Instructor’s Classroom Kit
Volume I

for

Kosslyn and Rosenberg

Fundamentals of Psychology in Context

Third Edition

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## Contents

Preface ............................................................................................................................................. v  
Sample Syllabus ................................................................................................................................ vi  
Table of Contents: Digital Media Archive .................................................................................... viii  
Table of Contents: Insight Videos ................................................................................................ ix  
Table of Contents: Transparencies for Introductory Psychology ........................................ xii  

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Instructor's Manual</th>
<th>Test Bank</th>
<th>PowerPoint</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Psychology: Yesterday and Today</td>
<td></td>
<td>1</td>
<td>64</td>
</tr>
<tr>
<td>2</td>
<td>The Biology of Mind and Behavior: The Brain in Action</td>
<td></td>
<td>105</td>
<td>138</td>
</tr>
<tr>
<td>3</td>
<td>Sensation and Perception: How the World Enters the Mind</td>
<td></td>
<td>176</td>
<td>218</td>
</tr>
<tr>
<td>4</td>
<td>Learning: How Experience Changes Us</td>
<td></td>
<td>256</td>
<td>303</td>
</tr>
<tr>
<td>5</td>
<td>Memory: Living with Yesterday</td>
<td></td>
<td>343</td>
<td>400</td>
</tr>
<tr>
<td>6</td>
<td>Language, Thinking, and Intelligence: What Humans Do Best</td>
<td></td>
<td>445</td>
<td>504</td>
</tr>
<tr>
<td>7</td>
<td>Emotion and Motivation: Feeling and Striving</td>
<td></td>
<td>553</td>
<td>592</td>
</tr>
</tbody>
</table>
Preface

The goal of the Instructor’s Classroom Kit to Accompany Kosslyn & Rosenberg’s Fundamentals of Psychology in Context, Third Edition, is to provide an integrated, comprehensive manual to support both the seasoned professor and the new instructor. Our unparalleled Classroom Kit includes every instructional aid an introductory psychology professor needs to manage the classroom. Organized by chapter, this volume contains an instructor’s manual, test bank, and slides from the Kosslyn/Rosenberg PowerPoint presentation to accompany Chapters 1-7 of Fundamentals of Psychology in Context.

Here is a brief overview of what you will find in this Instructor’s Classroom Kit:

Instructor’s Manual
This comprehensive teaching resource can be used by first-time or experienced instructors. Included are numerous handouts, detailed chapter outlines with web links and key terms, a Chapter-At-A-Glance table linking other supplementary resources to the corresponding chapter content, lecture material, suggested reading and video sources, teaching objectives, and classroom activities and demonstrations.

Test Bank
The Test Bank includes multiple choice, true/false, short answer, and essay, each coded with difficulty rating, page references, and answer justifications. The test bank is also available in TestGen 5.5 computerized version, for use in personalizing tests.

PowerPoint Presentation
An exciting interactive tool for use in the classroom. This dynamic multimedia resource contains key points covered in the textbook, images from the textbook, and questions to provoke effective classroom discussion. The PowerPoint is included on the Instructor’s Classroom Kit CD-ROM available in Volume II of the Classroom Kit and can also be downloaded from our Instructor Resource Center.

In addition to this Instructor’s Classroom Kit Volume I, several other important ancillaries are available to accompany the text.

- **MyPsychLab.** This interactive and instructive multimedia resource offers a text-specific e-book plus tutorials, audio, video, simulations, animations, and controlled assessment to supplement a traditional lecture course or administer a course entirely online. MyPsychLab is fully customizable and meets the individual teaching and learning needs of every instructor and every student. MyPsychLab also features the services of the Psychology Tutor Center and a journals database through Research Navigator. Visit the site at www.mypsychlab.com.

- **Introduction to Psychology Transparency Package.** This Transparency Kit includes approximately 230 full-color acetates to enhance classroom lecture and discussion – including images from all of Allyn and Bacon’s introductory psychology texts.

- **Digital Media Archive for Psychology Version 5.0.** This comprehensive source was created as a tool to ease and enhance your lecture preparation and contains still images, animation, audio clips, video clips, web links, and interactive activities.
Sample Syllabus
Course Number
Introduction to Psychology
Academic Term and Date

Instructor:
Office Phone:
Office and Office Hours:

Required Text:
    Boston: Allyn & Bacon

GOALS FOR THE COURSE
Here is an opportunity for you to put your goals for the course in writing and to share them with your students. When you go over the syllabus on the first day of class, let the students know the reasons you have chosen these particular goals for the course. Linking these goals to assessment may also help students understand your plan.

GRADING
State the method by which grades will be determined. For example, will the students’ work be graded on a strict scale or will the grades be curved? Will the grades be rounded up or down? How many points is every item (e.g., test, paper) worth, and how many total points can be earned?

STUDENT EVALUATION
State the number of class examinations/quizzes there will be. In addition, describe the nature of the evaluation (multiple-choice questions, true-false items, essay questions, or some combination of these). How many items will there be on each evaluation and how many points will each question be worth? Will any evaluations be dropped? Will there be any “pop” quizzes?

PAPER ASSIGNMENT(S)
Will you require students to write an essay, a book report, reaction paper, or journal article review this academic term? If you do, you need to specify all of the requirements for the assignment(s) (point value, length, content requirements, style requirements, etc.). If you wish students to type their assignments, make sure that you specify the format (double-spaced, margins, indents, format for headings and references).

FINAL EXAMINATION
Describe the nature of the final examination in the same way as you have with the student evaluation section (in terms of the number and type of questions along with point values). Will the final examination be cumulative? Are there any special features of this examination of which students should be aware?

EXTRA CREDIT
Spell out your extra credit policy (even if your policy is not to have extra credit options): what kinds of activities may students participate in to receive extra credit (outside readings
and reports, library work, participation in psychological research)? How many total extra credit points can students earn toward their final grade? You should also specify exactly how extra credit points will be added to students’ regular grades (will they be added before or after the final examination score is figured in their point tally? Will they be added to the students’ final percentage scores or just to their numbers of points earned?)

**IMPORTANT DATES**
List here a summary of important course dates, such as dates of all tests and quizzes, the final examination, written assignments, and the last day to turn in extra credit.

**EVALUATION SUMMARY**
List here a review of course activities, their point value, and the percentage of the final grade that each activity is worth. For example:

<table>
<thead>
<tr>
<th>Course Activity</th>
<th>Point Value</th>
<th>Total Points</th>
<th>Percent of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Class Exams</td>
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<td>300</td>
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<tr>
<td>1 Term Paper</td>
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<td>100</td>
<td>16.67</td>
</tr>
<tr>
<td>4 Pop Quizzes</td>
<td>25</td>
<td>100</td>
<td>16.67</td>
</tr>
<tr>
<td>1 Final Exam</td>
<td>100</td>
<td>100</td>
<td>16.67</td>
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<tr>
<td>Totals</td>
<td></td>
<td>600</td>
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</tr>
</tbody>
</table>

**MAKE-UP POLICY**
Specify your make-up policy. What types of excuses will you accept in allowing students to do make-up work? What will be the arrangement for making up legitimately-excused course activities?

**DISABILITY POLICY**
Briefly outline your school's policy for students with disabilities. What procedures does your school follow for accommodating students who may have disabilities? If your school has an office designated to help students, list the contact information.

**ACADEMIC HONESTY POLICY**
Refer to your school’s policy on cheating and plagiarism. It is also a good idea to describe to students exactly what is meant by plagiarism, since many students are genuinely unaware of all the ways that they might unwittingly plagiarize someone else’s work.

**COURSE READING SCHEDULE**
This part of the course syllabus spells out your day-by-day plans for the term. We suggest that you use four headings and then simply list the relevant information under the appropriate heading. Don't forget to account for any holidays that may be occurring during the term. Here is an example of a reading schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Reading Assignment</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/16</td>
<td>M</td>
<td>Chapter 3: Sensation and Perception</td>
<td><em>Grade Aid</em>, chapter 3</td>
</tr>
<tr>
<td>10/18</td>
<td>W</td>
<td>Chapter 4: Learning</td>
<td><em>Grade Aid</em>, chapter 4 – <strong>EXAM #1</strong></td>
</tr>
</tbody>
</table>
Table of Contents:
Digital Media Archive for Psychology 4.0

Each topic folder has five sub-folders: Images; Lectures (including PowerPoint slides); Audio; Video; and Weblinks. The User's Guide has instructions for including these digital media in a PowerPoint Presentation. Most other major presentation programs can import these materials with ease, and these require only a quick search of the "help" files. The media are in common formats: images are .tif files, audio clips are .wav files, video clips are in .mov and .avi file formats.

The topic folders are:

Topic 01: Methods
Topic 02: Biology
Topic 03: Sensation and Perception
Topic 04: Learning
Topic 05: Memory
Topic 06: Development
Topic 07: Motivation
Topic 08: Emotion
Topic 09: Health, Stress, and Coping
Topic 10: Personality
Topic 11: Abnormal Psychology
Topic 12: Therapy
Topic 13: Social Psychology
Topic 14: Intelligence
Topic 15: Cognition
Table of Contents:

*Insights Into Psychology, Volume I*

*(Allyn & Bacon Video)*

**Psychology: Introduction, History, and Methodology**
Clip #1 – The Animal Research Controversy

**Biology**
Clip #2 – How Does the Brain Work?
Clip #3 – Alcohol and the Brain

**Sensation and Perception**
Clip #4 – An Internet for the Blind
Clip #5 – Parapsychology: Fact or Fraud?

**Consciousness**
Clip #6 – Stress and Sleep
Clip #7 – Drug-Free Deliveries

**Learning**
Clip #8 – Kindergarten: Ready for Success?
Clip #9 – Scared Straight?

**Memory**
Clip #10 – Alzheimer’s Alert
Clip #11 – Memory and Menopause

**Cognition and Language**
Clip #12 – Bilingual Education: Pros and Cons
Clip #13 – Learning Language

**Intelligence and Creativity**
Clip #14 – Piano Lessons and the Brain
Clip #15 – Genetics and IQ

**Human Development**
Clip #16 – Girls will be Girls and Boys will be Boys
Clip #17 – Male Menopause
Table of Contents:

*Insights Into Psychology, Volume II*  
(Allyn & Bacon Video)

**Motivation and Emotion**  
Clip #1 – Eating Disorders in Elementary School  
Clip #2 – Male Body Image

**Sex and Gender**  
Clip #3 – Niagara: Love Potion?  
Clip #4 – Same Sex Marriage

**Personality**  
Clip #5 – The Sense of Scents

**Health and Stress**  
Clip #6 – Stress on the Job  
Clip #7 – Attacking Stress: The Good, the Bad, and the Ugly

**Psychological Disorders**  
Clip #8 – Combating Schizophrenia  
Clip #9 – Experiencing Obsessive-Compulsive Disorder

**Therapies**  
Clip #10 – A New View on Electroconvulsive Therapy

**Social Psychology**  
Clip #11 – Dressed for Success
Table of Contents:

*Insights Into Psychology, Volume III*
(Allyn & Bacon Video)

ABC News and ScienCentral

**Genes and Heredity**
Clip #1 - Junk DNA (SC)
Clip #2 - Genetic Time Clock (SC)
Clip #3 - Birds and Language (SC)

**Human Development**
Clip #1 - Fetal Alcohol Damage (SC)
Clip #2 - When Children Won’t Eat (ABC)
Clip #3 - Family Fix (ABC)

**Memory and Consciousness**
Clip #1 - Alzheimer’s Smell Test (SC)
Clip #2 - Shrinking Brain – Short Term Memory Loss (ABC)
Clip #3 - A Wake Up Call About Sleep (ABC)

**Sensation and Perception**
Clip #1 - Noise and the Brain (SC)
Clip #2 - Dollars and Scents (ABC)

**Brain and Behavior**
Clip #1 - Your Brain on Food (SC)
Clip #2 - Alcohol Withdrawal (SC)
Clip #3 - ALS Lost Nerve Power (SC)
Clip #4 - Puppy Love (SC)

**Social Psychology**
Clip #1 - Group Learning (SC)
Clip #2 - Can You Depend on the Kindness of Strangers? (ABC)
Clip #3 - Racism in the Extreme (ABC)

**Abnormal Psychology**
Clip #1 - Listening to Blues Test (SC)
Clip #2 - Pulling Your Hair Out (ABC)
Clip #3 - Have I Killed Someone? (ABC)

**Therapy**
Clip #1 - Cognitive Behavioral Therapy (SC)
Clip #2 - 9-11 PTSD Therapy (SC)
Clip #3 - Wounded (ABC)
# Table of Contents:
Transparencies for Introductory Psychology

<table>
<thead>
<tr>
<th>#</th>
<th>Title:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Why You Need This Text</td>
</tr>
<tr>
<td>2</td>
<td>Introduction &amp; Research</td>
</tr>
<tr>
<td>3</td>
<td>Some Milestones in the History of Psychology</td>
</tr>
<tr>
<td>4</td>
<td>Major Perspectives of Modern Psychology</td>
</tr>
<tr>
<td>5</td>
<td>Evolution: An Overview</td>
</tr>
<tr>
<td>6</td>
<td>Types of Psychologists</td>
</tr>
<tr>
<td>7</td>
<td>Work Settings of Psychologists</td>
</tr>
<tr>
<td>8</td>
<td>Levels of Analysis</td>
</tr>
<tr>
<td>9</td>
<td>Role of Theory in Psychological Research</td>
</tr>
<tr>
<td>10</td>
<td>Elements of an Experiment</td>
</tr>
<tr>
<td>11</td>
<td>Five Steps of the Scientific Method</td>
</tr>
<tr>
<td>12</td>
<td>Correlation Does Not Prove Causation</td>
</tr>
<tr>
<td>13</td>
<td>Strength of Correlation</td>
</tr>
<tr>
<td>14</td>
<td>A Normal Distribution</td>
</tr>
<tr>
<td>15</td>
<td>Number of Symptoms after Therapy for Acrophobia</td>
</tr>
<tr>
<td>16</td>
<td>Transforming Data Can Distort the Conclusions</td>
</tr>
<tr>
<td>17</td>
<td>Biology of Behavior</td>
</tr>
<tr>
<td>18</td>
<td>The Secret of DNA</td>
</tr>
<tr>
<td>19</td>
<td>The Major Structures of the Neuron</td>
</tr>
<tr>
<td>20</td>
<td>Sensory Neurons, Motor Neurons, and Interneurons</td>
</tr>
<tr>
<td>21</td>
<td>The Action Potential</td>
</tr>
<tr>
<td>22</td>
<td>Neurotransmitters</td>
</tr>
<tr>
<td>23</td>
<td>Five Key Neurotransmitters and Their Functions</td>
</tr>
<tr>
<td>24</td>
<td>Reflexes: The Action of Afferent and Efferent Neurons</td>
</tr>
<tr>
<td>25</td>
<td>Divisions of the Human Nervous System</td>
</tr>
<tr>
<td>26</td>
<td>The Autonomic Nervous System</td>
</tr>
<tr>
<td>27</td>
<td>The Human Brain - A Cross-Section</td>
</tr>
<tr>
<td>28</td>
<td>Structures of the Brain</td>
</tr>
<tr>
<td>29</td>
<td>Major Regions of the Cerebral Cortex</td>
</tr>
<tr>
<td>30</td>
<td>The Principal Structures in the Limbic System</td>
</tr>
<tr>
<td>31</td>
<td>Two Views of the Cerebral Hemispheres</td>
</tr>
<tr>
<td>32</td>
<td>The Motor Cortex and the Somatosensory Cortex</td>
</tr>
<tr>
<td>33</td>
<td>The Eyes, Optic Chiasm, and Cerebral Hemispheres</td>
</tr>
<tr>
<td>34</td>
<td>Lateralized Functions of the Brain</td>
</tr>
<tr>
<td>35</td>
<td>The Effects of Severing the Corpus Callosum</td>
</tr>
<tr>
<td>36</td>
<td>Parallel Versus Serial Processing</td>
</tr>
<tr>
<td>37</td>
<td>The Neural Basis of Human Speech</td>
</tr>
<tr>
<td>38</td>
<td>Gazzaniga and LeDoux Experiment</td>
</tr>
<tr>
<td>39</td>
<td>The Endocrine Glands</td>
</tr>
<tr>
<td>40</td>
<td>Homozygous and Heterozygous Genotypes</td>
</tr>
</tbody>
</table>
Consciousness
39 Brain Waves During the Stages of Sleep
40 PET Scans of the Brain at Work
41 Stages of Sleep
42 Proportion of REM Sleep Over a Lifetime
43 Effect of Sleep Deprivation on Cognitive Performance
44 Sleep Disorders
45 Level of Hypnosis at First Induction
46 The Seven Symptoms of Substance Dependence

Results of a Survey of 8th, 10th, and 12th Graders about Their Use of Any Illicit Drug During the Previous 12 Months

Relationship between Alcohol Consumption and Blood Alcohol Level, by Gender and Weight

Alcohol Use Among Adolescents of Diverse Ethnicities

Amphetamines: Action on Neurotransmitters

Sensation and Perception
51 Electromagnetic Spectrum
52 Major Parts of the Human Eye
53 Retinal Pathways
54 From Retinal Image to Meaningful Information
55 Normal Vision, Myopia, and Hypermetropia
56 Correction of Vision Difficulties
57 A Negative Afterimage of the American Flag
58 Anatomy of the Human Ear
59 Decibel Levels of Various Sounds
60 Physical Characteristics of Sound
61 The Olfactory System
62 Sensory Receptors for Taste
63 Structures for Sensing Balance
64 Bottom-up and Top-down Processing
65 Depth Cues
66 Reversing Figure and Ground
67 Gestalt Principles of Perceptual Grouping
68 Ponzo Illusion
69 Muller-Lyer Illusion
70 Do You See an Old Woman or a Young Woman

Learning
71 Pavlov's Experimental Setup
72 Classically Conditioning a Salivation Response
73 Variations of the Classical Conditioning Procedure
74 Extinction of a Classically Conditioned Response
75 A Typical Extinction Curve
Development

153 The Long Road to a Zygote
154 Stages of Prenatal Development
155 Growth Patterns Across the First Two Decades
156 Gene Transmission for Hair Color
157 Reflexes in the Newborn
158 The Progression of Motor Development
159 Habituation and Test Events
160 Results of Fantz's Study
161 Assimilation and Accommodation
162 Infants' Reactions to Impossible Events
163 The Visual Cliff
164 Piaget's Developmental Stages and Kohlberg's Stages of Moral Development
165 Piaget's Conservation Tasks
166 Erikson's Psychosocial Stages of Development
167 Continuity Versus Discontinuity
168 Incidence of Sexual Activity in U.S. High School Students
169 Styles of Parenting
170 Bronfenbrenner's Ecological Systems theory
171 Levinson's Theory of Adult Development
172 The Graying of the World's Population
173 Theories of Gender Role Development
174 Gender Schema Theory

Stress and Health

175 The Ten Most Common Hassles for College Students
176 Selye's General Adaptation Syndrome
177 Sources of Work-Related Stress
178 The Biopsychosocial Model of Health and Wellness
179 America after September 11, 2001
180 Possible Biological Causes of Aggression
181 Developing a Stress Reduction Program

Disorders

182 Historical Perspective: Hippocrates' Humor Theory
183 Perspectives on Psychological Disorders

Annual Prevalence Rates of Selected Psychological Disorders among Adults in the U.S.

