion that claims to produce a specific result, such as happiness or sexuality? What evidence supports or refutes that claim?
Is Critical Thinking Necessary in Psychology?

As discussed above, not all psychological notions are based on empirical research; some are created using "commonsense" theories. The idea may make sense without critical examination; however, under the scrutiny of a critical thinker, the idea may fall into the category of "public opinion."

The Evolution of Psychology

Long before the development of psychology as a science, ancient philosophers attempted to understand human behavior and the mind. Without the benefit of scientific studies, philosophers, physicians, and naturalists developed theories from observations. Rene' Descartes, Thomas Hobbes, and Charles Darwin provided three foundational ideas for psychology that predate psychology as a science:

Rene' Descartes (1596 – 1650) *Dualism*. Behavior and mental experiences have physical causes, which can be studied scientifically.

Thomas Hobbes (1588 – 1679) *Materialism*. The way a person behaves, thinks, and feels is motivated, over time, by the person's experiences in his or her environment.

Charles Darwin (1809 – 1882) *Natural Selection*. The body's machinery, which produces behavior and mental experiences, is a product of evolution by natural selection.

In the late nineteenth century, Wilhelm Wundt (1832 – 1920), a German physician and philosopher, established the first psychological laboratory. Modern psychology developed from persistent inquiries of human behaviors through experimental procedures.

Consider this!

Based on your understanding of psychology, why do you think the theories of Descartes, Hobbes, and Darwin had an impact on the development of psychology? Do you align with one theory more than another? If so, how and why?

Psychological Explanations of Behavior

The evolution of psychology has created many fields of specialization. From each perspective, the goal remains the same: to explain mental experiences and behaviors.

**Psychological Explanations of Behavior**

- Neural or Biological
- Genetic
- Evolutionary
Psychology as an Academic Discipline and Profession

There are many specialties in psychology. As indicated in Figures 1.3 and 1.4 in your textbook, the arms of psychology connect to other academic fields and professions. You will examine these specialties in more depth throughout the course.

Thoughts about Using the Textbook and its Special Features:

Author Peter Gray provides a guideline on pages 20-25 to assist you with reading the textbook. The special features outlined are there to help you think critically about psychology and the concepts.

Do not skip this section. If you do, you may miss the tips provided to guide your study.

What Makes Psychological Research Scientific?

Chapter 2 examines how psychological study can be scientific. Everyone has a variety of ideas about the human mind, human behavior, and what makes people tick. But how scientifically grounded are those beliefs and ideas? How scientific is the big business of popular psychology? How can you more thoughtfully and carefully evaluate the beliefs and ideas you have about yourself and other people? How can you achieve a more valid understanding of the human mind and human behavior? These are important questions to think about. One opinion is not necessarily as good as the next. Science may be an open forum for debate and discussion, but that does not imply that anything goes. Practicing science involves a willingness to critically evaluate your ideas relative to experimental, empirical, and logical/rational standards.

Key scientific concepts to understand in this chapter include theory, hypothesis, evidence, prediction, experiment, correlation, test, control, and statistics. Science does not provide a foolproof method for reaching the truth, but science attempts as thoughtfully and carefully as possible to develop and expand human knowledge. Understanding the above scientific concepts will help you to appreciate the value of thinking scientifically. A scientific approach does not imply that everyone practicing a science will agree--as noted above, there are different theoretical perspectives in psychology, and all of these perspectives attempt to be scientific. An important dimension to science is that it provides an open forum to present different hypotheses and theories and experimentally and logically evaluate, compare, and debate them.

Every scientific research project has a beginning. Do psychological scientists wake from a dream with an idea? Possibly! They begin with a hunch or a theory, "an organized system of assumptions and principles that purports to explain certain phenomena and how they are related." Then what?

Once a scientist develops a theory, does it automatically become knowledge? No. The theory or hunch must be tested. Does the scientist move straight from a theory to a laboratory for testing? No. The scientist will derive a hypothesis from the theory. A hypothesis is "a statement that attempts to describe or explain a given behavior." The hypothesis is tested using scientific methods. Evidence must be provided to support or refute the hypothesis.
How Scientists Find Evidence

Three basic types of research designs are primarily used in psychological research: experiments, correlational studies, and descriptive studies. Each research design has unique advantages and disadvantages.

Finding evidence to support your hypothesis requires selecting the best research method or methods. The three tables below show the important details of each research design.

**Experiment Design**

Experiments are procedures in which the researcher manipulates one or more independent variables to discover changes in one or more dependent variables while keeping all other variables constant.

**Independent variable** – variable the researcher manipulates and hypothesizes to affect the dependent variable.

**Dependent variable** – variable the researcher predicts or hypothesizes will be affected by manipulations of the independent variable.

**Subjects** – people or non-humans being studied in the research.

**Within-Subject Experiment** – each subject is tested in each of the different conditions of the independent variable.

**Between-Groups Experiment** – a separate group of subjects is tested for each different condition of the independent variable.

**Correlational Studies**

These studies look for a consistent relationship between two or more variables. They do not explain causes.