184 The Diathesis-Stress Model
185 Major DSM-IV Categories of Mental Disorders
186 Lifetime Prevalence of Anxiety Disorders
187 Personality Disorders
188 Diagnostic Criteria for Major Depressive Disorder
189 Lifetime Risk for Developing Depression in Ten Countries
190 Cognitive Mechanisms in Depression
Seasonal Affective Disorder
Myths about Suicide
Facts about Suicide
Positive and Negative Symptoms of Schizophrenia
Four Subtypes of Schizophrenia, According to DSM-IV
Genetic Similarity and Probability of Developing Schizophrenia
Body Image Distortion

Therapies
The ABCs of Rational-Emotive Therapy
Comparison of Different Types of Therapy
Goals of Psychotherapy
Differences Among Behavioral, Cognitive, and Cognitive-Behavior Therapies
Differences Between Psychodynamic and Client-Centered Therapies
Summary of Medications and Their Effects

Decrease in Patient Populations in State and County Mental Hospitals (1950-2000)

Social Psychology
Two Views of Attitudes
Elaboration Likelihood Model
Social Facilitation: Performing in the Presence of Others
Three Components of an Attitude
Methods of Reducing Cognitive Dissonance
Asch's Conformity Study
Evidence of Informational Social Influence
Group Think
The Bystander Effect I
The Bystander Effect II
The Five Choice Points of Bystander Intervention
Tendency to Help Kin
Why Love Fades
Perceptions of Racism in the U.S.
The Crime Clock

Applied Psychology
Need Theory versus Goal-Setting Theory
Expectancy Theories
Equity Theory
The Dual Mission of Industrial/Organizational Psychology
Performance Appraisal: Central to Other Human Resource Practices
Level of Education and Income
People's Use of Personal Space when Seated and Standing

Statistics
Raw Data from a Simple Experiment
Frequency Distribution
Mean, Median, and Mode
Frequency Polygon
The Normal Curve
Understanding Correlational Coefficients
Positive Correlation
Negative Correlation
No Correlation
Curvilinear Relationship
# Chapter 1
Psychology: Yesterday and Today

## Chapter at a Glance

<table>
<thead>
<tr>
<th>Detailed Outline</th>
<th>Instructors’ Resources</th>
<th>Print Supplements</th>
<th>Media Supplements</th>
<th>Professor Notes</th>
</tr>
</thead>
</table>
| **The Science of Psychology**  
- What Is Psychology?  
- Levels of Analysis | Objectives 1.1–1.2  
Extensions 1.1–1.2  
Activities 1.1–1.3  
Handouts 1.1–1.5 | Grade Aid exercises and practice tests;  
Test Bank questions 1-8, 90-93, 114-115, 131 | Transparencies 1, 2, 7 | |
| **Psychology Then and Now**  
- The Evolution of a New Science  
- The Psychological Way | Objectives 1.3–1.5  
Extensions 1.3–1.9  
Activities 1.4–1.7  
Handouts 1.6-1.8 | Grade Aid exercises and practice tests;  
Test Bank questions 9-49, 94-102, 116-124, 132-133 | Transparencies 3-6 | |
| **The Research Process**  
- The Scientific Method  
- The Psychologist’s Toolbox  
- Be a Critical Consumer of Psychology  
- Ethics | Objectives 1.6-1.16  
Extensions 1.10-1.21  
Activities 1.8–1.14  
Handouts 1.9–1.11 | Grade Aid exercises and practice tests;  
Transparencies 8-20 | |
Teaching Objectives

After studying this chapter, students should be able to:

1.1 Define psychology.
1.2 Identify and describe the three levels of analysis through which psychologists study mental processes and behavior, and explain how events at the different levels can interact.
1.3 Explain how psychology developed, from the time of Wilhelm Wundt to the present, including key figures in the history of psychology.
1.4 Compare and contrast the following schools of psychology: structuralism, functionalism, Gestalt psychology, psychodynamic theory, behaviorism, humanistic psychology, cognitive psychology, cognitive neuroscience, and evolutionary psychology.
1.5 Describe the three types of psychologists, including their educational backgrounds and possible specialties.
1.6 Identify and explain each of the steps of the scientific method.
1.7 Explain what naturalistic observations and case studies are and describe their advantages and disadvantages.
1.8 Explain what surveys are and discuss how they are used and what problems may be faced by collectors of survey data.
1.9 Explain what correlational research is, discuss the difference between a positive correlation and a negative correlation, and describe the potential advantages and disadvantages of correlational research.
1.10 Explain what an experimental design is and define the various terms associated with experimental research—for example, independent variable, confound, control group, control condition, and random assignment.
1.11 Compare and contrast experimental design with quasi-experimental design.
1.12 Define reliability and validity and explain why they are important to researchers.
1.13 Discuss what types of bias and experimenter expectancy effects exist, how they can affect the interpretation of research results, and what can be done about them.
1.14 Compare and contrast psychology and pseudopsychology.
1.15 Explain what a meta-analysis is and why it is used.
1.16 Explain the ethical principles that guide psychologists in research (both with people and with animals) and clinical practice.

Key Terms

Academic psychologist
Applied psychologist
Behavior
Behaviorism
Bias
Case study
Clinical psychologist
Cognitive neuroscience
Cognitive psychology
Control condition
Control group
Correlation coefficient
Counseling psychologist
Data
Debriefing
Dependent variable
Double-blind design
Effect
Evolutionary psychology
Experimental condition
## Chapter Outline

The Science of Psychology: Getting to Know You

### What is Psychology?

**Extension 1.1: Why Should I Learn Psychology?**

**Extension 1.2: Students’ Psychology IQ**

**Activity 1.1: Getting to Know Each Other and the Field of Psychology**

**Activity 1.2: Psychology as Science (PAS) Scale**

**Activity 1.3: Understanding Psychological “Data” and “Literature”**

1. **Psychology** is the science of mental processes and behavior.
   a. **Science** strives to know facts by using objective evidence.
      1) Science avoids mere opinions, intuitions, and guesses.
      2) Science uses logic to reason about the possible causes of a phenomenon and then tests the resulting ideas by collecting additional facts.
   b. **Mental processes** are what the brain does when someone engages in “thinking” activities such as storing memories, recognizing objects, using language, or experiencing feelings. Mental processes can be studied by:
      1) working backward, observing what people do, and inferring from outward signs what is going “inside,” or
      2) using brain-scanning techniques to take pictures of the living brain that show its physical changes as it works.
   c. **Behaviors** are the outwardly observable acts of a person, alone or in a group.
      1) Behavior consists of physical movements, voluntary or involuntary, of the limbs, facial muscles, or other parts of the body.
2) A particular behavior is often preceded by mental processes such as a perception of the current situation and a decision about what to do next.

3) A behavior may also be governed by the relationship between the individual and a group.

2. The goals of psychology are to describe, explain, predict, and control mental processes and behavior.

Levels of Analysis: The Complete Psychology

1. Psychological topics can be understood in terms of three types of events, each of which provides a field for analysis. Events at the three levels of analysis are constantly changing and influencing one another. To fully understand what is going on in any life situation, one must look at all three levels.

2. The three levels of analysis can be understood in terms of the function of a computer.
   a. The computer is a mechanism in which one event causes another. Each input triggers a specific event. The computer program is like a mental process in that it specifies the steps the mechanism takes during these events.
   b. The content of the computer, the specific information it contains and what’s being done to it, is also examined. The content (the research paper or love letter) relies on the mechanism (turning the computer on or running the program), but is not the same.
   c. If the computer is hooked into a network, the computers in that system affect each other and the network itself. The mechanism and content of each machine interacts with others that relay information.

3. The three levels of analysis build on one another. The content relies on the mechanism, and the network depends on both the content and the mechanism.

4. The levels of analysis apply to psychological phenomena. In addition, to understand the events at each level of analysis, we must relate them to the physical world that surrounds us, our physical environment.
   a. The mechanism is the brain and the biological factors that affect it. At the level of the brain, psychologists consider the brain’s activity as well as its structure and properties.
   b. At the level of the person, psychologists focus on the content of mental processes – how we use the information that our brains store and process. This includes beliefs, desires, and feelings.
   c. Social environments foster shared beliefs and practices passed on to its members as culture. At the level of the group, psychologists consider the ways that collections of people shape individual mental processes and behavior.

5. Unlike the example of the computer, in humans, events at the different levels are constantly interacting, changing, and influencing one another. This view of psychology encourages examining how different types of theories illuminate the same phenomena and also how these theories are interconnected in the field of psychology.
Psychology Then and Now: The Evolution of a Science

Psychology has probably always existed. However, psychology as a scientific field is relatively brief, spanning little more than a century. The roots of psychology lie in philosophy, from which it borrowed theories of the nature of mental processes and behavior, and physiology, from which psychologists learned to recognize the role of the brain in giving rise to mental processes and behavior and acquired tools to investigate these processes.

Activity 1.4: What Kinds of Psychologists Are They?
Activity 1.5: Role-Playing Theories of Psychology
Activity 1.6: Psychology around the World

Early Days: Beginning to Map Mental Processes and Behavior

Activity 1.7: A Jigsaw Puzzle Approach to Learning the Early History of Psychology

Early psychologists typically focused on perception, memory, and problem solving.

1. Wilhelm Wundt (1832-1920), usually considered the founder of scientific psychology, set up the first psychology laboratory in 1879 in Leipzig, Germany. The work of Wundt and colleagues led to structuralism, the first formal movement in psychology.
   a. Structuralists sought to identify the “building blocks of consciousness.”
   b. The goal of structuralism was to describe the rules that determine how particular sensations or feelings may occur at the same time or in sequence.
   c. Edward Titchener broadened the structuralist approach to apply it to the nature of concepts and thinking in general.
   d. The structuralists developed and tested their theories partly with objective techniques, such as measures of the time it takes to respond to different sensations.
   e. However, the main research tool was introspection, which means literally “looking within.”
   f. By 1913, Oswald Kulpe discovered that not all mental processes are accompanied by mental imagery.
      1) As expertise in a skill increases, people are less able to use introspection to describe it.
      2) The problem with using introspection as a scientific tool is that the process could not be objectively repeated with the same results.

2. Functionalism sought to understand the ways how people’s minds help them to adapt to the world.
   a. Functionalists wanted to know why people think, feel and behave as they do.
   b. The functionalists’ interest lay in the methods by which people learn and in how goals and beliefs are shaped by environments. As such, the functionalists’ interests span the levels of the person and the group.
   c. Many functionalists were Americans.
   d. The functionalists were strongly influenced by Charles Darwin.
      1) Darwin’s theory of evolution by natural selection stressed that some individual organisms in every species possess characteristics that enable them to survive and reproduce more fruitfully than others.
      2) Certain inborn characteristics make particular individuals more fit for their environments, enabling them to have more offspring and so on, until the characteristics that led the original individuals to flourish are spread through the whole population. Darwin called the inborn characteristics that help an organism survive and produce many offspring adaptations.
3) Functionalists applied Darwin’s ideas to mental characteristics.
4) The functionalists made several enduring contributions to psychology.
a) Their emphasis on Darwin’s theory of natural selection led them to theorize that human psychology is related to animal psychology. This meant that observing animals could provide clues to human behavior.
b) The functionalists’ focus on social issues spawned research that continues today.

3. Gestalt psychology began approximately fifty years after structuralism. (See also Chapter 4)
a. Like the structuralists, Gestalt psychologists were interested in consciousness, particularly as it arises during perception (and thus, they too focused on events at the levels of the brain and the person).
b. This school emphasized overall patterns of thoughts or experience. This makes sense given its name: The name “Gestalt” is derived from the German word Gestalt, which means whole.
c. Gestalt psychologists noted that much of the content of thoughts comes from perceptions and from inborn tendencies to structure things in certain ways.
d. Gestalt psychologists developed over a hundred perceptual laws, or principles, that describe how people’s eyes and brains organize the world. Most of the perceptual laws illustrate the idea that “the whole is more than the sum of its parts.”
e. Today, Gestaltism has become integrated into studies of the brain itself.

Psychodynamic Theory: More than Meets the Eye
Sigmund Freud developed the psychodynamic theory, a detailed and subtle theory of how thoughts and feelings affect people’s actions.
1. Freud stressed that the mind has separate components, some of which are unconscious, meaning outside of awareness and the ability to bring to awareness at will.
2. Freud believed that people have many unconscious sexual and aggressive urges.
a. Consciously, people find these unconscious urges unacceptable and so keep them hidden in the unconscious.
b. Unconscious urges build up until they demand release as thoughts, feelings, or actions.
3. Freud’s psychodynamic theory is a theory of how thoughts and feelings affect behavior.
a. The name psychodynamic comes from the Greek words psyche (meaning mind) and dynamo (meaning power).
b. This refers to the continual push-and-pull interaction among conscious and unconscious forces.
c. Freud believed that the push-and-pull between conscious and unconscious forces produce abnormal behaviors.
4. Other psychologists modified Freud’s theory (e.g., Alfred Adler stressed the role of feelings of inferiority).
5. Psychodynamic theories have attracted many followers.
6. However, there are many criticisms of psychodynamic theories.
a. The guiding principles rest on subjective interpretations of what patients say and do.
b. Psychodynamic theory became so intricate and complicated that it could be used to explain any observation or research result, making it impossible to test.
c. The theories have also had a critical influence on later research and theories in many ways.
Psychology: Yesterday and Today
Chapter 1

1) The idea of psychodynamic theory, that behavior is driven by a collection of mental processes, has proven invaluable, as has the focus on the level of the person.

2) Psychodynamic theorists focused attention on novel kinds of observations, which sparked much subsequent research.

3) Psychodynamic theories led to new approaches to treating psychological problems. For example, Freud’s theory led to psychoanalysis, in which a therapist listens to their patients and attempts to help them understand the unconscious bases of their thoughts, feelings, and behaviors.

Behaviorism: The Power of the Environment

1. By the early 1900s, some psychologists (calling themselves behaviorists) began to question whether psychologists should study hidden mental processes.

2. **Behaviorism** is the school of psychology that focuses on how a specific stimulus (object, person, or event) evokes a specific response (behavior in reaction to the stimuli). The followers of behaviorism said that psychology should concentrate on understanding directly observable behavior.
   a. Some behaviorists were willing to talk about internal stimuli such as motivation, but only those stimuli that were directly reflected in behavior (such as running quickly to catch a bus).
   b. Later behaviorists, among them B. F. Skinner, acknowledged that mental processes probably exist, but argued that it was not useful for psychology to focus on them.
   c. Instead, Skinner and his followers held that to understand behavior, we should study behavior.
   d. Because of their concern with the content of the stimulus-stimulus and stimulus-response associations, the behaviorists focus on events at the level of the person.

3. The behaviorists had many important insights, for example they saw that responses usually produce consequences, which in turn affect future responses.

4. A key idea in behaviorism is **reinforcement**, which is any consequence that results from a given behavior and strengthens or supports the behavior.

5. The behaviorists have developed many principles that describe the conditions in which specific stimuli lead to specific responses, many of which have stood up well in later investigations. For example, they found that individuals respond more frequently when the desirable outcomes are intermittent than when those “rewards” occur every time.

6. The behaviorists have had a lasting impact on psychology.
   a. Studies must conform to the level of rigor established by behaviorists.
   b. Behaviorist insights have improved psychotherapy and education.

7. However, behaviorists’ objections to the study of mental processes have been refuted.

Humanistic Psychology

1. **Humanistic psychology**, which emerged in the late 1950s and early 1960s, is the school of psychology that assumes people have positive values, free will, and deep inner creativity, the combination of which leads them to choose life-fulfilling paths to personal growth.

2. The humanistic approach (focused on the level of the person) rests on the ideas that the “client” (no longer the “patient” as in psychodynamic approaches) must be respected as equal to the therapist and that each person has dignity and self-worth.
3. Psychologists such as Carl Rogers and Abraham Maslow developed therapies based on the humanistic approach. Carl Rogers’s *client-centered therapy* incorporated Maslow’s theory that people have an urge to *self-actualize*—that is, to develop to their fullest potentials—and that, given the right environment, this development will in time occur.

4. Many therapies now in use reflect the influence of humanistic psychology.

5. However, it is no longer a major force in the field.

The Cognitive Revolution

*Extension 1.4: What Sparked the Cognitive Revolution?*

1. The tension between approaches that focused on unobservable mental processes and behaviorism was resolved by the computer.

2. The computer led to the *cognitive revolution* of the late 1950s and early 1960s.

3. Proponents of the cognitive revolution looked to the computer as a model for human mental processes.
   a. This movement came into full flower in the mid-1970s.
   b. It was led by, among others, psychologists/computer scientists Herbert A. Simon and Alan Newell and linguist Noam Chomsky.

4. The cognitive revolution gave birth to *cognitive psychology*, which attempts to characterize the nature of human information processing. In this view,
   a. Mental processes are like computer software.
   b. The brain is the hardware.

5. Cognitive psychologists focus on mechanism, not content, but they believe that just as different types of software can be discussed without ever considering how the hardware works, mental processes can be discussed without referring to the structure of the brain.

6. Computers showed, once and for all, why it is important that there is a science of the unobservable events that take place in the head, not just a science of directly observable behavior.

7. Cognitive psychology has had a major impact on the field.
   a. It defined many of the questions that are still being pursued in psychology, such as how information is stored and manipulated when people perform a particular task.
   b. It continues to develop subtle experimental methods to study hidden mental processes.
   c. Principles of cognitive psychology have been used to compare abilities across cultures, in part to sort out which aspects of our psychologies arise from inherent properties of the brain (common to all people) and which are products of our particular social experiences.
   d. Cognitive psychology has also been crucial in the development of *cognitive neuroscience*, which blends cognitive psychology and neuroscience (the study of the brain).
      1) Cognitive neuroscientists argue that “the mind is what the brain does” and hope to discover the nature, organization, and operation of mental processes by studying the brain.
      2) One of the goals of cognitive neuroscience is to distinguish among different sorts of mental processes.
      3) New brain-scanning technologies have allowed us to observe human brains at work.
   e. The cognitive neuroscience approach considers events at the three levels of analysis, but with a primary focus on the brain.
Evolutionary Psychology

Evolutionary psychology, the approach in psychology that assumes that certain cognitive strategies and goals are so important that natural selection has built them into our brains, first made its appearance in the late 1980s.

It has a heritage in functionalism and its emphasis on Darwin’s theory of natural selection.

But, instead of proposing that evolution has selected any specific behaviors (as earlier evolutionary theorists, including Darwin himself, believed), these theorists believe that general cognitive strategies (such as using deception to achieve one’s goals) and certain goals (such as finding attractive mates) are inborn.

This approach addresses events at all three levels of analysis.

It is currently being developed by researchers such as Lida Cosmides, John Tooby, David Buss, and Steven Pinker.

Evidence for evolutionary psychology comes from two sources.

The best evidence for these theories comes from cultural universality, or instances of the same practice occurring in all cultures. If people even in remote areas with very different cultures show the same tendencies, it is likely that the tendencies are not the result of learning.

In addition, evolutionary psychologists compare human abilities with those of animals, particularly nonhuman primates.

Researchers hope to discover the abilities of human’s common ancestors and, from those data, develop theories about the way those abilities may have been refined over the course of evolution.

However, even this evidence does not explain why certain characteristics may have developed; evolutionary theories are notoriously hard to test because no one knows what human ancestors were like or how they evolved.

The State of the Union: Psychology Today

Although schools of psychology gave risk to other schools over time, the original schools did not simply fade away. Rather than being replaced by their descendents, the parent schools often continued to develop and produce new and important discoveries.

Moreover, the different schools began to influence each other.

Today, we have a rich mix of different sorts of psychology, which are cross-fertilizing and interacting with one another in fascinating ways.

All of these varied approaches to psychology not only co-exist but feed off one another, with the result that we are learning about mental processes and behavior at an ever-increasing clip.

The Psychological Way: What Today’s Psychologists Do

As psychology developed, different schools of thought focused on different aspects of mental processes and behavior. Their influences are felt in what today’s psychologists do.

Clinical and Counseling Psychology: A Healing Profession

Extension 1.6: Careers in Psychology

Extension 1.7: Psychologists in Movies and on TV
Extension 1.8: Should Psychologists Be Able to Write Prescriptions?

1. Clinical psychologists are psychologists who provide psychotherapy and is trained to administer and interpret psychological tests.
   a. Some clinical psychologists provide psychotherapy (helping clients learn to change so they can cope with troublesome thoughts, feelings, and behaviors) and administer and interpret psychological tests.
      1) These psychologists usually work in private offices, clinics, or hospitals.
      2) They spend their days:
         a) Meeting with patients.
         b) Meeting with other psychologists to discuss how to be more helpful to patients.
         c) Supervising psychotherapists in training.
         d) Going out into the community.
         e) Doing paperwork, including writing notes on patients, submitting forms to insurance companies, and reading professional publications to keep up with new findings and techniques.
   b. Others are clinical neuropsychologists who work specifically with tests designed to diagnose the effects of brain damage on thoughts, feelings, and behavior and to indicate which parts of the brain are impaired following trauma.
   c. Still other clinical psychologists work with organizations to help them function more effectively.
   d. Clinical psychologists have one of two degrees:
      1) A Ph.D. (doctor of philosophy), awarded by a university psychology department. These programs teach research, in addition to psychotherapy and psychological testing.
      2) A Psy.D. (doctor of psychology), a graduate degree with less emphasis on research.
   e. In some states, clinical psychologists can obtain additional training and be granted the right to prescribe drugs. The first state to grant this privilege was New Mexico, in 2002.

2. Counseling psychologists help people deal with issues most people face (e.g., choosing a career, marrying, etc.).
   a. These psychologists:
      1) Often provide career counseling and vocational testing to help people decide which occupations best suit their interests and abilities.
      2) Sometimes provide psychotherapy, but they may have a more limited knowledge of therapeutic techniques than do clinical psychologists.
   b. Counseling psychologists have one of two degrees:
      1) A Ph.D., often from a program specifically in counseling psychology.
      2) An Ed.D. (doctor of education) from a school of education.

3. Psychiatrists are medical doctors (with M.D. degrees).
   a. As physicians with M.D. degrees, psychiatrists have extensive medical training and can prescribe drugs, whereas psychologists, in general, cannot.
   b. Psychiatrists (unlike clinical psychologists) have not been trained to interpret and understand psychological research or psychological testing.

4. Social workers have M.S.W. (master of social work) degrees.
   a. Social workers typically focus on helping families and individuals through psychotherapy.
b. They also teach clients how to use the social service systems in their communities.

5. **Psychiatric nurses** hold master’s degrees in nursing (M.S.N.) and certificates of clinical specialization (C.S.) in psychiatric nursing.
   a. Psychiatric nurses provide psychotherapy, usually in hospitals, clinics, or private practices.
   b. They work closely with medical doctors to monitor and administer medications.
   c. Sometimes, they can prescribe medication.

**Academic Psychology: Teaching and Research**

*Extension 1.9: What Do My Professors Do All Day?*

1. **Academic psychologists** focus on conducting research and teaching.
2. Academic psychologists spend their days:
   a. Preparing and giving lectures.
   b. Meeting with students about their program of courses or their progress in a specific course.
   c. Participating in committee meetings.
   d. Conducting research.
   e. Writing papers for publication in professional journals.
   f. Writing grant proposals to fund research.
   g. Writing letters of recommendation.
   h. Grading papers and tests.
   i. Reading journal articles to keep on top of their fields.
   j. Keeping up-to-date on departmental and university events.
3. The balance of time spent on teaching, research, and committee meetings will depend on the type of school.
4. Academic psychologists have many specialties, including:
   a. *Developmental psychologists*, who study how thinking, feeling, and behaving develop with age and experience.
   b. *Cognitive psychologists*, who study thinking, memory, and related topics.
   c. *Social psychologists*, who study how people think and feel about themselves and other people, and how groups function.
   d. *Personality psychologists*, who study individual differences in preferences and inclinations.

**Applied Psychology: Better Living Through Psychology**

1. **Applied psychologists** study how to improve products and procedures and conduct research to help solve specific practical problems.
2. They use the principles and theories of psychology in practical areas such as education, industry, and marketing.
3. They also conduct research aimed at solving specific practical problems.
4. An applied psychologist may hold either:
   a. A Ph.D., or
   b. A master’s degree in an area of psychology.
5. There are many different types of applied psychologists, including:
   a. *Human factors psychologists*, who work to improve products so that people can use them more intuitively and effectively (e.g., studying where screen icons should be put on a computer screen).
Instructor’s Manual

b. **Developmental psychologists** (e.g., which type of toy do children of different ages prefer playing with).

c. **Physiological psychologists** study the brain and brain-body interactions (e.g., working with a drug company).

d. **Social psychologists** (e.g., helping attorneys to choose jurors).

e. **Personality psychologists** (e.g., designing a new test to help select suitable personnel for a job).

f. **Industrial/organizational psychologists** focus on using psychology in the workplace (e.g., designing a better work environment for employees).

g. **Sports psychologists** work with athletes to help them improve their performances.

h. **Educational or school psychologists** work with educators to improve children’s development in schools.

**The Changing Face of Psychology**

**Extension 1.5 Women in Psychology**

1. In earlier times, few opportunities were available for women to make major contributions to this field.

2. In spite of the barriers of those days, a few women did make their mark, such as Margaret Floy Washburn (who was Edward Titchener’s first student to earn a Ph.D.) and Mary Whiton Calkins (the first woman to become president of the American Psychological Association).

3. Increasing numbers of women are making major contributions in all areas of psychology. In fact, in the last major survey, 77 percent of college graduates with psychology majors were women.

**The Research Process: How We Find Things Out**

**The Scientific Method**

The **scientific method** is a way to gather facts that will lead to the formulation and validation of a theory.

**Extension 1.10 Psychology Is Not Just Common Sense**

**Extension 1.11 How Scientific Is Psychology?**

**Extension 1.12 The Academic Laboratory and Clinical Practice**

**Activity 1.8 Using Riddles to Introduce Scientific Thinking**

**Activity 1.9 Doing Research**

**Step 1: Specifying a Problem**

1. Science tries to answer questions, which may be rephrased as “problems.”

2. Problems are questions one wants to answer or puzzles to be solved.

**Step 2: Observing Events**

1. Scientists want to know the facts as free from any particular notions of their significance as possible.

2. Facts are established by collecting **data**, which are careful observations or numerical measurements of a phenomenon.
   a. Properly collected data can be **replicated** (collected again).
   b. Scientists often prefer **quantitative data** (numerical measurements).
3. In addition, scientists rely on systematic observations, which document that a certain event occurs.
4. An event, in the scientific sense, is the occurrence of a particular phenomenon. Scientists study two kinds of events:
   a. Those that are directly observable.
   b. Those that can only be inferred.

Step 3: Forming a Hypothesis
1. The third step is to form a hypothesis of the relation between variables.
2. A variable is an aspect of a situation that is liable to change.
3. A hypothesis is a tentative idea that might explain a set of observations.

Step 4: Testing the Hypothesis
1. Then, the researcher must go about collecting new observations to test the hypothesis.
2. The first step toward testing the hypothesis is to create operational definitions of variables, which specify how the variables are measured or manipulated.

Step 5: Formulating a Theory
1. The fifth step is to use such evidence to formulate and support a theory, which is an interlocking set of concepts or principles that explains a set of observations.
2. Theories are rooted in an established web of facts and concepts and focus on the reasons for particular relationships among variables.
3. Hypotheses and theories both produce predictions, which are expectations about specific events that should occur in particular circumstances if the theory is correct.

Step 6: Testing a Theory
1. Finally, the theory is tested.
2. Researchers evaluate a theory by testing its predictions.
3. Once a theory has been formulated, it plays a key role in the process of formulating hypotheses. Each prediction of the theory is in fact a new hypothesis to be tested.
4. Each time a theory makes a correct prediction, the theory is supported and each time it fails to make a correct prediction, the theory is weakened.
5. If enough of its predictions are unsupported, the theory must be rejected and the data explained in some other way.
6. A good theory is falsifiable, meaning that is makes predictions it cannot “squirm out of.”

The Psychologist’s Toolbox: Techniques of Scientific Research

The different areas of psychology often pose and answer questions differently. Psychologists use a variety of research tools, each with its own advantages and disadvantages.

Descriptive Research: Just the Facts, Ma’am

Extension 1.13: Participating in Online Research
Activity 1.10: Demonstrating the Limitations of Self-Report Data
1. Not all research is sparked by specific hypotheses. Some research is devoted to simply describing “things as they are.”
2. For the scientist, facts are not intuitions, impressions, or anecdotes. Essential to the scientific method is careful, systematic, and unbiased observation that can be repeated by others.
a. Some researchers specialize in collecting data from real-world settings, called **naturalistic observation**.
b. Although naturalistic observation is an essential part of science, it is only the first step.
c. It is difficult to test specific interpretations of a finding using only naturalistic observation. The problem is that to test the hypothesis, one must seek out a specific situation where nature has set the relevant variables in just the right way.

3. Sometimes nature or human affairs produce unique situations, which change an independent variable in a novel way. A **case study** focuses on a single instance of a situation, examining it in detail.
   a. For example, a researcher might study a single astronaut, looking closely at her life and circumstances in an effort to formulate hypotheses about the psychological underpinnings that allow someone to succeed in this profession.
   b. One must be cautious about generalizing from a single case because any particular person may be unusual for many reasons and so, may not be at all representative of people in general.

4. A **survey** is a set of questions put to the participants about their beliefs, attitudes, preferences, or activities.
   a. Surveys are a relatively inexpensive way to collect a lot of data fairly quickly.
   b. They are popular among psychologists who study personality and social interactions.
   c. They provide data that can be used to formulate or test a hypothesis.
   d. The value of surveys is limited by what people are capable of reporting accurately.
      1) Surveys are not useful for asking certain questions, such as ones about behaviors that are performed unconsciously.
      2) People may not always respond honestly, especially if a survey touches on sensitive personal issues, such as sex.
      3) And even if people do respond honestly, what they say does not always reflect what they do.
   e. Not everyone who is asked to respond does in fact fill in the survey. Because a particular factor (such as income or age) may incline some people, but not others, to respond, it is difficult to know whether the responses obtained are actually representative of the whole group that the survey was designed to assess.
   f. Survey questions have to be carefully worded so they don’t lead the respondent to answer in a certain way and yet still get at the data of interest.

**Correllational Research: Do Birds of a Feather Flock Together?**

*Extension 1.14: Cautions Regarding Correlational Research*

1. Researchers use another method to study the relations among variables, a method that relies on the idea of correlation.
   a. A correlation is a relationship in which changes in the measurements of one variable are accompanied by changes in the measurements of another variable.
   b. A correlation coefficient (often simply called a correlation) is an index of how closely related two measured variables are.
      1) A positive relationship is one in which increases in one variable are accompanied by increases in another. It is indicated by a correlation value that falls between 0 and 1.0.
2) A negative relationship is one in which increases in one variable are accompanied by decreases in another. It is indicated by a correlation value between –1.0 and 0.

3) A zero correlation indicates no relationship between the two variables.

c. The closer the correlation is to 1.0 or –1.0, the stronger the relationship. Visually, the more tightly the numbers cluster around the line, the higher the correlation.

d. Correlational research involves measuring at least two things about each of a number of individuals or groups (or measuring the same individuals or groups at a number of different times) and looking at the way one set of measurements goes up or down in tandem with another set of measurements; correlations always compare one pair of measurements at a time.

e. The main advantage of correlational research is that it allows researchers to compare variables that cannot be manipulated directly.

g. The main disadvantage is that correlations indicate only that two variables tend to vary together, not that one causes the other. Remember: Correlation does not imply causation!

Experimental Research: Manipulating and Measuring

Extension 1.15: The Role of Control Groups
Activity 1.11: Benefits of Random Assignment

1. Much psychological research relies on conducting experiments (controlled situations in which variables are manipulated).

2. In an experiment, the investigator deliberately alters one aspect of a situation, which is called the independent variable, and measures another, called the dependent variable.

a. The independent variable is the aspect of the situation that is intentionally varied while another aspect is measured.

b. The dependent variable is the aspect of the situation that is measured as an independent variable is changed; the value of the dependent variable depends on the independent variable.

3. By examining the link between independent and dependent variables, a researcher hopes to discover exactly which factor is causing an effect (the difference in the dependent variable that results from a change in the independent variable).

4. Once researchers have found a relation between two variables, they need to test that relation to rule out other possible explanations for it; only by eliminating other accounts can we know whether a hypothesized relation is correct.

5. Confounds (or confounding variables) are other possible aspects of the situation that have become entangled with the aspects that the researcher has chosen to vary. Thus, they lead to results that are ambiguous.

6. One way to disentangle confounds is to use a control group.

a. The experimental group receives the complete treatment, that is, the complete procedure that defines the experiment.

b. A control group is treated identically to the experimental group except with regard to the one variable that is the focus of study; a good control group holds constant—or controls—all of the variables in the experimental group except the one of interest.

c. In a properly conducted experiment, the researchers rely on random assignment. Participants are assigned randomly (by chance) to the experimental and control groups, so that no confounds can sneak into the composition of the groups.
In the real world, it is not always possible or desirable to achieve randomness and so sometimes research designs must be quasi-experimental.

1. A quasi-experimental design includes independent and dependent variables and assesses the effects of different values of the independent variable on what is measured.
2. However, participants are not randomly assigned to conditions, and the conditions typically are selected from naturally occurring variations.
3. When composing the groups, the researcher should control for as many variables as possible to make the groups as similar as possible.
4. If the researcher wants to track changes over time, it is not possible to randomly assign people to the groups as time goes by because the researcher is taking measurements only from people who have been measured before.
5. Unfortunately, because the groups are never perfectly equated on all characteristics, one can never be certain what differences among groups are responsible for the observed results.
6. The conclusions drawn from quasi-experiments cannot be as strong as those from genuine experiments.

Meta-Analysis
In a meta-analysis, researchers combine and compare results from many different studies. This allows them to detect even subtle differences or relationships among variables. Results that are not evident in any individual study sometimes become obvious in meta-analysis. Studies involve observing a sample from a population, the entire set of relevant people. Samples taken from the population will vary, and if a sample is relatively small, the luck of the draw could obscure an overall difference that actually exists in the population.

Be a Critical Consumer of Psychology
Extension 1.16: Scientific Illiteracy
Extension 1.17: Distorting Data
Extension 1.18: Television and Misinformation
Extension 1.19: Science in the Courtroom
Activity 1.12: Reliability and Validity
1. When reading a report of a psychological finding in a newspaper, journal article, or book, look for aspects of the study that could lead to alternative explanations.
2. One way to evaluate data is in terms of reliability, or consistency. A reliable study is one that can be replicated, that is, obtained again if the study is repeated. When reading the results of a study, one should find out whether they have been replicated.
3. In science, **validity** means that a method provides a true measure of what it is supposed to measure. A study may be reliable but not valid or vice versa. There are multiple types of validity, including:
   a. **Face validity** is when design and procedure appear to assess the variables of interest.
   b. **Content validity** measures assess all aspects of the phenomenon of interest.
   c. **Criterion validity** is a measure or procedure is comparable to a different, valid measure or procedure.
   d. **Construct validity** measures assess variables specified by a theory.

4. The leaning toward a particular result is called **bias**, and it can take many forms.
   a. In **response bias**, people have a tendency to respond a particular way regardless of their actual knowledge or beliefs.
   b. **Sampling bias** occurs when the participants or items are not chosen at random but instead are selected so that an attribute is over- or underrepresented.

5. **Experimenter expectancy effects** occur when an investigator’s expectations lead him or her (consciously or unconsciously) to treat participants in a way that encourages them to produce the expected results. To guarantee that these don’t happen, the experimenter can use a **double-blind design**, in which the participant is “blind” to (unaware of) the predictions of the study (and so cannot consciously or unconsciously produce the predicted results), and the experimenter is “blind” to the condition assigned to the participant (and so experimenter expectancy effects cannot produce the predicted results).

6. **Pseudopsychology** is superstition or unsupported opinion pretending to be science.
   a. Pseudopsychology is not just “bad psychology,” which rests on poorly documented observations or badly designed studies and, therefore, has questionable foundations.
   b. Pseudopsychology is not psychology at all.
   c. Unfortunately, advice to be found in some self-help books falls into this category.

**Ethics in Research**

*Extension 1.20: Should Data from Unethical Research be Used?*

*Activity 1.13: Should Animals Be Used in Research?: A Debate*

*Activity 1.14: Writing an Informed Consent*

1. The war trials at Nuremberg, following World War II, led to the first set of rules, subscribed to by many nations, outlawing inhumane experiments. Certain methods are obviously unethical. Most situations are not as clear-cut.

2. California, Connecticut, Massachusetts, and Illinois do not allow researchers to conduct experiments in which the gain is not outweighed by the pain or experiments that have risks but do not benefit participants directly, unless the participants themselves provide **informed consent**, meaning that they have been told what they will be asked to do and the possible risks and benefits of the study before agreeing to take part. They are also told that they can withdraw from the study at any time without being penalized.
   a. Only after an individual clearly understands this information and gives consent by signature can he or she take part in a study.
   b. But not all states have such rules, and there are no general federal laws that regulate all research with human participants.
   c. Nevertheless, a study that uses funds from the U.S. government or from most private funding sources must be approved by an Institutional Review Board (IRB) at the university, hospital, or other institution that sponsors or hosts the study.
1) The IRB includes not only scientists but also physicians, clergy, and representatives from the local community.

2) The IRB considers the risks and benefits of each research study and decides whether the study can be performed.

3) These risks and benefits are considered from all three levels of analysis: Effects on the brain, the person, and the group.

d. Concerns about the ethical treatment of human participants lead most IRBs to insist that participants be **debriefed** (interviewed after the study about their experience). This ensures that they are having no negative reactions as a result of participation.

e. Deceiving participants is approved only when the participants will not be harmed and the knowledge gained clearly outweighs the use of dishonesty.

2. Animals are studied in some types of psychological research, particularly studies that focus on understanding the brain.

a. Animal studies must also have the approval of an IRB.

b. The IRB ensures that animals are housed properly and animals are not mistreated.

c. Researchers may not cause animals pain unless that is explicitly what is being studied and if there are potential benefits to humans of inflicting pain.

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**Ethics in Clinical Practice**

*Extension 1.21: Another Look at Levels: Gambling with a Mind*

1. According to the American Psychological Association (APA) guidelines, clinicians are not allowed to deliver therapy that they have not been trained in (or are learning, under supervision).

2. Psychologists may not communicate about a patient without specific permission from the patient, except under extreme cases (such as when a life is at stake).

a. Therapists have gone to jail rather than reveal personal information about their patients.

b. Difficult cases sometimes cause new laws to be written.

c. In most states, if a patient has told his or her psychologist that he or she plans to harm a specific other person, and the psychologist has reason to believe the patient can and will follow through with that plan, the psychologist must take steps to protect the targeted person from harm, even tough doing so may violate the patient’s confidentiality.

3. Therapists cannot engage in sexual relations with a patient or mistreat a patient physically or emotionally.

4. The APA has published general ethical principles and a code of conduct for psychologists, which includes the following general ethical principles:

a. Beneficence and Nonmaleficence.

b. Fidelity and Responsibility.

c. Integrity.

d. Justice.

e. Respect for People’s Rights and Dignity.

5. As research in psychology continues to progress at an increasing pace, new issues have emerged that would have been only in the realm of science fiction a few years ago. To address one set of these issues, a new branch of ethics, called **neuroethics** is focusing on the possible dangers and benefits of research on the brain.

6. Although in its infancy, neuroethics is already a hotbed of debate. So far, however, neuroethicists have more questions than answers.
Some scholars have been particularly concerned about the use of neuroscience to predict and control individual behavior.

The Center for Cognitive Liberty and Ethics asserts that two fundamental principles should form the core of neuroethics:

a. First, individuals should never be forced to use technologies or drugs that interact with their brains.

b. Individuals should not be prohibited from using such technologies or drugs if they so desire, provided that such use would not lead them to harm others.

Lecture Extensions

Extension 1.1: Why Should I Learn Psychology?
(Related Activity in Grade Aid.)
Discuss the skills and the information that can be gained during your course. Ask students to first complete the handout in the Grade Aid. (A copy is also provided here as Handout 1.1.) Then, review their answers with them. You can use this opportunity to point out that one course in psychology (or one degree, for that matter) will qualify them to become armchair analysts. However, because psychology is a science, they can expect to gain scientific skills in critical reading, reasoning, evaluating research conclusions, applying psychological research, and communicating effectively.

Additional resources:

Extension 1.2: Students’ Psychology IQ
Students are often unaware of all of the different topics that fall within the general topic of “psychology.” To introduce them to the range of topics, have them complete Handout 1.2: Test Your Psychology IQ. Then, have them score their own tests and interpret their answers. Be prepared to discuss each of the items.

The answers are as follows:

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Posted by Herman Huber to the TIPS listserv on 9/2/97. Used with permission.

Extension 1.3: Another Look at Levels: Sex and Emotional Involvement
Buunk and colleagues asked German, Dutch, and American men and women whether they would be more upset if their mates had sex with someone else or became emotionally involved with someone else. Men said that they would be more upset if their mate had sex with someone else; women responded oppositely. However, the difference between men and women was greater in the United States than in European countries, suggesting that culture can modulate or modify evolutionarily relevant behaviors.
Factors at all three levels contribute to the difference between men and women. At the level of the brain, genes may affect whether men and women are more interested in having sex with attractive mates or stable, long-term relationships. At the level of the person, personal beliefs and desires may influence the desire to have sex or form a stable, long-term relationship. At the level of the group, cultural differences impact these desires. In addition, the levels interact. For example, relationships are passed down through generations (level of the group). These ideas shape individuals, which modulate how people respond to genetic predispositions. In addition, built-in impulses influence our cultures, in the form of cultural norms and laws.

Extension 1.4: What Sparked the Cognitive Revolution?
Kosslyn and Rosenberg discuss how the invention of computers led to the cognitive revolution. You may want to expand on this topic and list some of the other factors that contributed. For example, you could preview the research done by Noam Chomsky (see pages 17 and 335 in the text) or Edward Tolman (see page 268 in the text). More interesting to students at this point, however, may be the impact of World War II on the cognitive revolution. Consider mentioning the following:

- During World War II, the armed forces became interested in how to improve human performance, especially with machines, such as radar equipment and airplanes. This required both psychological and engineering expertise; as a result, many psychologists were called upon to lend their knowledge to the war effort.
- Army psychologists had developed selection and job classification tests during World War I, but had then largely abandoned them until World War II. At that time, the Army increased its efforts and developed numerous other tests to assist in recruitment and appropriate placement of Army personnel.
- Gestalt psychologists such as Kohler, Koffka, and Wertheimer were forced to leave Germany during the Nazi regime. They came to America, where they challenged the predominantly held views of the behaviorists.

Additional sources:


Extension 1.5: Women in Psychology
There were few opportunities for female psychologists in the early years. Despite these hurdles, however, several women did make significant contributions to the field. You may want to spend some time discussing these trailblazers, including Mary Calkins, Anna Freud, Eleanor Gibson, Lillian Gilbreth, Florence Goodenough, Jacqueline Goodnow, Leta Stetter Hollingworth, Barbel Inhelder, Eleanor Maccoby, Maria Montessori, and Beth Lucy Wellman.

Students may appreciate that Lillian Gilbreth was the real-life inspiration for the original book and movie Cheaper by the Dozen. In 2003, the movie was remade, starring Steve Martin and Bonnie Hunt.
Psychology: Yesterday and Today  Chapter 1

(however, it isn’t faithful to the original book and movie). Gilbreth was dedicated to finding the best ways to do household activities; this goal led her to consult with General Electric about the design of modern kitchens and to invent several kitchen improvements (such as the step-on trashcan). She is now known as the “Mother of Modern Management.” For more information on Gilbreth, see http://gilbrethnetwork.tripod.com/.