**Correlation** – a statistical measure of how strongly two variables are related to one another. Demonstrates how values of one variable are associated with values of another variable.

**Variable** – experiences, behavior, and "things" that are quantifiable, measureable, and can be recorded and tallied.

**Correlation coefficient** – a numerical measure of the strength and direction of the relationship between variables.
Positive correlation – an increase in one variable coincides with the tendency for an increase in another variable.

Negative correlation – an increase in one variable coincides with the tendency for a decrease in another variable.

Zero correlation – no relationship exists between the two variables.

**Descriptive Studies**

According to your textbook, descriptive studies describe the behavior of an individual or a group, but they do not provide cause of the relationship between variables.

**Setting**

**Laboratory study** – any research study in which subjects (people or animals) are brought to a specifically designated area that has been set up to facilitate the researcher's collection of data or control over environmental conditions.

**Field study** – any research study conducted in a setting other than a laboratory.

**Data-Collection Methods**

**Self-report methods** – procedures in which subjects are asked to rate or describe their own behavior or mental state.

**Observational studies** – procedures by which researchers observe and record behavior without relying on self-reporting.

**Naturalistic observation** – when a researcher observes how people or animals behave in their natural environments without interference.

**Psychological tests** – used to measure and evaluate personality traits, emotional states, aptitudes, interests, abilities, and values. Psychological tests can be objective or projective.

**Check Your Knowledge**

An experimenter wants to study the effects of music on studying. He has some students study while listening to music and others study in silence, and then he compares their test scores. What is the independent variable in this experiment?

1. The students
2. The presence of music while studying
3. The kind of music

4. The test scores

Statistics: What Do Research Results Tell You?

Research without interpreting results will tell you nothing. Experimenters use statistical data to summarize their results and inform others of their meaning and reliability. Researchers cannot be too hasty in their interpretation of data, yet they must explain their results.

Sometimes several explanations may be possible. Be sure to ask questions about how the statistical data was derived, the size of the group, and how many times the research was conducted. Statistical data can be very useful in predicting outcomes.

Data can also be misrepresented to align with a particular point of view or prejudice, and errors can occur due to random influences that increase the variability of a set of data. Avoid the following:

**Biased Samples** – members of a particular group are initially different from those of another group or from the larger population.

**Measurement Bias:**

- **Reliability** – measurements derived at one time and place should be consistent with the measurements obtained at another time and place.

- **Validity** – ability of a procedure to measure what it was designed to measure.

**Biases from Observer and Subject Expectancies**

**Observer-expectancy effects** – when a researcher desires or expects a subject to respond in a particular way and influences the subject's behavior.

**Subject-Expectancy effects** – when treatments in an experiment induce different expectations in subjects, then those expectations may account for observed differences in the subjects' behavior.

Avoid observer and subject expectancies

**Placebo** – a fake treatment. **Example:** Giving someone a sugar pill and telling him/her that it is medicine to observe any change in his/her behavior or symptoms

**Single-blind study** – experimenter knows who is in which group; subjects do not.

**Double-blind study** – neither the experimenter nor subjects know who is in which group.
Consider this!
What is the difference between error and bias? Which presents a more serious problem in psychological research?

Descriptive statistics allow researchers to summarize sets of data by using all numerical methods for summarizing.

Inferential statistics allow researchers to draw inferences (conclusions based on evidence) about how statistically meaningful a study's results are. Researchers are able to predict the probability of a particular behavior occurring or not occurring, but not with certainty that it will or will not happen in various situations.

The Ethics of Studying Human Beings and Animals

The American Psychological Association (APA) requires researchers to obtain informed consent from individuals before conducting research to protect research subjects from harm and to allow them to make the best decision possible about their participation based on the information provided. Research may sometimes be compromised if the subjects are informed of its purpose in advance. However, individuals must be debriefed and notified of any deceptive measures used and why.

Animals play a crucial role in psychological studies. Psychologists use animals if human beings cannot be used due to ethical concerns. Studies utilizing animals have helped researchers find ways to improve the human condition. Over time, concerns about animal rights have precluded the use of animals and prompted development of alternative methods using technology.

In 1962, Stanley Milgram, a social psychologist and professor at Yale, conducted the "Obedience" experiment. This experiment will be studied in more depth later in the course. As a result of his research, even though no humans were actually physically harmed, human-subject committees were formed to provide oversight of scientific experiments.

Consider this!
View Milgram's "Obedience" Experiment (1962).
Discuss the importance of ethics in psychological research.

Summarizing Your Learning
• Answer the questions in the lecture and within the margins of the textbook.

• Consider how the assigned chapters apply to your own life and how you could benefit from understanding and applying any advice or suggestions given in the reading.

• To review the timeline of important events in psychology, go to the PsychSim 5e Web site. Once there, select Psychology's Timeline. You can review at your own pace by selecting the NEXT button to the right of the screen.

• To reinforce your learning of statistics used in the field of psychology, go to the PsychSim 5e Web site. Once there, select Descriptive Statistics. You can review at your own pace by selecting the NEXT button to the right of the screen.