For more information about these women, see the following Web sites:

Extension 1.6: Careers in Psychology

Begin by asking your students if they know any psychologists and, if so, what type of work those individuals do. Probably your students will know a clinical psychologist; if prompted, they may remember meeting a school psychologist during their K–12 years. Provide them with some other examples of nontraditional psychological careers, such as those profiled in the following sources:

Extension 1.7: Psychologists in Movies and on TV

Ask students to name as many examples of psychologists in movies and on TV as they can. Their suggestions are likely to include movies such as The Dream Team, Analyze This, Mumford, What About Bob?, Color of Night, Copycat, Miracle on 34th Street, What Women Want, Vanilla Sky, First Wives Club, Prince of Tides, Silence of the Lambs, Hannibal, Kiss the Girls, Girl Interrupted, One Flew Over the Cuckoo’s Nest, Good Will Hunting, Sixth Sense, and Prime. (More suggestions can be found on Dr. Brooke Cannon’s Web site at www.psychmovies.com, although the site has not been updated in several years.) TV shows featuring psychologists include The Sopranos, Cheers, Frasier, The Bob Newhart Show, and Growing Pains. You may even want to show short clips from some of these movies or shows. Based on Hollywood’s portrayal of psychologists, what do they believe that psychologists do? What do they have in common (besides ethical violations)? With prompting, students are likely to notice two themes. First, Hollywood tends to focus on clinical psychologists. Second, many of these clinical psychologists use a psychodynamic approach to therapy.

Another, more recent trend is the portrayal of psychologists involved in criminal investigations (e.g., Kiss the Girls). Due to the popularity of TV shows such as Profiler and X-Files, students are likely to have questions about criminal profiling and/or forensic psychology. You may want to make the following points:
Criminal profiling is not the same as forensic psychology. Not all profilers are psychologists, and certainly not all forensic psychologists do profiling. Career opportunities in criminal profiling are very limited. For example, before becoming an FBI profiler, an individual must spend many years as an FBI special agent.

Forensic psychology graduate programs may be either clinical or experimental. These programs prepare students to do anything that a clinical or experimental psychologist would normally do, but with a special focus on psychology as it applies to law. Forensic psychologists coming from clinical programs may provide counseling for officers, assess competency in criminal trials, do child custody evaluations, and provide therapy for offenders in correctional settings. Forensic psychologists with an experimental background may research these issues, as well as other issues such as the impact of different forms of police line-ups and interrogation methods.

Extension 1.8: Should Psychologists Be Able to Write Prescriptions?
(This topic can be used either as a lecture extension or as a debate subject. If used as a debate subject, see Handout 1.9.) New Mexico and Louisiana have both granted psychologists permission to prescribe drugs. Should other states follow their lead? There are important points to be made on both sides of this debate. Some have argued that it is ludicrous that family physicians and surgical specialists, who may have no psychological training, are allowed to prescribe the entire range of psychoactive drugs for treating mental illnesses, whereas psychologists, who specialize in treating mental illnesses, cannot prescribe any medications. Historically, most psychologists did not have the training in pharmacology that physicians were given. In recent years, however, many graduate programs in psychology have added coursework in physiology and pharmacology to narrow this gap. While most would agree that psychologists probably should not be able to prescribe nonpsychoactive medications, the wisdom of prohibiting them from prescribing any medications seems doubtful. This may be especially important in rural areas where access to health care may be limited. Because psychologists are pressing for legislative changes in some states that would allow psychologists to prescribe some medications in some circumstances, this issue is likely to become more important in the near future. How do students feel about this issue? Do they see any potential dangers if psychologists begin prescribing medicine?


Extension 1.9: What Do My Professors Do All Day?
(Related Activity in Grade Aid.)
Those not involved in academic life—including legislators and students in particular—frequently assume that professors lead the good life—coming in for only a few classes and office hours a week. You can use this opportunity to challenge this conception! Track your workload for a week. Then, compare your data with your students’ guesses. Alternatively, consider having students read a blog from a professor; for relevant blogs, see http://gradschool.about.com/od/academicblogs/ . After this exercise, you may need to point out all the benefits of working in academia!
Additional sources:

**Extension 1.10: Psychology Is Not Just Common Sense**

Many of us have heard the lament, “I thought this course would be easy because psychology is just common sense!” after a student has failed the first exam in an introductory psychology course. To combat this misperception, Timothy Osberg suggests describing one of the classic studies in the field to students and then asking them to guess the study’s outcome.

Specifically, he engages students in the following task:

Suppose you had volunteered to participate in a psychology experiment on campus. Upon arrival, you were seated at a table and asked to undertake a series of dull, meaningless tasks for about an hour. Afterward, the experimenter convinced you to extol the virtues of the tasks you had performed by describing them to potential participants as highly worthwhile, interesting, and educational. You were either paid $1 or $20 to do this. Suppose you were then asked to privately rate your enjoyment of the tasks on a questionnaire.

Then, ask the students,

*Which group of participants rated the actual enjoyment higher, the group paid $1 or the group paid $20?*

Ask students to show their hands first for the $1 group and then for the $20 group. Osberg reports that students will nearly all indicate the $20 group, in line with intuition. At this point, tell the class that the researchers (Festinger & Carlsmith, 1959) found that the students who received $1 rated the tasks as more enjoyable than those who were paid $20. The authors used the concept of cognitive dissonance to explain their findings. Students who received only $1 apparently had insufficient justification for their behavior, which led to a change in attitude about the tasks.


**Extension 1.11: How Scientific Is Psychology?**

While psychology calls itself a science, for years, and even today, psychologists have been seen by some as somehow less scientific than physicists, chemists, or other scientists. Ask students whether they believe psychology is really a science. Try to have them explain why they believe the way they do. Many times students think psychology is “just common sense.” However, true “common sense” is pretty rare, and it often does not work. Sometimes people make decisions that appear to “fly in the face” of reason, especially when they are emotionally caught up in a situation. Given this phenomenon, psychology has to go beyond common sense if it is to fully understand what makes people behave the way they do.

This point can be a good place to begin a discussion of the scientific method and the fact that psychologists generally use the same methodology as scientists in other sciences. An interesting
tangent you can explore with this exercise is to write down the major approaches that are discussed in Chapter 1 of the text (e.g., psychodynamic, humanistic, behavioral), and ask students to rate each of these psychological approaches on a scale of 1 to 10 as being scientific or unscientific. This activity dovetails nicely with the information presented in the text for each approach.

This exercise also allows you to explore the notion that many of the social sciences are labeled “soft sciences,” whereas sciences such as biology are labeled “hard sciences.” What is the difference between the two? This can be an informative issue to explore with students.

Consider administering the Psychology as Science (PAS) Scale, found in Activity 1.2 and Handout 1.4, in conjunction with this activity.

**Extension 1.12: The Academic Laboratory and Clinical Practice**

The February 28, 2003 edition of *The Chronicle of Higher Education* published an article by social psychologist Carol Tavris of the University of Southern California that lamented the split between the academic discipline of psychology and how therapy is practiced. The article can be found online at: http://chronicle.com/free/v49/i25/25b00701.htm. Robert Sternberg, president of the American Psychological Association, drafted a strong response to Tavris’s article, which is reprinted as Handout 1.5.

Have your students read both Tavris’s article and Sternberg’s response before class. Then ask them to discuss the following questions: What do practicing psychologists and academic psychologists share? How are they different? Why might some people believe that these groups are at war? How could they work together to better benefit clients and the public?

**Extension 1.13: Participating in Online Research**

Have students participate in an online study. A listing of possible studies can be found at http://psych.hanover.edu/research/exponnet.html. Afterward, discuss the possible benefits and limitations of this form of research.

**Extension 1.14: Cautions Regarding Correlational Research**

To highlight the adage “Correlation is not causation,” you might point out some specific examples why correlations should not be used to infer cause-and-effect relationships. For example, whereas height and weight are positively correlated, height (by itself) certainly does not directly cause weight, and weight clearly does not cause height. It just so happens that taller people tend to have larger bone structures and body frames, which in turn make it more likely that they will weigh more. You could also argue that researchers have found a nearly perfect positive correlation between heroin addiction and prior milk drinking. Nearly all heroin addicts drank milk as children, long before they began using heroin. Nevertheless, this fact is hardly evidence that milk drinking causes heroin addiction, especially in light of the fact that the vast majority of milk drinkers never go on to use “harder drugs” like heroin. For an even more absurd example that clearly makes the point, you might inform students that breathing and death have a perfect +1.00 correlation. As far as we know, everyone who has ever breathed has eventually died. A perfect correlation, but no one could legitimately argue that breathing causes death. (Although one might argue that not breathing causes death, one could equally argue that it is the death that prevents breathing, and so on.) While these examples are somewhat absurd, they do clarify the point, and students tend to remember them, in large part because they are so silly.
Extension 1.15: The Role of Control Groups
You might use the following example to illustrate the role of control groups in experimental research. Suppose you wanted to find out if a new medicine helps eliminate arthritis pain. You give a group of arthritis patients the medicine and monitor them closely over the next few weeks. At the end of the observation period, you are thrilled to find that the majority of patients are reporting less pain since they have been on the medicine. It would be natural to assume that the medicine caused a decrease in their symptoms. But would such an assumption be justified?

It could be that the patients’ beliefs that the medicine would help them actually caused their symptoms to decrease. It might also be that the increased attention they received from you as you observed them played a role in decreasing their symptoms. What other factors might have contributed to the results you have observed?

Without a control group, you cannot know for sure what caused the effects you observed. From here you demonstrate how the use of an adequate control group could help you sort out what really caused the decrease in symptoms.

Extension 1.16: Scientific Illiteracy
You may want to discuss the fact that a large percentage of the American public is effectively scientifically illiterate. This issue has shown up again and again in debates over “creationist theory” in high school biology classes, the popularity of “psychic hotlines,” and debates over new technologies such as the irradiation of meat (which was delayed for years because of court challenges raised by critics of the technology, who scared consumers into thinking that eating irradiated meat was the same as eating radioactive meat). What are the short-term and long-term consequences of this level of mass ignorance on the country’s technological development and social and economic status?

Astrology is a particularly useful example in this regard. Although it may well be the oldest-known systematic attempt to explain personality, dating back at least 5,000 years in one form or another, scientific research has consistently failed to support its claims. Yet astrology remains immensely popular throughout the world. This may be due to the placebo effect, selective perception, self-fulfilling prophecy, and the Barnum-statement qualities of many astrological predictions. Nevertheless, astrology still guides the lives of millions of people. How does belief in pseudosciences such as astrology, phrenology, and palmistry make people vulnerable and hinder social and scientific progress? This topic can make for an interesting and thought-provoking discussion, which you can use to highlight the need for people to better understand science and the scientific method.

Extension 1.17: Distorting Data
In the 1980s, women’s health organizations began to advocate for the inclusion of more women in medical research. They argued that for many years, women were not included in many medical studies. According to these organizations, researchers simply assumed that if a treatment worked for men, it would also work for women. However, as we know, men’s bodies and women’s bodies are different. Not surprisingly, they also react differently to different treatment methods. In 1993, in reaction to the general perception of the public and policymakers, Congress enacted legislation requiring the inclusion of women in clinical trials.

Use this example to discuss where researchers could have gone wrong. For example, if the problem is whether a certain drug improves the health of all people (Step 1 of the scientific method), then the
test of that hypothesis (Step 4) needs to include both men and women.

Recent meta-analyses suggest there was not a radical underrepresentation of women in research prior to the 1993 legislation. Thus, this example can also be used to illustrate how the media can distort scientific evidence for its own purpose.

For more information, see the following Web sites:
- http://www.womenshealthresearch.org/background.htm
- http://www.genomenewsnetwork.org/articles/04_00/comment_sexmatter.shtml
- http://www.jhu.edu/~gazette/2001/may0701/07mennot.html

Extension 1.18: Television and Misinformation
Because of the increasing reliance on television by more people as their main source of information, many students do not know how to separate scientific fact from the pseudoscience of fiction. While many television talk and news shows can be helpful and informative, they often present self-proclaimed “experts” who are there more because of their notoriety or colorful “stage presence” than because of any real knowledge of the topic being discussed. They may also spend more time sensationalizing issues for the purposes of increasing ratings than presenting accurate information. Often, when accurate information is presented, it is drowned out by a sea of unfounded opinion, emotional overreaction, and inaccurate “research” (which often turns out to be opinion or anecdotal evidence) that serves to raise the public’s fears needlessly. The shows’ hosts or anchors often do little, if anything, to help the viewer sort out which guests are presenting well-founded arguments as opposed to well-packaged nonsense. Too often, in the guise of “fair play,” guests spouting misinformation are given equal time to those trying to truly inform the public. The guest who packages his or her opinion the best is perceived as the “winner,” whether or not that person is actually telling the truth.

Students are not immune to being influenced by these types of shows, as well as many of the “fad” diets and self-help books that have flooded the marketplace in recent years. Often their comments and questions in class reflect this influence, and they will ask questions based on the kinds of misinformation presented in these books or on these shows. Instructors teaching psychology should pay close attention to the types and quality of information presented in self-help books and on TV talk shows so that they are prepared to deal with student questions. You might find it useful to bring several of the more egregious examples of inaccurate “pop psychology” books or TV talk shows to class and then discuss them with students in terms of how they have distorted the evidence.

Extension 1.19: Science in the Courtroom
As science advances, scientists are increasingly becoming involved in the legal system. In some cases, experts have used their knowledge to influence legal practices. For example, empirical research on eyewitness testimony has led to changes in some jurisdictions in line-up procedures. For more information, see http://www.apa.org/monitor/julaug04/accuracy.html.

In addition, scientists are often called upon to testify in legal cases regarding the interpretation of DNA evidence, the likely dangerousness of a defendant in the future, the consequences of a traumatic event, and many other issues. There are, however, difficulties in offering such testimony.
For example, because their evidence can be confusing to judges or jury members who are scientifically illiterate, experts often try to keep their presentations simple. Unfortunately, they may sometimes oversimplify what are inherently complex topics. In addition, scientists often disagree. Experts’ testimony also may not reflect research that is inconsistent with their own theories or interpretations. Of course, in such cases, the opposing side may present its own expert witnesses. However, this raises an issue of equity. Some parties to a lawsuit (for example, indigent defendants in criminal cases) may not be able to afford high-priced expert testimony.

For an excellent overview of the issues surrounding the use of science and social science in the courtroom, see the following online article, which was written by U.S. Supreme Court Associate Justice Stephen Breyer: http://www.issues.org/issues/16.4/breyer.htm.

For more information, see these sources:

**Extension 1.20: Should Data from Unethical Research Be Used?**

* (Related Activity in Grade Aid.)

At the Nuremberg trials, following World War II, it was discovered that Nazi doctors had experimented on concentration camp inmates. For example, inmates were frozen, subjected to pressure mimicking high-altitude conditions, forced to drink sea water, inseminated, sterilized, physically mutilated (e.g., through amputation), and injected with tuberculosis. Because it is not ethical to replicate these studies, some scientists have argued that these data should be used. For example, some Nazi studies dealt with victims’ reactions to immersion for long periods, a topic on which there are few other data. The Nazi data may provide important information about the development of appropriate equipment for cold-water rescue teams.

Ask your students if they believe it is ever justifiable to use research data obtained through unethical means. If so, under what conditions do they believe this use to be justified? If not, why not?

Additional sources:

Recently, some people have compared this ethical dilemma to that of using stem cell research. See the following sources for more information.
Extension 1.21: Another Look at Levels: Gambling with a Mind

Schizophrenia is a brain disease that often cripples someone’s ability to function in the world. Research has found that victims benefit greatly if treatment begins as soon as possible after the onset of the disease. Given this, should a doctor treat someone with schizophrenia with a new treatment, or use the known treatment (to avoid a delay that might have long-term negative effects)?

Discuss the factors at the various levels that should be considered in making a decision about treatment. For example, at the level of the brain, the doctor might consider the likelihood of the new treatment working. At the level of the person, the doctor might consider whether delaying treatment will change the person’s functioning in life and how drastic these changes might be. At the level of the group, the doctor might ask how the new drug might affect the person’s family. However, events at the levels interact; for example, the doctor’s decision can alter the interactions in the patient’s family, which in turn could affect the functioning of the patient.

Classroom Activities and Demonstrations

Activity 1.1: Getting to Know Each Other and the Field of Psychology

Before class, prepare enough copies of Handout 1.3 for the entire class. During class, pass out these handouts. Explain that this exercise is intended to help members of the class meet one another. Students should mill around the classroom, seeking other students to sign for given entries on the handout. For example, they should look for a classmate who is a twin. Each classmate may sign only one time on each page. Then, try one of two approaches. You may want to provide a limited amount of time (e.g., five or ten minutes) and then give a small prize (e.g., a candy bar) for the student who finishes the page first during that time. Alternatively, allow enough time for all students to complete the exercise. In either case, review results with students after the exercise; this gives you the opportunity to know your students better. Additionally, make the point that these topics will be covered in the coming semester.

Activity 1.2: Psychology as Science (PAS) Scale

As you introduce the definition of psychology, consider asking students to complete the Psychology as Science (PAS) Scale (Friedrich, 1996), which is included here as Handout 1.4, before class. Although the author reports three underlying factors for the scale, the importance of the factor structure is unclear; thus, for scoring purposes, give the following instructions:

- Reverse-score items 8, 9, 10, 14, 17, 19, and 20 (i.e., a answer of 1 is given a “new” score of 7, and vice versa; 2 is assigned a “new” score of 6, and vice versa; 3 is assigned the “new” score of 5, and vice versa; and no changes are made to answers of 4).
- Add the values for all answers except for 1, 2, 5, 11, and 15 (which are fillers).

Friedrich found that high scores on the PAS were associated with greater belief in the efficacy of psychotherapy, greater expressed willingness to seek therapy for important personal problems, and more favorable responses to participating in psychological research (for example, as part of an undergraduate research pool).
Use the results of this scale to explore the fact that psychology is based on psychological studies using the scientific method. Consider re-administering this scale at the end of the semester to ascertain whether students’ perceptions of psychology have changed as a result of your class. Some authors argue that it is critical that both students and the general public understand the scientific underpinnings of psychology so as to ensure continued support for the field. In his letter to *The Chronicle of Higher Education* in 2003 (included here as Handout 1.5), then-APA President Sternberg pointed out some possible reasons for the public misperceptions of psychology and explained how clinical practice is related to the science of psychology.

Activity 1.3: Understanding Psychological “Data” and “Literature”
Consider the following activity in conjunction with Activity 1.2. Alternatively, you may assign this activity in Chapter 2 when you discuss the scientific method.

Psychology instructors are so familiar with the process of collecting data and eventually distilling that information into textbook form that they may forget that students do not understand the terms “data,” “literature,” and “journals” in the same way. Consider helping students to understand these terms, and the process of publishing data, by bringing in visual props. Specifically, bring the following to class:
- A large stack of raw data (with all identifying information redacted)
- A slightly smaller stack of journals
- A slightly smaller stack of professional books
- The Kosslyn and Rosenberg textbook
- *Publication Manual of the American Psychological Association*

Line up the stacks of raw data, journals, books, and textbook from left to right. Explain to students that the psychology is based on science, which begins with studies. After a researcher conducts a psychological study, he or she is left with much raw data. (Point to the stack of raw data.) To make this information digestible to fellow psychologists, the researcher analyzes the data and writes the analysis up in a form governed by the American Psychological Association. (Hold up the *Publication Manual.*) These papers are compiled into journals. (Point to the stack of journals.) Explain that these journals are periodically bound into larger volumes, to make storage easier; thus, when they enter the library, students will find bigger, bound volumes. However, inside the bound volumes are individual issues. Over time, as more research on a given subject accumulates, researchers will summarize this research into both written and edited books. (Indicate the stack of books.) Finally, some writers will condense the information even more into textbooks. (Hold up the textbook.)

Explain to students that scientists often use the word “literature” to refer to any form in which raw data are published (e.g., journal articles, books, textbooks). The term “raw data” refers to the original accumulation of surveys or other instruments; however, the word “data” is used to refer to any source in which statistics about the raw data are presented. Data will almost always be presented in journal articles, are sometimes presented in books, and are rarely presented in textbooks. Ask students to identify the value of reading journal articles (e.g., the specificity, knowing exactly what methods were used) versus books (e.g., obtaining an overview of an area of research) or textbooks (e.g., obtaining an overview of an even broader area).

Activity 1.4: What Kinds of Psychologists Are They?  
(*Related Activity in Grade Aid.*)
Have students bring their Grade Aids to class so that they can take the short questionnaire there. (A copy is also provided as Handout 1.6.) Then, lead a discussion helping them to identify which theories are represented by each of the letters. After the discussion, they should see that:
- As represent psychodynamic theory.
- Bs represent behaviorism.
- Cs represent cognitive psychology.
- Ds represent humanistic psychology.
- Es represent evolutionary psychology.

Students can tally their results to see which school of psychology they are most like.
Activity 1.5: Role-Playing Theories of Psychology  
*(Related Activity in Grade Aid.)*

For this exercise, find a case study of a social problem. Either tell students to research the case or, if you prefer, provide a brief handout about the case. An example of one case is found in Handout 1.7. Divide students into groups. Each group is to discuss the key points that each of the current schools of psychology (e.g., psychodynamic, behaviorist, humanistic, cognitive, cognitive neuroscientist, and evolutionary psychologist) would raise about this case. In other words, how would each theory try to explain the case? If groups contend that there isn’t enough information to present a particular theory (e.g., cognitive neuroscience), ask them what kind of information such a theorist would collect.

You may want to stop at this point. Alternatively, you can assign each group to one of the theories, have them conduct further research into the theory and the case, and then stage a mock television show (à la *The McLaughlin Group*) at which a representative from each theoretical group presents his or her views.

Activity 1.6: Psychology around the World

Mainstream psychology has a distinctively Western history. However, this does not mean that there are not trained psychologists or psychological organizations around the world. Recent events (including the September 11, 2001, attacks; the ongoing wars in Afghanistan and Iraq; and the Asian tsunami in December 2004) have prompted American psychologists to begin looking outward toward psychology in other countries.

Assign each individual student or group of students to a different country. Have them research the psychological field in that country using Handout 1.8 as a guideline. Then, ask groups to share the information they discovered.

There are many sources available online, including the following.

Activity 1.7: A Jigsaw Puzzle Approach to Learning the Early History of Psychology

For this activity, you will need one or more colorful children’s jigsaw puzzles, depending on class size. Each puzzle should measure approximately nine inches by twelve inches and contain twelve to fifteen pieces. There should be at least one puzzle piece per student. Thus, four puzzles would be needed for a class of fifty.

Break the puzzles apart and distribute the pieces randomly throughout the class, being sure not to give adjacent puzzle pieces to adjacent students. After all students receive a piece, invite them to tell you everything they can about their piece. Ask them to consider you “an alien who has just landed from the mother ship,” someone for whom everything must be reduced to a basic level and explained in terms that cannot be reduced further. Their descriptions of the puzzle pieces should not assume prior knowledge on your part (e.g., “it has a Ninja turtle on it” would assume prior knowledge). Eventually, accept descriptions such as “it is round,” “it has color on it,” and “it has no odor” because these answers are more fundamental than the previous ones. This exercise helps students understand the difficulty of reducing anything to its most fundamental level. When they have nothing more to say, introduce the word **structuralism** as a way of knowing an object or behavior by reducing it to its most basic parts. Then, have students tell you how much they know about their piece and how much they still need to know about it. This helps students to realize the limits of structuralism.

Next, students should figure out what their piece does. Encourage them to mill about the room to find adjoining pieces. (This mingling also serves as an excellent icebreaker.) After the students see how their pieces work in conjunction with other pieces, introduce the word **functionalism** as a way of knowing an object or behavior by seeking to understand its function or purpose. In short, discuss what the piece can do and what it cannot do. Then, ask students if their knowledge of their piece is complete. Although they know what its parts are (structure) and what it does (function), is there more to know? As isolated groups of students hold their two-piece objects, they realize the limitations of this approach as well. Unless everyone continues to explore, they will not obtain larger meaning and additional knowledge.
Finally, have students continue to work with their pieces to assemble all relevant parts into a whole. Again, with multiple puzzles and random piece distribution, students must cooperate and communicate to create meaningful whole puzzles. After puzzle assembly, introduce the term Gestalt psychology as a way of knowing an object or behavior by creating a whole from parts, such that the whole derives its meaning only when the parts relate and work together. Ask if anyone has heard the maxim “The whole is greater than the sum of its parts” and explain its meaning in relation to what they have just learned.


Activity 1.8: Using Riddles to Introduce Scientific Thinking

Joe Hatcher designed this exercise to demonstrate key points concerning scientific thinking, as well as the process and experience of being a scientist.

To begin, read the following riddle to the class:

You are walking in the desert and find a man lying face down with a pack on his back, dead. How did he die?

Tell the class that you will respond to any yes/no questions. Continue this process until the class arrives at the correct conclusion: The man is a parachutist whose parachute failed to open.

Next, proceed with more riddles. If the class is small enough, divide it into small groups with one member of each group acting as the moderator and receiving the correct answer. The additional riddles and corresponding answers are as follows:

1. A man walks into a bar and asks the bartender for a glass of water. The bartender reaches under the bar, pulls out a large pistol, and points it right in the man’s face. The man says “thank you” and turns and walks out of the bar. Why did the man say “thank you”?
   (Answer: He had the hiccups.)

2. A man is at work and wants to go home. However, he will not go home because a man wearing a mask is waiting there for him. What does the first man do for a living?
   (Answer: He’s a baseball player who is standing on third base.)

3. A man is found shot to death in a room with a table, four chairs, and 53 bicycles. Why was he shot?
   (Answer: He was cheating at cards by having an extra ace; there are 53 Bicycle playing cards in a normal deck.)

Hatcher suggests pointing out to students that both riddle solving and scientific thinking involve making sense of contradictory data. You can point out specific lessons about scientific thinking that may be gained from riddle solving. Refer back to these lessons as you continue your lecture on the scientific method:

1. It is often important to view a problem from more than one perspective.
The ability to alter perspective is critical to any science. Continued questioning from a wrong perspective will not lead to progress, but once the correct perspective is found, the solution can often be easily found.

2. Prior assumptions concerning data are dangerous. In the parachute riddle, the common assumption the man is wearing a backpack leads to fruitless questions. Similarly, in viewing scientific data, assumptions can cause people to overlook the unexpected. For this reason, questioning basic assumptions is often productive.

3. Yes/no questions, when properly formed, yield highly useful data. Hatcher points out that the yes/no questions of the riddles are paralleled in science by the alternative and null hypotheses. In both cases, the question (or hypothesis) allows one to choose between two mutually exclusive views.

4. Details that do not fit expected patterns are often of crucial importance. In the parachute riddle, discovering that there are no footprints around the body is inconsistent with most interpretations of the problem. Once students discover this fact, it usually leads to a swift conclusion. Similarly, details inconsistent with general assumptions often spur scientific advances.

5. Persistence is a key quality in problem solving. Students sometimes terminate a promising line of questioning, unaware that they are near a solution. Although persistence can lead to mounds of useless data, some degree of persistence is often necessary to solve a problem.

6. In searching for complicated answers, simple ones may be overlooked. Although the riddles appear complex, the solutions are simple. You can use this to note that simple approaches may account for vast amounts of data (e.g., Darwin’s theory of natural selection) and that simplicity is often used as one criterion for evaluating theories.

7. Science is frustrating, is exciting, and requires considerable courage. While solving the riddles, students become alternately frustrated and excited. Exposing their thoughts to the scrutiny of others, students gain a glimpse of the courage that it takes to subject one’s ideas to possible falsification.

At the end of the exercise, Hatcher points out to his students that although there are many similarities between riddle solving and the scientific process, there is one crucial difference: Riddles have solutions that perseverance will discover, but science makes no such guarantee. Scientists must pursue their goals with no assurance of success, which requires a special kind of commitment.


Activity 1.9: Doing Research
Have your students learn the research process by actually conducting their own mini-study. Divide the class into small groups containing four to five students. After you discuss each step of the
research process, have the groups actually do that step. For example, after you lecture about finding research problems, have the groups find their own problems. Encourage simple studies that they may actually conduct in the classroom, via either simple experimentation (e.g., taste tests of advertisers’ claims about their products) or simple surveys. If time permits, have students conduct their studies. At a minimum, all groups should report back to the class as a whole. Other members of the class may then offer critiques of the research design and issues that the “researchers” should be careful to avoid.

Activity 1.10: Demonstrating the Limitations of Self-Report Data

Ask students if they would be willing to eat chocolate-covered bugs, frog’s legs, or another delicacy for $1. Continue bargaining until you have three or four students who say that they are willing to do this. Call these students up to the podium and then pull out the chocolate-covered bugs, frog’s legs, or other food (available in the gourmet section of large, metropolitan grocery stores, if you prefer not to prepare your own!). At this point, several of your students are likely to refuse to eat the delicacy. Whether the students actually eat the delicacy is unimportant, as the exercise should generate sufficient class discussion in either case. Use this exercise as an opportunity to discuss self-report data versus actual behavior.

If you prefer not to do this exercise in class, you may want to purchase one of the Survivor tapes, or record one of the shows yourself. Each season of Survivor includes an episode in which the survivors must eat or drink something that most Americans would find distasteful (e.g., eating bugs or drinking cow’s blood). Beforehand, many of the survivors say that they will be able to perform this task; however, some survivors, when faced with the reality of the situation, cannot or will not do so.

Activity 1.11: The Benefits of Random Assignment

The advantage of randomly assigning participants to the different conditions in an experiment is that any variables that might affect the outcome of the study (that are not controlled for) will be randomly divided between the conditions of the experiments. Thus, while the two groups are not equal or identical, random variability is divided among the different groups.

To introduce this concept, you might ask students to consider the following situation: A researcher is interested in knowing whether participants who read the book before a lecture did better or worse on the test than participants who read the book after the same lecture. In this study, there are two conditions: reading the textbook before the lecture and reading the textbook after the lecture. Suppose the researcher choose the front two rows of the class to read the textbook before the lecture. The rest of the class was to read the textbook after lecture. The potential problem is that students who sit in the front two rows of class are often better students than students who sit elsewhere in the classroom. These front-row students are likely to score higher on the test regardless of whether reading before or after lecture is most effective. (Incidentally, recent research by Robert Bjork of UCLA, presented at the January 2005 National Institute for the Teaching of Psychology, suggests that it is actually more beneficial for students to read the textbook after the associated lecture.)

In addition, David Watson developed the following technique for teaching random assignment: Tell the class that you have invented a way of coaching basketball that you think will lead to superior results. Before you retire from your academic job to seek a job as an NBA coach, you want to do a study to test the idea that your training method improves team performance. However, you are worried about the possible confounding variable of height. Everyone knows that height makes a big
difference when playing basketball. Thus, if your team has many average-height or short players on it and the other team has mostly tall players, then your opponents will probably be better even if your training method works. Alternatively, if you are coaching a mostly tall team and playing against a mostly short team, your team will be better even if your training method doesn’t work (leading you to give up a good academic career for naught).

Using random assignment will overcome this problem. To do this, start with a pool of participants (either the whole class, if the class is small, or a subset of the class). Watson suggests using members of only one sex to avoid too much variation in height. The participants are all potential basketball players; half of them will be coached in the traditional manner, and half will be coached using your new technique. Flip a coin for each of the participants: If the coin comes up heads, the participant is assigned to Team A (traditionally coached). If the coin comes up tails, the participant is assigned to Team B (your new coaching method). Have the students stand on one side of the classroom if they are on Team A and on the other side if they are on Team B.

After you are done, have both teams line up from shortest to tallest. Then have one team stand behind the other. Random assignment will assure that the teams are roughly equivalent in terms of height. That will eliminate the variable from your hypothetical experiment.


**Activity 1.12: Reliability and Validity**

Bring to class an instrument that is broken—for example, a broken ear thermometer. Take multiple readings from students using this instrument. Point out that reliability and validity refer both to specific instruments and to complete studies. Lead the class in a discussion about reliability and validity. Among the questions that you may want to ask are these:

- Is a thermometer a *valid* way to measure sickness? (No, because many forms of sickness have nothing to do with temperature.)
- Is there anything for which a *working* thermometer would be a valid instrument? (Yes, temperature.)
- If you have taken multiple readings and obtained different results, is the instrument a *reliable* instrument? (No, because you aren’t obtaining the same results repeatedly.)
- Which variables (besides whether the instrument is broken) will affect whether you obtain the same readings? (Time and raters. Discuss the importance of obtaining similar readings within close time intervals and between raters.)

**Activity 1.13: Should Animals Be Used in Research? A Debate**

Give all students a copy of the debate rules you will be using. An example of some debate rules is found in Handout 1.9. Alternatively, you may want to develop more formal rules by using sources from the Internet or in consultation with your school’s Communications Department. If this will be a graded assignment, you will also want to specify grading criteria.

After debate rules are clear, introduce the debate topic: “Researchers should not be allowed to use animals in research.” Tell the class that there will be four groups, who will play the following roles: affirmative side, negative side, judges, and audience. Ask for student volunteers to play the
affirmative and negative teams. (They will be more impassioned and motivated if allowed to argue
for their preferred side.) Assign remaining students to play the judges and audience members. Give
students adequate time to investigate the topic of animal research on the Internet or in the library.
Finally, conduct the debate, following the order of speeches in Handout 1.9.

If you have a large class, you may want to plan two debates (yielding eight groups). An additional
topic worth debating appears under Lecture Extension 11.7 (“Should psychologists be able to write
prescriptions?”).

Activity 1.14: Writing an Informed Consent
Present the elements of informed consent. See the online APA Code of Ethics at
http://www.apa.org/ethics/code2002.html#3_10 for more information on this topic. You may
want to print out this portion of the Code for students to use during this exercise. Distribute copies
of Handout 1.10 and have students divide into small groups. Tell students that they are to write a
clear, friendly letter soliciting participation in this research project. After they have finished,
distribute Handout 1.11 and ask them to compare their letters with the sample letter.

Narratives

Books

  of…” stories from different types of psychologists, as well as other information about each
  of the subfields.

- Diary of a Country Therapist, by Marcia Hill (2004), is the memoir of a
  psychotherapist living in rural Vermont.

- Ethics in Plain English, by Thomas Nagy (2000), provides fictional vignettes to
  illustrate the APA Code of Ethics.

- Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and
  Activists, by Joel Best (2001), discusses how the media distort scientific findings. For
  example, a psychologist’s finding that 6 percent of priests were at some point sexually
  attracted to young people was transformed into the “fact” that 6 percent of priests are
  pedophiles. This book also describes the questions that students can ask themselves to avoid
  falling for these “lies.”

- How to Lie with Statistics, by Darrel Huff (1954), is a classic. It explains the ways in
  which the media and research teams can lie about statistics. Although the content is very
  serious, the tone is humorous, so this book makes for enjoyable reading.

- Love’s Executioner, by Irvin Yalom (2000), is by a psychotherapist who tells the tales
  of his cases.

- Lying on the Couch, by Irvin Yalom (1997), is a fictional work about psychotherapy,
  written by a psychotherapist. This author has many more books, both fiction and nonfiction.
The Last Blue Plate Special, by Abigail Padgett (2001), tells the story of a gay social psychologist, normally a consultant on jury matters, who turns sleuth when she determines that the odds of two recent deaths being from natural causes is statistically unlikely.

A Mathematician Reads the Newspaper, by John Allen Paulos (1995), is a book about a mathematician who reads through newspapers and finds many mathematical fallacies.

No Time for Lunch: Memoirs of an Inner City Psychology, by Thelma Blumberg (2004), is the true story of a former school psychologist with the Baltimore City School System.

The Passionate Psychologist, by John Reisman (2001), is a mystery involving the death of a prominent psychologist. The author is Emeritus Professor of Psychology at DePaul University in Chicago.


The Story of Psychology, by Morton Hunt (1994), personalizes the history of psychology with anecdotes and mini-biographies, including many of those featured in Chapter 1.

Movies

Andromeda Strain (1971) is a film about a recovery team who uses the scientific method to identify a deadly virus that was brought to Earth by a U.S. Army satellite.

Deep Blue Sea (1999) tells the story of a research scientist who finds a way to enlarge sharks’ brains so that she can test a drug for Alzheimer’s disease. This film presents an interesting ethical situation.

Inherit the Wind (1960, with numerous TV remakes) tells the true story of the 1925 “Scopes Monkey Trial,” in which a teacher was arrested and tried for teaching Darwin’s theory of evolution. This film presents an outstanding opportunity to discuss Darwin’s theory and the influence that it has had. (For example, stage models of development were influenced by Darwin’s theory, as was the modern theory of ethology.)

Junior (1994) is a comedy about a research scientist (Arnold Schwarzenegger) and obstetrician (Danny DeVito) who are working on a drug to prevent miscarriages. Their work initially involves animal research; however, when their funding is withdrawn, they decide to test the drug by impregnating Schwarzenegger’s character. This film provides the opportunity to talk about ethics in research with both animals and humans.

Lorenzo’s Oil (1992) is the story of a boy named Lorenzo Odone, who suffers from an incurable, fatal brain disorder. When Lorenzo’s doctors give up trying to find a cure for him, his family begins to research the brain disorder in an attempt to find a treatment that could save his life. Excellent opportunity to discuss the research process.
• Miss Evers’ Boys (1997) stars Alfre Woodard and Laurence Fishburne in the true story of the Tuskegee Syphilis Study, which was instrumental in the development of ethical guidelines. After viewing the film, ask the class which ethical guidelines were violated and how, and whether the potential gains outweighed the risks.

• October Sky (1999) is the true story of a boy who is raised in a coal town in West Virginia in the 1950s. In high school, he becomes inspired by the artificial satellite Sputnik and its launch into orbit. He and a group of friends begin to build their own model rockets and use research methods to find the best metals and best fuels to include their rocket.

• Unbreakable (2000) is a film about a man who has superhuman power and strength and has lived through a catastrophic train crash. In the first quarter of the movie, there is discussion about how statistically unlikely it is that this man survived the crash.

Documentaries

• The Bigger Picture: Distributions, Variation, and Experiments (2000). This twelve-minute video uses classroom situations to gather data, present the data on graphs, and summarize the data using measures of central tendency and variation. It explains frequency distributions, measures of variability, correlation, and such experimental concepts as independent and dependent variables, experimental and control groups, hypotheses, random assignment, demand characteristics, confounds, deception, and debriefing. Insight Media, Item #PA2697, $159.00.

• Doing Great Research (1996). This sixteen-minute video illustrates key stages and methodologies of the research process. The video chronicles Mark’s attempts to grapple with the challenges of a research project. It shows how Mark identifies a topic, creates concept maps, finds a range of resources, develops recording techniques, and creates a presentation plan. Insight Media, Item #43A2602, $139.00.

• Ethics and Scientific Research (1992). This thirty-minute video addresses ethical issues faced by scientific researchers, focusing on scientific misconduct and its control. Robert L. Sprague, recipient of the AAAS Scientific Integrity and Freedom Award, discusses a case of a scientist who faked research on psychotropic drugs. Insight Media, Item #PA1451, $139.00.

• Experimental Design (1989). This two-segment, thirty-minute program distinguishes between observational studies and experiments, teaching basic principles of experimental design. It covers comparison, randomization, and replication and includes a segment that examines the question of causation. Insight Media, Item #PA921, $99.00.

• Experiments in Human Behavior (1985). This thirty-five-minute still-image video shows how psychological experiments are designed, using examples from research on prisoner–guard relationships, obedience to authority, cult behavior, and alcohol consumption. It also discusses experimenter bias and examines when to use field studies, observational studies, and questionnaires. Insight Media, Item #PA1115, $139.00.
Media Truth or Fiction (1996). Numbers are powerful persuasion tools that can be twisted to support a particular point of view. This twenty-three-minute program teaches viewers how to think critically and analyze statistics disguised as facts. “Provides excellent examples… thought-provoking.” Insight Media, Item #43A918, $129.00.

Measuring Up: An Introduction to Research Methods (1995). Using classroom situations and such graphical representations as line graphs, bar graphs, and histograms, this twelve-minute video shows how to gather, organize, summarize, and analyze data. The first section concentrates on standardized testing. The second section discusses surveys, samples, populations, sample statistics and population parameters, qualitative and quantitative data, and variables. Insight Media, Item #43A2599, $159.00.

Methodology: The Psychologist and the Experiment (1975). Using a social psychology experiment and a physiological psychology experiment as illustration, this thirty-one-minute video examines the generation of an experimental hypothesis, independent manipulation of environmental conditions, random assignment of subjects, and experimental controls. Insight Media, Item #43A308, $295.00.

Observation (1993). Showing techniques for observing children, this thirty-eight-minute video differentiates between naturalistic and subjective observations and describes the basic components of naturalistic observation. It also discusses the difficulties inherent in observing children. Insight Media, Item #PA982, $139.00.

Psychology: The Study of Human Behavior. This series introduces students to the basic content of psychology: the facts, theories, perspectives, and terminology. These thirty-minute video lessons encourage critical thinking about issues in psychology and promote an appreciation of the diversity of human beings and human behavior. The programs put students in contact with individuals who are deeply involved in the lesson’s subject and with authorities whose research has helped shape modern psychology. Coast Learning Systems, complete series: $520.

Research Methods for the Social Sciences (1995). This program examines types of experimental designs, describing when each would be most appropriate. It considers the use of control and experimental groups as well as dependent and independent variables, and it discusses clinical, correlational, and field methods. The video also details the seven steps of the scientific method and explains how to gather and interpret data. Insight Media, Item #43A624, $199.00.

Research Methods in Psychology (2001). Using examples from the violent events at Columbine High School, this 30-minute video questions whether it is possible to test for a causal link between video games and violence. It defines and discusses the application of the scientific method to psychological research and describes the tactics and limitations of descriptive, correlational, and experimental research methodologies. Insight Media, Item #43A2309, $199.00.

Research Methods Laboratory Manual for Psychology (CD-ROM) (2002). Designed to familiarize students with research methods, this CD-ROM allows students to practice hands-on research. It presents a series of chapters focused on different methodologies, provides
examples of effective utilizations of the methodologies, and includes a list of suggested projects. *Insight Media, Item #40A2605, $109.00.*

- **Statistics: Decisions Through Data (1992).** This set of three sixty-minute tapes explains when to use stem plots, histograms, and box plots; differentiates between mean and median; and teaches how to calculate standard deviation. It discusses normal curves, straight-line and exponential growth, and scatter plots. It also considers correlation and fitting lines to data. *Insight Media, Item #PA417, $299.00 on VHS or Item #PA2899, $350.00 on DVD.*

- **Statistics: For All Practical Purposes (1988).** This series of five thirty-minute videos examines the collection, organization, and analysis of data and demonstrates the use of random sampling methods. It explains how graphs, histograms, and box plots reveal changes and patterns that can then be examined in terms of mean, median, and quartile. It also covers sampling distributions, normal curves, standard deviation, expected value, the central limit theorem, and statistical inference. From Annenberg/CPB. *Insight Media, Item #30A361, $169.00.*

- **Top 101/2 Tips for Thinking Critically (1999).** Detailing a wide range of critical-thinking skills—from the identification of key points to the synthesis of information—this fifteen-minute video teaches the organizational and processing skills necessary to analysis. It shows how to generate information and how to separate beliefs and convictions from objective facts. It also discusses total recall, inquiry, creativity, and evaluation and uses graphics and dramatizations to illustrate a series of problem-solving strategies. *Insight Media, Item #PA1760, $139.00.*

- **The Unbiased Mind: Obstacles to Clear Thinking (1994).** This twenty-three-minute video prompts students to question common, but flawed, thinking habits. It shows how grouping items can lead to stereotyping and prejudice, and it examines problems that involve determining cause and effect. It explains why people equate a higher price on goods with higher quality. It also asks viewers to consider why words reflected in a mirror appear to be backward, while one’s face does not. *Insight Media, Item #PA1458, $139.00.*

- **Visual Display of Data (1994).** Offering a grounding in the visual display of statistical data, this thirty-minute video explores the applications and advantages of histograms, frequency polygons, cumulative distributions, and pie graphs. *Insight Media, Item #PA1958, $119.00.*

**Songs**

- “Blinded by Science,” *by Foreigner,* refers to how the media may distort science and, in so doing, create false panic. Lyrics include, “I’m worried by all the confusion wonder ‘bout the lies I’ve been reading.”

- “Can You Deal With It,” *by Duran Duran (1990),* suggests that someone “Live in sympathy / Use psychology to find the twist in me.”

- “Don’t Let Me Get Me,” *by Pink (2001),* asks “Doctor, doctor, won’t you please prescribe something’, a day in the life of somebody else.”
• “Highly Illogical,” by Leonard Nimoy (1993), discusses the difficulty of understanding human behavior.

• “Let’s Go Crazy,” by Prince and the Revolution (1984), talks about the “that shrink in Beverly Hills, you know the one—Dr. Everything’ll Be Alright.”

• “The Scientist,” by Coldplay, contrasts the knowledge gained through science with that gained through emotion. Offers an opportunity to discuss the difference between sciences and nonsciences.

• “Still the One,” by Shania Twain, is a song about being in love, beating the odds, and not listening to others when they say that the relationship will not work out. It emphasizes that sometimes statistics are not always right and do not pertain to every person’s situation.

• “Weird Science,” by Oingo Boingo, is a song about performing experiments and all of the materials that are used in experiments. It may be useful in discussing how scientific ideas originate and what makes a field a “science” (e.g., it is not the use of test tubes and beakers).

Web Links

Behaviorism

• B. F. Skinner: A Brief Autobiography
  http://ww2.lafayette.edu/~allanr/autobio.html
  This site contains parts of Skinner’s original autobiography.

• The B. F. Skinner Foundation
  http://www.bfskinner.org/index.asp
  This site contains a biography of Skinner, many photos, and essays on his views.

• Behaviorism, by George Graham
  http://plato.stanford.edu/entries/behaviorism/
  This site provides information and further links about behaviorism.

• Behaviorism: The Early Years, by Robert Wozniak
  http://www.brynmawr.edu/Acads/Psych/rwozniak/behaviorism.html
  This site provides further information about early years of behaviorism. It does not contain further links for more information.

• Behaviorism Tutorial, by Athabasca University
  This site provides a tutorial on behaviorism. Although it goes into more depth than students need, it is good reference material.

• Personality Theories: B. F. Skinner, by C. George Boeree
  http://www.ship.edu/~cgboeree/skinner.html
This site contains a biography and some text about Skinner’s ideas, from Boeree’s e-text on personality.

**Careers in Psychology**

- **Encyclopedia of Psychology**  
  http://www.psychology.org/links/Career/  
  This site contains numerous links about careers in psychology and making the decision to major in psychology.

- **Careers in Psychology, by Marky Lloyd**  
  http://www.psywww.com/careers/  
  This is an excellent site with multiple links on making the most of undergraduate years and job opportunities for graduate school.

- **Careers in Psychology, by APA**  
  http://www.apa.org/students/brochure/  
  This site contains the APA’s descriptions of psychological careers, graduate study, and job outlooks.

- **On-line Psychology Career Center, by Scott Plous**  
  http://www.socialpsychology.org/career.htm  
  Although focused on social psychology, this site also provides lots of general information.

  http://www.bls.gov/oco/ocos056.htm  
  This site provides job outlook information for psychologists.

- **Careers in Psychology, by Jeff McKee**  
  http://web.indstate.edu/psych/ch4.html#4A  
  Sponsored by Indiana State University, this Web site explains the marketable skills psychology majors possess.

- **Career Decision Tree for Psychology Students, by Western Kentucky University**  
  http://www.wku.edu/~kuhlenschmidt/psycareer/index.htm  
  This site helps students decide what type of career in psychology might suit them.

**Cognitive Psychology**

- **Celebrities in Cognitive Science, by the University of Colorado at Denver**  
  http://carbon.cudenver.edu/~mryder/itc_data/cogsci.html  
  This site contains a list of important players in the development of cognitive science. Each individual is linked to many sources. Highly recommended.

- **Centre for Psychology Resources: Cognitive, by Athabasca University**  
  http://psych.athabascau.ca/html/aupr/cognitive.shtml
This site contains numerous links related to cognitive psychology and cognitive neuroscience.

- **Cognitive Science (from the Stanford Encyclopedia of Philosophy)**
  http://plato.stanford.edu/entries/cognitive-science/
  This site contains a brief overview of cognitive science.

- **Center for the Neural Basis of Cognition: Integrating the Sciences of Mind and Brain**
  http://www.cnbc.cmu.edu/
  This site provides an overview of cognitive neuroscience, as well as information about current research projects.

- **Duke University Center for Cognitive Neuroscience**
  http://www.cogneurosociety.org/
  This site contains an overview of this center, as well as information about current research projects.

**Ethics**

- **APA Online: Ethics, by the APA**
  http://www.apa.org/ethics/code.html
  This site provides the APA Code of Ethics online.

- **Teaching Ethics across the Psychology Curriculum, by Deborah Ware Balogh**
  http://www.psychologicalscience.org/teaching/tips/tips_0902.html
  This site contains an online article that provides tips about teaching ethics and includes several interesting cases.

- **onlineethics.org, by Case Western Reserve**
  http://onlineethics.org/reseth/appe/vol1/justify.html
  This site discusses the use of deception by social scientists and presents several cases. Other resources are available through the site’s home page at http://onlineethics.org/reseth/index.html.

**Evolutionary Psychology**

- **Evolutionary Psychology, by University of Plymouth**
  http://salmon psy.plym.ac.uk/year3/PSY339EvolutionaryPsychology/EvolutionaryPsychology.htm
  This site contains essays on evolutionary psychology with integrated links. Highly recommended.

- **Evolutionary Psychology: A Primer, by Leda Cosmides and John Tooby**
  http://www.psych.ucsb.edu/research/cep/primer.html
  This site contains an overview of evolutionary psychology by two of the key players in that school of thought.
The Evolutionary Psychology FAQ, by Edward Hagen
This site contains answers to frequently asked questions about evolutionary psychology.

Gestalt Psychology

The Gestalt Archive, by the Society for Gestalt Theory and Its Applications
http://gestalttheory.net/archive/
This site contains original writings by several Gestalt psychologists.

The Gestalt Webpage at Sonoma State University, by Victor Daniels
http://www.sonoma.edu/users/d/daniels/Gestalt.html
This site contains links to numerous Gestalt-related sites as well as several essays.

History of Psychology (General)

A Brief History of Psychology, by Marshall University
http://www.webrenovators.com/psych/Index.htm
This site was created by graduate students as a class project and contains sketches of many of the psychological theories contained in Chapter 1.

Classics in the History of Psychology, by Christopher Green
http://psychclassics.yorku.ca/
This site contains original documents from the history of psychology. Highly recommended.

Classics in Psychology: 1855–1914 Historical Essays, by Robert Wozniak
http://www.thoemmes.com/psych/contents.htm
This site contains one- to two-page descriptions of many of the major works of psychology from 1855 to 1914.

The History of Psychology, by C. George Boeree
http://www.ship.edu/~cgboeree/historyofpsych.html
This site is an e-text on the history of psychology, from ancient Greece to the cognitive movement. Highly recommended.

The History of Psychology Website, by University of Dayton
http://elvers.stjoe.udayton.edu/history/welcome.htm
This site allows for searching for people (by birth date or alphabetically) or categories; it also contains trivia questions. Highly recommended.

Pioneers of Psychology, by Southern Baptist University
http://educ.southern.edu/tour/who/pioneers/pioneers.html
This site contains essays on many psychological pioneers, including Wundt, Koffler, Kohler, and Freud.
A Science Odyssey: People and Discoveries, by PBS
http://www.pbs.org/wgbh/aso/databank/bioindex.html
This site contains brief, one-page overviews of several prominent psychologists, including Skinner, Watson, Pavlov, and Freud.

Humanism

Association for Humanistic Psychology
http://www.ahpweb.org/
This site contains a history of the movement and related links.

Personality Theories: Abraham Maslow, by C. George Boeree
http://www.ship.edu/~cgboeree/maslow.html
This site contains a biography and some text about Skinner’s ideas, from Boeree’s e-text on personality.

Carl Rogers, by Dagmar Pescitelli
http://www.wynja.com/personality/rogersf.html
This site contains an overview of Rogers’ theory, plus links to other information (at the bottom of the site).

Mega-sites

About.com’s Psychology Guide, by Shelley Wu
http://psychology.about.com/
This site contains information on many subfields within psychology.

AlleyDog.com, by Kaufman Research & Consulting Group
http://www.alleydog.com/
This site was written specifically for undergraduate students. It contains sample lecture notes, quizzes, and numerous links.

AmoebaWeb: Psychology on the Web, by Douglas Degelman
http://www.vanguard.edu/faculty/ddegelman/amoebaweb/
This searchable Web site contains links to a wide variety of topics, including APA style, graduate school, and career preparation, as well as topical material. Highly recommended.

The beehive—bee’s Remote Psychs, by Bill Eickmeier
http://watarts.uwaterloo.ca/~bee/remotepsych.html
This Web site contains many good links, but is organized by chronological addition to the site, which sometimes makes it difficult to find desired information.

Centre for Psychological Resources, by Athabasca University
This is a comprehensive, well-organized list.
Encyclopedia of Psychology, by William Palya  
http://www.psychology.org/links/People_and_History/  
As part of a larger site, this site contains many links to sites on important people and theories.

Galaxy: Social Sciences: Psychology, by LOGIKA Corporation  
http://galaxy.einet.net/galaxy/Social-Sciences/Psychology.html  
This site contains an extensive collection of psychology-related sites, but is sometimes difficult to navigate because the topics are very broad (e.g., “mental health”).

A Guide to Psychology and Its Practice, by Raymond Lloyd Richmond  
http://www.guidetopsychology.com/  
Although the focus of this site is clinical psychology, it also contains introductory information (e.g., “What Is Psychology?”) and information relevant to learning, memory, and personality.

Introduction to Psychology, by Donelson R. Forsyth  
http://www.has.vcu.edu/psy/psy101/forsyth/psych.htm  
This site contains links to most of the chapter topics in this textbook.

MegaPsych, by John Nichols  
http://www.tulsa.oklahoma.net/~jnichols/megapsych.html  
This site contains a variety of resources, ranging from information on study skills to links to various resources. To search, follow links to MegaPsych bookmarks. The site is updated irregularly.

Psych Central, by John Grohol  
http://psychcentral.com/  
This mega-site claims to be the oldest psychology-related site on the Web. It contains an extensive directory of links, has won many awards, and is updated regularly. A related site, Enpsychlopedia (http://enpsychlopedia.com/) enables browsers to search Psych Central.

PsychScholar, by John H. Krantz  
http://psych.hanover.edu/Krantz/  
This site contains a collection of resources for students and teachers, but is not as extensive as other mega-sites.
Handout 1.1
Why Should I Study Psychology?

Ideally, you are taking this class because you really want to, not just because it fits into your schedule, you like the professor (although I hope you do!), or your friends are taking it. But, if not, take a moment to see how much you can really learn from the field of psychology.

Look at both the skills you can learn in a psychology course and the material covered. List some of the things you hope to learn here. To get some ideas, you may want to flip through your textbook (to look at all the different topics that you will be covering) or

GO SURFING…
at one of the many school Web sites that list the benefits of studying psychology.

Skills I will learn in psychology:

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________

Material I hope to learn in psychology:

1. ______________________________
2. ______________________________
3. ______________________________
4. ______________________________
5. ______________________________
Handout 1.2
Test Your Psychology IQ

Directions: Answer TRUE or FALSE to each of the following statements.

1. ______ Jet lag is worse going from Hawaii to New York than from New York to Hawaii.
2. ______ Clear evidence exists to show that a very small percentage of people can receive the thoughts of others and predict the future.
3. ______ The world’s most popular drug is alcohol.
4. ______ People use only about 10% of their brain’s capacity.
5. ______ It is extremely difficult to change a gay person’s sexual orientation through psychotherapy or other methods.
6. ______ During a full moon, people tend to commit more crimes and behave more abnormally.
7. ______ Most people accurately predicted the O. J. Simpson verdict.
8. ______ Even if two things correlate highly, it does not mean that one causes the other.
9. ______ Despite claims, hypnosis cannot really reduce the pain of surgery or childbirth.
10. ______ Inside our brains are the memories for everything we have ever heard or seen.
11. ______ It is now known that watching a great deal of TV violence creates violent people who are likely to commit crimes.
12. ______ The average IQ in the United States is only about 100.
13. ______ The moon looks much bigger on the horizon than overhead because the atmosphere acts like a magnifying glass.
14. ______ Schizophrenia means “split personality.”
15. ______ Mentally ill or retarded persons are more likely to be violent than normal people.
16. ______ Research shows that significant learning can take place if information is given repeatedly during sleep.
17. ______ As people age, they sleep less during the day.
18. ______ Through hypnosis, some people can remember things from the first six months of life.
19. ______ Most German Nazis showed evidence of severe psychiatric disorders.
20. ______ Among the range of animals, the larger the brain, generally the greater the intelligence.

Scoring: Give yourself one point for each correct answer.
Score of 1–10: You need to stay in this course.
Score of 11–15: Not too bad.
Score of 16–19: Good sophistication about psychological matters.
Score of 20: You can teach the course next semester.
Handout 1.3
Getting Acquainted

Someone who has a dog that drools.

Someone who can imagine his or her mother in her mind.

Someone who thinks that he or she understands other people’s emotions well.

Someone who is near-sighted.

Someone who is a member of a group.

Someone who knows a psychologist.

Someone who is a twin.

Someone who thinks he or she has a bad memory.

Someone who knows someone with a psychological disorder.

Someone who is color-blind.

Someone who has taken a statistics course.

Someone who has trouble sleeping.

Someone who considers himself or herself to be creative.

Someone who considers himself or herself to be an extravert.

Someone whose earliest memory is of something before age 3.

Someone who has or had a relative with Alzheimer’s disease.

Someone who can name all 50 states.

Someone who was born outside the United States.

Someone who plays competitive sports.

Someone who has a “photographic memory.”

Someone who feels happy.
Handout 1.4
PAS Scale

Instructions
Listed below are a number of statements. Each represents an opinion regarding some aspect of psychology. You will probably agree with some of these statements and disagree with others; there are no correct or incorrect answers. Read each statement carefully and indicate the extent to which you agree or disagree by circling the appropriate number in front of each statement. For example:

strongly disagree  strongly agree
1 2 3 4 5 6 7

Psychology should be a required course for college students.

If you disagreed slightly with the above statement, you would circle the number 3. If you agreed strongly with the statement, you would circle the number 7. Be sure to give your opinion on every statement.

Items

1. strongly disagree  strongly agree
1 2 3 4 5 6 7
A psychology course is an important part of any person’s college education.

2. strongly disagree  strongly agree
1 2 3 4 5 6 7
The different areas within psychology seem very unrelated to each other.

3. strongly disagree  strongly agree
1 2 3 4 5 6 7
An undergraduate degree in psychology should be a bachelor of science rather than a bachelor of arts degree.

4. strongly disagree  strongly agree
1 2 3 4 5 6 7
It’s just as important for psychology students to do experiments as it is for students in chemistry and biology.
Handout 1.4 (continued)

PAS Scale

5. strongly disagree strongly agree
   1 2 3 4 5 6 7
   An introductory psychology course should cover as broad a range of topics as possible.

6. strongly disagree strongly agree
   1 2 3 4 5 6 7
   Research conducted in controlled laboratory settings is essential for understanding everyday behavior.

7. strongly disagree strongly agree
   1 2 3 4 5 6 7
   Even though each person is unique, it is possible for science to find general laws explaining human behavior.

8. strongly disagree strongly agree
   1 2 3 4 5 6 7
   Carefully controlled research is not likely to be useful in solving psychological problems.

9. strongly disagree strongly agree
   1 2 3 4 5 6 7
   Our ability as humans to behave in any way we choose makes our attempts to predict behavior ineffective.

10. strongly disagree strongly agree
    1 2 3 4 5 6 7
    Psychological advice given in popular books and magazines is often as useful as more research-based claims.

11. strongly disagree strongly agree
    1 2 3 4 5 6 7
    Studying specific examples of how psychology is used is the most interesting part of a psychology course.
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<thead>
<tr>
<th></th>
<th>strongly disagree</th>
<th>strongly agree</th>
</tr>
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<tbody>
<tr>
<td>12</td>
<td>strongly disagree</td>
<td>strongly agree</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Government funding of experimentation is as necessary for expanding what we know about psychology as it is for gaining knowledge in areas such as chemistry and physics.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>strongly disagree</td>
<td>strongly agree</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>The study of psychology should be seen primarily as a science.</td>
<td></td>
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<tr>
<td>14</td>
<td>strongly disagree</td>
<td>strongly agree</td>
</tr>
<tr>
<td>1</td>
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<td></td>
<td>Courses in psychology place too much emphasis on research and experimentation.</td>
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<td>15</td>
<td>strongly disagree</td>
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<td>1</td>
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<td>Psychology courses should spend time covering various job possibilities for people with psychology degrees.</td>
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<td>16</td>
<td>strongly disagree</td>
<td>strongly agree</td>
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<td>1</td>
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<td></td>
<td>Psychological research can enable us to anticipate people's behavior with a high degree of accuracy.</td>
<td></td>
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<tr>
<td>17</td>
<td>strongly disagree</td>
<td>strongly agree</td>
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<tr>
<td>1</td>
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<td></td>
<td>Psychologists working as counseling professionals don’t need to be so concerned with research findings.</td>
<td></td>
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<tr>
<td>18</td>
<td>strongly disagree</td>
<td>strongly agree</td>
</tr>
<tr>
<td>1</td>
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<td>3</td>
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<td></td>
<td>Psychological theories presented in the media should not trusted unless they are supported by experiments.</td>
<td></td>
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<td>19.</td>
<td>strongly disagree</td>
<td>strongly agree</td>
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<td></td>
<td>1 2 3 4 5 6 7</td>
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<table>
<thead>
<tr>
<th>20.</th>
<th>strongly disagree</th>
<th>strongly agree</th>
<th>Students get little benefit from learning about procedures for conducting psychology experiments.</th>
</tr>
</thead>
<tbody>
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<td></td>
<td>1 2 3 4 5 6 7</td>
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Handout 1.5
Letter from Bob Sternberg, APA President

February 28, 2003

To the Editor:

The article by Carol Tavris in the February 28, 2003, issue of The Chronicle of Higher Education makes the important point that many laypeople view psychologists as of only one kind (practitioners of psychotherapy), whereas in fact there are many different kinds of psychologists. Beyond this point, the article so seriously misrepresents almost every aspect of the relationship between practicing psychologists and scientists that, as President of the American Psychological Association, I feel compelled to reply.

* The article is largely based on the logical fallacy of false dichotomy—assuming that scientists and practitioners in psychology are distinct groups. To a large extent, they are not distinct groups. Many psychologists properly view themselves as scientist-practitioners or as practitioner-scientists.

* It is not true that marketing any approach to psychotherapy is acceptable. Chocolate Immersion Therapy, for example, would be both unethical and fraudulent. Someone who engages in fraudulent psychological practice is subject to both APA ethics charges and legal action.

* The work of psychological scientists who do research and teach at colleges and universities is hardly invisible. Psychologists such as Mihalyi Csikszentmihalyi (in his studies of flow), Steven Pinker (in his studies of language development), and Martin Seligman (in his studies of learned optimism), among others, have all written best-selling books. All three, incidentally, are APA members, and Seligman is a past-president.

* It is scarcely surprising that the media would turn to practicing psychologists for advice, in that many laypeople are particularly interested in practice issues. However, the media also frequently consult psychologists in universities and other research settings. The two groups of psychologists are not in competition for media attention. There is plenty to go around.

* It simply is not the case that scientists make one set of claims, practitioners another. Rather than there being a dichotomy, the claims overlap highly. One of the beauties of science is that it is self-correcting. Science informs practice, but practice also informs science.

* There is no war between scientists and practitioners. There are certainly disagreements among certain scientists and certain practitioners about some issues. It may sound exciting to make it out to be war. It isn’t.

* The overwhelming majority of practicing psychologists are well trained, professionally competent, and equipped to give advice, whether to individuals, groups, or the media. Tavris’s column calls attention to some of the worst in psychotherapy. But to damn the field as she does would be like damning all of business because of abuses at Enron or Worldcom, or to damn all politicians because of the horrendous governments of Saddam Hussein or Joseph Stalin. Certainly, there are irresponsible people in all professions. It is inflammatory and unjust to cite them as typical.
Handout 1.5 (continued)
Letter from Bob Sternberg, APA President

* The number of scientifically trained clinicians is growing, not shrinking. Accreditation standards require that psychological practice be based on the science of psychology and that trainees have training in empirically supported procedures regardless of training model. Students in all APA-accredited programs receive such training.

* Competent practicing psychologists keep up on the science of psychology, just as competent practicing medical doctors or practicing lawyers keep up with their fields. The idea that practitioners generally do not want to be aware of scientific developments is false.

* The scientist–therapist gap is not “a done deal.” Many thousands of scientists and practitioners work together in order to advance the field of psychology. A few extremists, who seem to be the subject of Tavris’s article, do not. Tavris’s article displays what are sometimes called the availability and representativeness fallacies: It calls to mind a few notorious practitioners who are unrepresentative of the field, and presents them as though they are representative. They are not. It would be like calling to mind a few ugly airplane accidents that made the newspapers and hence are easily available to one’s long-term memory, and then assuming that such accidents are typical of what happens during air travel.

* It is not true that every year “APA does something else to rile its scientific members” or that “every year, more psychological scientists leave the APA for the APS.” The first is an invention. The second is belied by statistics, which show increasing numbers of scientists in APA. For example, the absolute numbers of general science members in APA increased from 14,736 in 1995 (17.8% of total membership) to 19,103 in 1999 (23.6% of total membership). The numbers continue to increase. Indeed, the past-president, current president, and president-elect of the American Psychological Association are all scientists! Finally, it should be noted that many people choose to be members of both APA and APS, myself included. The organizations are in no way incompatible with or hostile to each other. Quite the contrary.

* Finally, Tavris discusses the fallacy of confirmation bias—“the tendency to notice and remember evidence that confirms our beliefs or decisions, and to ignore, dismiss, or forget evidence that is discrepant.” What research shows is that everyone, scientists included, is susceptible to confirmation bias. It is a tendency we all have to fight in ourselves, Tavris included.

I have written previously in The Chronicle of Higher Education as to how wisdom is to be found in the search for a common good (“It’s not what you know, but how you use it: Teaching for wisdom,” 2002, 48[42], B20). Artificially pitting one group against another—in this case, scientists against practitioners—cannot possibly help psychologists or anyone else attain a common good. Today’s world has more than its share of useless, senseless wars. There is no need to manufacture or otherwise foment another one.

Sincerely,
Robert J. Sternberg
IBM Professor of Psychology and Education, Yale University
President, American Psychological Association

56
Handout 1.6
What Kind of Psychologist Are You?

1. Human beings are driven by __________.
   a. irrational passions
   b. external events
   c. brain-based mental processes
   d. their desire to be the best they can be
   e. instincts

2. We can learn more about humankind by studying __________.
   a. people’s dreams
   b. people’s behaviors
   c. people’s brains
   d. model humans
   e. their predecessors, animals

3. How do parents most influence their children?
   a. by causing pain, which becomes hidden and will be uncovered later
   b. by rewarding and punishing their children
   c. by providing a model for future relationships
   d. by providing a good environment to help them develop to their fullest potential
   e. by passing on their genetics

4. Humans __________.
   a. are basically aggressive people
   b. can be bad or good, depending on their environments
   c. are basically rational, reasoning beings
   d. are basically good, although some may be corrupted by bad experiences in life
   e. are basically selfish people, who are driven to reproduce

5. Mental illness __________.
   a. results from repressed pain
   b. results from negative experiences
   c. results from negative thoughts
   d. results from a person not being valued unconditionally
   e. is inborn, a result of bad genetics

6. What kind of evidence is needed to prove a psychological fact?
   a. anecdotal evidence from cases of people seeing psychologists
   b. behaviors, observed in lab settings
   c. evidence of brain functioning (e.g., from a brain scan)
   d. anecdotal evidence from cases of exceptional human beings
   e. evidence that a certain phenomenon exists in multiple cultures
The Events
On May 20, 1998, Kip Kinkel (then fifteen years old) was caught with a gun in school and expelled from school. He was taken to the police station, where his father met him. At that point, his father appeared to be fairly understanding. However, when he came home, Kip felt that his father became angry with him. According to Kip, his father told Kip how horrible he was, that he was ashamed and embarrassed because Kip had done this, and that Kip's mother and her friends were going to be very embarrassed. Shortly after this, Kip walked up behind his father and, from about ten feet away, shot his father in the head. Kip later said that he “didn’t want to. I loved my dad that’s why I had to.” His father fell to the counter. Kip, not knowing what to do, dragged his father to the bathroom and put a white sheet over him.

Kip’s mother was not home at the time that this happened. She returned to the house a few hours later. She pulled the car into the garage and the automatic garage door shut behind her. Kip was waiting for her inside the house. He told his mother that he loved her, and then he shot her. He dragged her inside the house, but she was still alive, so he told her he loved her and shot her again “so that she wouldn’t know that I killed her.” He said that he shot her to save her the embarrassment (caused by getting caught with a gun at school earlier in the day). Kip then stayed awake all night, contemplating suicide but not completing it. Forensic evidence showed that he appeared to have read a newspaper, eaten a bowl of cereal, and cleaned up blood from the murders.

He left a note at the house which said:
I have just killed my parents! I don’t know what is happening. I love my mom and dad so much. I just got two felonies on my record. My parents can’t take that! It would destroy them. The embarrassment would be too much for them. They couldn’t live with themselves. I’m so sorry. I am a horrible son. I wish I had been aborted. I destroy everything I touch. I can’t eat. I can’t sleep. I didn’t deserve them. They were wonderful people. It’s not their fault or the fault of any person, organization, or television show. My head just doesn’t work right. God damn these VOICES inside my head. I want to die. I want to be gone. But I have to kill people. I don’t know why. I am so sorry! Why did God do this to me? I have never been happy. I wish I was happy. I wish I made my mother proud. I am nothing! I tried so hard to find happiness. But you know me I hate everything. I have no other choice. What have I become? I am so sorry

The next morning, Kip put on a big overcoat. Underneath it, he hid two large knives, a rifle, and two handguns. He also had ammunition taped to his chest in case he ran out of ammunition and needed to kill himself. Kip then drove his mother’s car to school, where he opened fire in the school cafeteria, killing two students and injuring twenty-five others. After apprehending him, the police searched Kip for weapons, but missed one of the knives, which was strapped to his leg. At the police station, Kip held out this knife and attempted to charge the police officer who was interviewing him. When asked why he did this, Kip said that he had hoped that the officer would shoot him so he would die.

On September 24, 1999, Kip pled guilty to murder and attempted murder, abandoning his opportunity to be found guilty by reason of insanity. He was sentenced to 111 years in prison.
Handout 1.7 (continued)

The Story of Kip Kinkel

Background
During the sentencing trial, the defense presented several mental health experts to testify that Kip was mentally ill. One expert, Dr. Richard J. Konkol, showed an image of a scan of Kip’s brain that he said showed reduced blood flow to the frontal lobe, the area associated with emotional control and decision making. He also testified that this reduced brain activity was consistent with new research on children who become schizophrenic, and that he thought it could make Kip more susceptible to a psychotic episode. In addition, a private investigator testified that she had found numerous cases of mental illness within Kip’s family.

Another expert, Dr. Orin Bolstad, reported that several of his tests revealed that Kip had learning disorders that led to difficulty with writing and spelling. He said that other tests revealed a very depressed, alienated child who saw adults as unfair, arbitrary, and untrustworthy. In addition, Bolstad found Kip to have very low self-esteem and to be manipulative and paranoid. Bolstad also described Kip’s reports of a three-year history of auditory hallucinations and a number of delusional beliefs (e.g., that the Chinese were going to invade America).

Kip’s sister, Kristin, also testified for the defense. She reported that Kip had difficulties in school beginning in the first grade (which he had to repeat). This caused tension in his relationship with his parents, who were both teachers. The relationship between Kip and his father was particularly strained. Kristin also said that she thought Kip was lonely, in part because they lived fairly far from other children, and there was a generational gap between Kip and their parents (who were in their early forties at the time of Kip’s birth).

Kristin described her parents’ parenting style as based on disappointing them. She said that to both her and Kip, their disappointment was the worst possible punishment. She also reported that her parents worried about Kip—in particular, the friends he was hanging out with, his interest in bombs and guns, and a number of angry episodes Kip had (including rock-throwing and throwing a pencil at another student). Throughout his childhood, Kip had not been allowed to have any violent toys or to watch any violent television; thus his interest in guns was especially concerning. However, Kristin reported that she believed that Kip’s interest was not in violence, but rather in how guns and bombs work. In fact, he had spoken with her of putting this fascination to good use by being on a bomb squad. Later, however, Kip’s father tried to be supportive of Kip’s interest in guns, and to try to forge common ground between them, by helping Kip buy guns and allowing him to use them under his supervision.

Kip’s mother had been so concerned about his behavior that she took Kip to a psychologist, who had recommended Prozac, which Kip did take in the year before the murders. However, the psychologist had told them that Kip was much better and to take him off Prozac sometime before the murders.

For More Information:
- *Who is Kip Kinkel?* by PBS
  http://www.pbs.org/wgbh/pages/frontline/shows/kinkel/kip/
- “Tragedy Hits Home” by the *Register-Guard*
  http://207.189.149.131/thurston/
Handout 1.8
Psychology around the World

1. What country did you research?

2. What is the history of psychology in this country?

3. What is the public perception of the field of psychology in this country?

4. What are the priority areas for psychologists in this country?

5. Is there any prominent psychological theory or paradigm in this country? (If so, what is it?)

6. What obstacles do psychologists in this country face?

7. What guidelines are there regarding licensure in this country?
Handout 1.9
Debating Rules

Presentation of Arguments
Each side (Affirmative and Negative) will be given a certain amount of time to present its arguments.
- The Affirmative side has the Burden of Proof to prove why a certain action should be taken.
- The Negative side has the Burden of Clash. Basically, this side has to counter everything that the Affirmative side asserts.

During the presentation of your arguments:
- Always address the audience.
- Take notes on your opponent’s points.
- When not talking, be looking for new evidence.
- You can’t just say “This is my opinion . . .” or “I know of this case . . .” You must use specific evidence to support your position. That way, the opposing team has something they can argue.

Rebuttals
Each side will be given an opportunity to rebut the opposition’s case. During rebuttals, you can bring up new EVIDENCE but not new ARGUMENTS. Therefore, make sure you make all your arguments during the initial presentation of arguments.

Speaking Order and Times
1. First Affirmative Speaker: five minutes
2. First Negative Speaker: five minutes
3. Second Affirmative Speaker: five minutes
4. Second Negative Speaker: five minutes
5. Rebuttal by the First Affirmative Speaker: two minutes
6. Rebuttal by the First Negative Speaker: two minutes

Questions
It is up to the person speaking to decide whether he or she wishes to take questions. If the opposing team wishes to raise a question, they do so by raising a hand. At this point, the debater may take the question or not. Questions are not allowed in the first or last minute of a speech or during the rebuttals.

After the Debate
The judges will excuse themselves and go into another room to vote. During this time, audience members may make speeches that provide insight into the debate topic. Audience speeches should be no longer than two minutes each.

For More Information
- Tips About Debating, by World Debate Website
  http://www.debating.net/
Previous research has indicated that home-schooled students perform better academically than their schooled peers. However, few studies have yet examined how home-schooling may affect social skills. This study tackles that issue. It is being conducted to investigate the social skills of children with different educational experiences. Children’s social skills will be measured with three standard forms: the student, parent, and teacher versions of the Social Skills Rating System (SSRS). To ensure the comparability of the measures, the teacher version of the SSRS will be completed by Scout leaders, rather than teachers. These short, standardized measures require the respondent to answer “how often” certain behaviors occur. Each form takes ten to fifteen minutes to complete. In addition, parents will be asked to complete a short, demographic questionnaire asking basic information about the child and the family.
Sample Letter

(On University letterhead)

To Whom It May Concern:

My name is Marcia McKinley and I am an Assistant Professor at Mount St. Mary’s College in Emmitsburg, Maryland. I am writing to ask your help with a study that I am conducting, “Social Skills in Public-Schooled, Private-Schooled, and Home-Schooled Children.”

As I am sure you are aware, home-schooling has been growing in popularity in the United States. However, as it does, many questions are raised. Perhaps the most frequently asked questions relate to the social development of children who are home-schooled: Do they show the same social skills as children in other educational environments? Is formal schooling critical for the development of social skills? Can other social activities, such as Scouting, adequately compensate for children’s social interactions in academic settings?

Unfortunately, there has been little research completed on these topics. My study aims to answer some of these questions by comparing the social skills of children who are home-schooled, private-schooled, and public-schooled. The participation of Scout groups in this study is particularly important, as it enables control of certain variables, such as family values, parental involvement in children’s lives, and non-academic social interactions.

For this study, children’s social skills will be measured with three standard forms: the student, parent, and teacher versions of the Social Skills Rating System (SSRS). These short, standardized measures require the respondent to answer how often certain social behaviors occur. Each form takes ten to fifteen minutes to complete. In addition, you will be asked to complete a short, demographic questionnaire asking basic information about your child and the family.

Your participation is strictly voluntary. You may withdraw your participation at any time. Your decision as to whether to participate will have no effect on your child’s education. The data collected for this study will not become part of your child’s school record.

The benefits for you for participating are to increase knowledge of children’s social development. If you desire, you may speak with me individually about your children’s social development.

Please do not hesitate to contact me if you have any questions. I can be reached at work at XXX-XXX-XXXX or XXXX@XXXXX.com.

Thank you for your consideration,

Marcia J. McKinley, JD, PhD
Assistant Professor of Psychology
Chapter 1 Psychology: Yesterday and Today

Multiple-Choice Questions

1) Psychology is defined as the science of
A) human functioning.
B) mental processes and behavior.
C) brain functioning.
D) human motivation and thinking.
E) behavior problems and mental illness.
Answer: B
Diff: 1 Page Ref: 4
Topic: The Science of Psychology: Getting to Know You
Skill: Factual

2) The outwardly observable acts of an individual, alone or in a group, are referred to as
   ________.
A) behavior
B) sensations
C) mental processes
D) perceptions
E) operations
Answer: A
Diff: 1 Page Ref: 5
Topic: The Science of Psychology: Getting to Know You
Skill: Factual

3) In addition to describing and explaining mental processes and behavior, psychology also attempts to
   ________ these phenomena.
A) predict and control
B) analyze and manipulate
C) categorize and organize
D) recognize and appreciate
E) synthesize and regulate
Answer: A
Diff: 1 Page Ref: 6
Topic: The Science of Psychology: Getting to Know You
Skill: Factual

4) The three levels of analysis discussed in your text are the ________, the ________, and the
   ________.
A) person; group; culture
B) neuron; brain; person
C) brain; person; group
D) person; family; group
E) brain; body; person
5) If a manager is interested in whether drugs are to blame when attempting to account for an employee’s erratic behavior at work, then we can say that the manager is primarily concerned with which level(s) of analysis?
   A) brain
   B) physical environment
   C) person
   D) group and person
   E) brain and group
   Answer: A
   Diff: 2 Page Ref: 7
   Topic: The Science of Psychology: Getting to Know You
   Skill: Applied

6) If a psychologist is investigating test anxiety by examining the way students’ thoughts, prior to an exam, affect their feelings about the exam, the psychologist is primarily looking at events at the level of the ________.
   A) brain
   B) person
   C) group
   D) world
   E) environment
   Answer: B
   Diff: 2 Page Ref: 7
   Topic: The Science of Psychology: Getting to Know You
   Skill: Applied

7) Looking at psychological events from different levels of analysis
   A) means that it is very difficult to understand any event.
   B) necessitates that psychologists must use brain-scanning techniques to really understand people’s behavior and mental processes.
   C) illustrates how genes are destiny.
   D) helps us see how events at one level can affect events at other levels.
   E) implies that any other way of looking at events is wrong.
   Answer: D
   Diff: 2 Page Ref: 8
   Topic: The Science of Psychology: Getting to Know You
   Skill: Conceptual
8) Imagine that you are driving in a beat up car with no air conditioning on a hot summer day on the freeway. Out of nowhere, someone cuts you off. You get angry and react by honking your horn. Which of the following best describes what resulted in your behavior?
A) Events at the level of the brain affected events at the level of person.
B) Events at the level of the person affected events at the level of group.
C) Events at the level of brain affected events of the level of the group.
D) Events at the level of the group affected events at the level of the brain and person.
E) Events at the level of person affected events at the level of the physical context and brain.
Answer: B
Diff: 3 Page Ref: 7 - 8
Topic: The Science of Psychology: Getting to Know You
Skill: Applied

9) The general curiosity about why people think, feel, and behave the way they do
A) is a recent phenomenon.
B) primarily happened after World War II.
C) is about a century old.
D) is several centuries old.
E) has always probably been with us.
Answer: E
Diff: 1 Page Ref: 9
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

10) The science of psychology has its roots in the fields of _________ and _________.
A) biology; chemistry
B) chemistry; physics
C) biology; sociology
D) philosophy; theology
E) philosophy; physiology
Answer: E
Diff: 1 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

11) John Locke argued that
A) all human knowledge stems from experience.
B) most of human knowledge stems from experience.
C) very little human knowledge stems from experience.
D) most of human knowledge is with us from the day we are born.
E) some of human knowledge is with us from the day we are born.
Answer: A
Diff: 2 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual
12) Which of the following most accurately reflects the authors’ views about the influence of philosophy and physiology on present day psychology?
A) Only philosophy continues to influence psychology.
B) Philosophy continues to influence psychology more so than physiology.
C) Physiology continues to influence psychology more so than philosophy.
D) Neither philosophy nor physiology influence psychology.
E) Both disciplines, philosophy and physiology, continue to influence psychology.
Answer: E
Diff: 2 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

13) The first psychology laboratory was established by ________.
A) William James
B) Sigmund Freud
C) Charles Darwin
D) Max Wertheimer
E) Wilhelm Wundt
Answer: E
Diff: 1 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

14) ________ is usually considered the founder of scientific psychology.
A) Freud B) Maslow C) Rogers D) Watson E) Wundt
Answer: E
Diff: 1 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

15) The Structuralists were important in the history of psychology because they
A) examined consciousness and the structure of mental processes.
B) were the first to use brain-scanning techniques to learn about the structure of the brain.
C) realized the limits of introspection and focused on the structure of behaviors.
D) were strongly influenced by Charles Darwin.
E) began the cognitive revolution.
Answer: A
Diff: 1 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual
16) Which early school of psychology proposed that consciousness was made up of two types of elements, sensations and feelings?
A) Behaviorism
B) Functionalism
C) Gestalt Psychology
D) Psychodynamic Theory
E) Structuralism
Answer: E
Diff: 2 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

17) The primary research method used in structuralism was ________.
A) adaptation
B) perception
C) reinforcement
D) introspection
E) psychoanalysis
Answer: D
Diff: 1 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

18) The goal of describing rules that determine how particular sensations or feelings may occur at the same time or in sequence is most associated with which of the following schools of psychology?
A) Behaviorism
B) Cognitivism
C) Functionalism
D) Humanism
E) Structuralism
Answer: E
Diff: 1 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

19) How our minds help us function in the world around us was a primary question addressed by which early movement of psychology?
A) Behaviorism
B) Cognitivism
C) Functionalism
D) Psychoanalysis
E) Structuralism
Answer: C
Diff: 2 Page Ref: 11
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual
20) If an individual believed that why people think and feel as they do is more important than what they think and how they think, that individual would be a proponent of the _______ approach to psychology.
   A) structuralist
   B) functionalist
   C) psychodynamic
   D) Gestalt
   E) behaviorist
   Answer: B
   Diff: 3 Page Ref: 11
   Topic: Psychology Then and Now: The Evolution of a Science
   Skill: Applied

21) Gestalt psychology attempted to discover
   A) how the mind helped people adapt to the world.
   B) the overall patterns of thoughts or experiences.
   C) the basic building blocks of consciousness.
   D) the unconscious motivations for human functioning.
   E) the processes by which people interact with each other.
   Answer: B
   Diff: 2 Page Ref: 12
   Topic: Psychology Then and Now: The Evolution of a Science
   Skill: Factual

22) _______ furthered the idea that “the whole is more than the sum of its parts.”
   A) Structuralism
   B) Functionalism
   C) Behaviorism
   D) Psychoanalysis
   E) Gestalt psychology
   Answer: E
   Diff: 2 Page Ref: 12
   Topic: Psychology Then and Now: The Evolution of a Science
   Skill: Factual

23) According to Freud, unconscious thoughts
   A) simply go away.
   B) are able to be suppressed.
   C) only pertain to sex.
   D) eventually are released as thoughts, feelings, or actions.
   E) have no impact on everyday life.
   Answer: D
   Diff: 2 Page Ref: 13
   Topic: Psychology Then and Now: The Evolution of a Science
   Skill: Conceptual
24) Freud would have argued that a person who obsessively washes their hands
A) has some sort of neurological deficit.
B) is experiencing some form of conscious distress.
C) is reacting to an unacceptable unconscious sexual or aggressive impulse.
D) is angry at themselves or someone else.
E) needs to learn strategies to unlearn this behavior.
Answer: C

Diff: 2 Page Ref: 13
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

25) From a scientific perspective, a major problem with psychodynamic theory is that
A) it focuses too much on sex.
B) it is impossible to test its principles.
C) it is all wrong.
D) mental processes are hidden from awareness.
E) there is no unconscious.
Answer: B

Diff: 1 Page Ref: 13
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

26) Which school of psychology questioned whether psychologists should study hidden
mental processes?
A) psychodynamic theory
B) behaviorism
C) Gestalt psychology
D) the cognitive revolution
E) evolutionary psychology
Answer: B

Diff: 1 Page Ref: 14
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

27) ________ is closely associated with the school of behaviorism.
A) Sigmund Freud
B) William James
C) Max Wertheimer
D) B. F. Skinner
E) Wilhelm Wundt
Answer: D

Diff: 1 Page Ref: 14
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual
28) The school of behaviorism attempted to explain behavior by studying the 
A) reasons people give for their behaviors.
B) specific personality traits that lead to behavior.
C) unconscious motivations that people have for their behavior.
D) ways in which people respond to specific stimuli.
E) purposes of people’s behavior.
Answer: D
Diff: 2 Page Ref: 14
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

29) Humanistic psychology focused on the level of the 
A) brain.
B) person.
C) group.
D) brain and the group.
E) brain and the person.
Answer: B
Diff: 2 Page Ref: 15
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

30) Humanist Abraham Maslow suggests that when people self-actualize they 
A) develop to their fullest potential.
B) avoid negative consequences of behavior.
C) act upon psychological trauma.
D) seek maximum reward for all their behaviors.
E) learn from their mistakes and move on.
Answer: A
Diff: 2 Page Ref: 15
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

31) The goal of cognitive neuroscience is to 
A) discover the nature, organization, and operation of mental processes by studying the brain.
B) demonstrate that concepts like reinforcement and punishment are really irrelevant.
C) prove that psychological motivations for behavior do not originate in the brain.
D) demonstrate that human brain functioning and animal brain functioning are essentially the same.
E) show that the idea of mental processes is actually an illusion.
Answer: A
Diff: 2 Page Ref: 16
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual
32) The tension brought about by the debate concerning the study of unobservable mental processes versus the study of only observable behaviors was eased with the arrival of ________.
A) behaviorism
B) cognitive psychology
C) gestalt psychology
D) humanistic psychology
E) structuralism
Answer: B
Diff: 3 Page Ref: 15
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

33) ________ psychology, according to the authors, is a recent newcomer of psychology making its appearance in the late 1980s.
A) Behavioristic
B) Cognitive
C) Functionalistic
D) Humanistic
E) Evolutionary
Answer: E
Diff: 1 Page Ref: 16
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

34) Cultural universality, or instances of the same practice occurring in all cultures, is probably the best source of evidence, according to the authors, for ________ psychology.
A) behavioristic
B) cognitive
C) evolutionary
D) functional
E) humanistic
Answer: C
Diff: 3 Page Ref: 17
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

35) Evolutionary psychologists propose that people lie because
A) unconscious forces lead them to do so.
B) people are rewarded for doing so.
C) it helps them self-actualize.
D) doing so gave our ancestors an advantage for survival.
E) they have been lied to.
Answer: D
Diff: 2 Page Ref: 17
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual
36) Evolutionary psychology suggests that certain cognitive strategies and goals are built into the brain because
A) they help humans adapt to their natural environment.
B) human brains are similar to the brains of the higher primates.
C) they are the result of learning that has taken place over many centuries.
D) all humans, even infants, quickly learn that they are effective strategies.
E) they are the result of memories we have inherited from our ancestors.
Answer: A
Diff: 3 Page Ref: 17
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

37) Dr. Jones probably agrees with the ________ theory of psychology, since he contends that humans are intelligent species due to the fact that intelligence gives us an advantage in the natural world.
A) psychoanalytic
B) behavioral
C) cognitive
D) humanistic
E) evolutionary
Answer: E
Diff: 2 Page Ref: 17
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Applied

38) Evolutionary theories are very difficult to test chiefly because
A) they involve understanding the nature of the unconscious.
B) it is very difficult to contrast human and animal behavior.
C) we don’t exactly know what our ancestors were like and how they evolved.
D) they completely discount the importance of environmental factors.
E) there are conflicting views as to the role evolution plays in contemporary life.
Answer: C
Diff: 3 Page Ref: 17
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

39) In discussing the history of psychology as a discipline, the authors note that
A) many schools of psychology did NOT give rise to other schools.
B) many of the original schools of psychology died out.
C) many of the original schools nearly died out then returned again.
D) many of the parent schools of psychology continued to develop rather than get replaced by their descendants.
E) many of the parent schools of psychology did NOT continue to develop but rather were replaced entirely by their descendants.
Answer: D
Diff: 2 Page Ref: 18
Topic: Psychology Then and Now: The Evolution of a Science
40) Mark is receiving guidance to determine what occupation is best suited for him. Mark is most likely seeing a/an ________ psychologist.
A) clinical  
B) social  
C) cognitive  
D) counseling  
E) academic  
Answer: D  
Diff: 2 Page Ref: 20  
Topic: Psychology Then and Now: The Evolution of a Science  
Skill: Factual

41) In contrast to training for a Ph.D., training for a Psy.D. places less emphasis on ________.
A) research  
B) psychotherapy  
C) teaching methods  
D) psychological testing  
E) ethical principles  
Answer: A  
Diff: 2 Page Ref: 20  
Topic: Psychology Then and Now: The Evolution of a Science  
Skill: Factual

42) Which of the following degrees does a psychiatrist tend to hold?
A) Ph.D.  B) Psy.D.  C) Ed.D.  D) M.D.  E) M.S.W.  
Answer: D  
Diff: 2 Page Ref: 20  
Topic: Psychology Then and Now: The Evolution of a Science  
Skill: Factual

43) The primary duties of an academic psychologist are usually
A) psychotherapy and testing  
B) teaching and research  
C) administration and consultation  
D) psychotherapy and teaching  
E) administration and fundraising  
Answer: B  
Diff: 1 Page Ref: 21  
Topic: Psychology Then and Now: The Evolution of a Science  
Skill: Factual
44) If you’re conducting a study to determine how obnoxious teenagers gradually turn into mature adults, you’re doing the work of a ________ psychologist.
A) social
B) clinical
C) developmental
D) physiological
E) personality
Answer: C
Diff: 2 Page Ref: 22
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Applied

45) Dr. MacDonald investigates how various study strategies affect college students’ reading ability. Dr. MacDonald is most likely a ________ psychologist.
A) cognitive
B) developmental
C) personality
D) social
E) sport
Answer: A
Diff: 3 Page Ref: 21
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Applied

46) If you are an industrial/organizational psychologist, then you are probably focusing on issues pertaining to the
A) legal system.
B) workplace.
C) environment.
D) medical system.
E) structure of society.
Answer: B
Diff: 2 Page Ref: 22
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Applied

47) Jon, a sport psychologist, probably works to
A) handle behavioral problems.
B) teach others to play sports.
C) coach sporting events.
D) improve athletic performance.
E) build individual’s physical strength.
Answer: D
Diff: 1 Page Ref: 22
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Applied
48) ________ was the first woman President of the American Psychological Association in 1905.
A) Ursula Bellugi
B) Mary Whiton Calkins
C) Elizabeth Spelke
D) Anne Treisman
E) Margaret Floy Washburn
Answer: B
Diff: 2 Page Ref: 22
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

49) ________ percent of college graduates with psychology as their major were female according to a major survey reviewed in your text.
A) Seventeen
B) Twenty-seven
C) Fifty-seven
D) Seventy-seven
E) Ninety-seven
Answer: D
Diff: 2 Page Ref: 23
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

50) Psychology is a science because it relies on a specific type of method for allowing us to learn more about human behavior. This method is referred to as the:
A) method of inquiry.
B) method of approximation.
C) socratic method.
D) scientific method.
E) method of problem solving.
Answer: D
Diff: 1 Page Ref: 25
Topic: The Research Process
Skill: Conceptual

51) The authors note that the first step of the scientific method is:
A) observing events.
B) specifying a problem.
C) forming a hypothesis.
D) testing the hypothesis.
E) testing the theory.
Answer: B
Diff: 2 Page Ref: 25
Topic: The Research Process
Skill: Conceptual
52) The term ________ refers to careful observations or numerical measurements of a phenomenon.
A) information
B) science
C) variable
D) data
E) hypothesis
Answer: D
Diff: 1 Page Ref: 25
Topic: The Research Process
Skill: Factual

53) Sally proposes the idea that one’s sexual history prior to marriage may be linked to whether one ends up getting divorced. This best represents which step of the scientific method?
A) testing the hypothesis
B) observing events
C) forming a hypothesis
D) specifying a problem
E) formulating a theory
Answer: C
Diff: 2 Page Ref: 25
Topic: The Research Process
Skill: Applied

54) As part of a psychology experiment, Brett decides to measure a person’s “anxiety” by noting the number of blinks a person makes in a twenty minute social interaction with a stranger. Brett appears to have offered a(n) ________ of anxiety.
A) variable
B) operational definition
C) theory
D) hypothesis
E) confound
Answer: B
Diff: 2 Page Ref: 26
Topic: The Research Process
Skill: Applied

55) An interlocking set of concepts or principles that explain a set of observations is known as a(n)_______.
A) hypothesis
B) variable
C) operational definition
D) prediction
E) theory
Answer: E
Diff: 1 Page Ref: 26
56) Systematically collecting data in real-world environments that can be replicated by others is the essence of which descriptive research method?
A) case studies
B) naturalistic observation
C) surveys
D) experiments
E) correlational research
Answer: B

57) A case study examines in detail:
A) a single instance of a situation.
B) multiple instances of a situation.
C) a set of questions put to participants.
D) events that occur in a real-world setting.
E) the relationship between two variables.
Answer: A

58) Surveys, as discussed in the text, are associated most with:
A) correlational research.
B) descriptive research.
C) inferential research.
D) experimental research.
E) quasi-experimental research.
Answer: B

59) The authors note that the books “Sybil” and “The Three Faces of Eve” represent the accumulated results stemming from which research method?
A) naturalistic observational studies
B) case studies
C) surveys
D) quasi-experimental studies
E) correlational studies
Answer: B
60) According to the authors, the term “correlation” is defined as:
A) a type of descriptive research method.
B) a relationship among at least three variables.
C) a relationship in which changes in the measurements of one variable are accompanied by changes in the measurement of at least three other variables.
D) a relationship in which changes in the measurements of one variable are accompanied by changes in the measurement of at least two other variables.
E) a relationship in which changes in the measurements of one variable are accompanied by changes in the measurements of another variable.
Answer: E
Diff: 2 Page Ref: 29
Topic: The Research Process
Skill: Factual

61) Which of the following correlation coefficients represents the strongest relationship between two variables?
A) .50 B) .25 C) 0 D) -.25 E) -.75
Answer: E
Diff: 2 Page Ref: 30
Topic: The Research Process
Skill: Factual

62) Paul records data which indicate that the number of hot chocolates sold at the concession stand increases as temperature outside decreases (for example, more hot chocolates are purchased during late fall than late spring). Which of the following statements is the most accurate depiction of this finding?
A) There is a correlation between the two variables.
B) There is a strong, positive correlation between the two variables.
C) There is a weak, positive correlation between the two variables.
D) There is no correlation between the two variables.
E) There is a negative correlation between the two variables.
Answer: E
Diff: 3 Page Ref: 30
Topic: The Research Process
Skill: Factual

63) Independent variable is to dependent variable as ________.
A) effect is to confound
B) experimental is to correlation
C) experiment is to control
D) measure is to manipulate
E) manipulate is to measure
Answer: E
Diff: 2 Page Ref: 31
Topic: The Research Process
64) Dr. Keller has individuals run on a treadmill for 0, 15, or 30 minutes and then measures their self-reported mood. In this hypothetical study, the independent variable is
A) the self-reported mood.
B) the individuals who run for 15 or 30 minutes.
C) the individuals who run for 0 minutes.
D) the number of minutes individuals run on the treadmill.
E) not known based on the given information.
Answer: D
Diff: 3 Page Ref: 31
Topic: The Research Process
Skill: Applied

65) Dr. Proverse has individuals cycle on stationary bikes for 0, 10, 20, or 30 minutes after which he measures their self-reported mood. In this hypothetical study, the dependent variable is
A) the self-reported mood.
B) the individuals who do not ride on the stationary bike.
C) the number of minutes individuals ride the bike.
D) the number of individuals in the study.
E) the riding of bikes.
Answer: A
Diff: 3 Page Ref: 31
Topic: The Research Process
Skill: Applied

66) A good control group ________.
A) contains at least one confound
B) has a limited number of dependent variables
C) has a limited number of research participants
D) holds constant all variables in the experimental group except the one of interest
E) is identical to the experimental group
Answer: D
Diff: 2 Page Ref: 32
Topic: The Research Process
Skill: Conceptual

67) The process where research participants are placed, by chance, into either the experimental or control groups is known as ________.
A) random selection
B) random assignment
C) naturalistic observation
D) control condition
E) quasi-experiment
Answer: B
Diff: 1 Page Ref: 32
Topic: The Research Process
Skill: Factual

68) The key difference between an experimental and a quasi-experimental study is that the quasi-experimental study ________.
A) does not appear to be an experimental study, but it has all of the characteristics of one
B) contains an independent variable
C) has multiple dependent variables
D) does not feature random assignment
E) does not compare groups of individuals
Answer: D  
Diff: 3 Page Ref: 32  
Topic: The Research Process
Skill: Conceptual

69) Reliability refers to the:
A) validity of data.
B) values of data.
C) levels of data.
D) consistency of data.
E) measurement scales of data.
Answer: D  
Diff: 1 Page Ref: 34  
Topic: The Research Process
Skill: Factual

70) If you administer a test to a group of students and then retest them with an alternate form of the same test you should find similar scores. This finding would suggest that:
A) you have not achieved a high degree of reliability.
B) your test is fairly reliable.
C) you have achieved a high degree of validity.
D) your test has low validity.
E) your test is neither reliable nor valid.
Answer: B  
Diff: 2 Page Ref: 34  
Topic: The Research Process
Skill: Conceptual

71) An experiment is valid if:
A) it produces reliable findings.
B) its findings can be replicated.
C) if its findings are consistent across experiments.
D) if it measures what the investigator designed it to measure.
E) if its measures are both reliable and consistent across experiments.
Answer: D  
Diff: 1 Page Ref: 34  
Topic: The Research Process
Skill: Factual
72) Reliability is to validity as ________.
A) truthfulness is to consistency
B) consistency is to truthfulness
C) ideal is to better
D) constant is to changing
E) consistent is to inconsistent
Answer: B
Diff: 2 Page Ref: 34-35
Topic: The Research Process
Skill: Conceptual

73) Response bias refers to a tendency:
A) in which participants are not chosen at random
B) to respond in a particular way regardless of one’s actual beliefs
C) to purposely mislead a researcher
D) to manipulate the manner by which an individual responds to questions
E) to purposely produce invalid data
Answer: B
Diff: 1 Page Ref: 36
Topic: The Research Process
Skill: Factual

74) In filling out a questionnaire, a student responds in a consistent pattern. The pattern is as follows: 1, 2, 3, 4, 5, 1, 2, 3, 4, 5.... The student responds in this way due to his/her idiosyncratic behavior rather then due to the items for which he/she is responding to. This best illustrates which of the following forms of bias?
A) participant bias
B) experimenter expectancy bias
C) sampling bias
D) response bias
E) personal bias
Answer: D
Diff: 1 Page Ref: 36
Topic: The Research Process
Skill: Applied

75) ________ bias occurs when participants or items are not chosen at random but instead are selected so that an attribute is over- or under-represented.
A) Response
B) Reliability
C) Validity
D) Sampling
E) Personal
Answer: D
Diff: 2 Page Ref: 36
76) The fact that the horse Clever Hans was able to tap out the correct answer (with his hoof) to basic math problems is generally attributed to ________.
A) psychic powers
B) Hans’ genius ability
C) unique learning techniques
D) experimenter expectancy effects
E) reasons that are still not fully understood
Answer: D
Diff: 2 Page Ref: 37

77) ________ occur(s) when an investigator’s beliefs lead him or her to treat participants in a way that encourages them to produce the anticipated results.
A) Sampling bias
B) Response bias
C) Experimenter expectancy effects
D) A double blind design
E) Pseudopsychology
Answer: C
Diff: 1 Page Ref: 37

78) ________ refers to superstition or unsupported opinion pretending to be science.
A) Quasi-psychology
B) Mystical psychology
C) Social psychology
D) Pseudopsychology
E) Double blind psychology
Answer: D
Diff: 1 Page Ref: 38

79) Your authors conclude that ESP is:
A) unworthy of study.
B) impossible to study.
C) possible to study as long it is not an experimental study.
D) possible to study even as an experiment.
E) valid and reliable.
Answer: D
Diff: 3 Page Ref: 38
80) Why did a New York State Appeals Court thwart researchers from drawing spinal fluids from severely depressed teenagers?
A) The researchers did not have permission from the teenagers’ parents.
B) The researchers were blatantly abusing the teenagers.
C) The existing rules for treatment of children did not properly protect them from abuse by researchers.
D) The researchers did not allow participants to terminate the study if they wanted to.
E) The researchers did not properly explain the study’s goals to the participants.
Answer: C
Diff: 3 Page Ref: 39
Topic: The Research Process
Skill: Applied

81) At the end of an experiment, participants are interviewed about their experience in addition to receiving more information about the experiment. This interview and informational phase of the experiment is technically referred to as ________.
A) approval
B) debriefing
C) ethical evaluation
D) informed consent
E) support
Answer: B
Diff: 3 Page Ref: 40
Topic: The Research Process
Skill: Applied

82) Which of the following statements about IRBs is FALSE?
A) Any institution that hosts research needs to have an IRB.
B) The IRB monitors research conducted by psychologists only.
C) IRBs often include members from the local community.
D) An IRB ultimately decides whether a given study can be performed.
E) It is not uncommon for a researcher to discuss their project with an IRB.
Answer: B
Diff: 2 Page Ref: 40
Topic: The Research Process
Skill: Conceptual

83) Deceiving participants in a psychological study is
A) never allowed.
B) reluctantly allowed.
C) not addressed as an issue of concern by most IRBs.
D) allowed so long as participants will not be harmed (only).
E) allowed so long as participants will not be harmed and the knowledge gained clearly outweighs the use of dishonesty.
84) Research with animals tends to focus on ________.
A) cognition
B) social behavior
C) understanding the brain
D) developmental milestones
E) intelligent behavior
Answer: C

85) Imagine you know a therapist, Dr. McClure, very well, and she has created a new type of therapy to treat anxiety. You have not been formally trained in this new type of therapy. Should you use her therapy with your clients?
A) Absolutely.
B) Only if your client gives their informed consent.
C) Only if you debrief your client about the therapy.
D) Only if you consult a fellow psychologist about the matter and they give their approval.
E) Absolutely not.
Answer: E

86) If you’re a psychologist, what should you do if you have a client who says “I just feel like strangling my boss”?
A) Keep your client’s feelings in confidence.
B) Call the proper authorities.
C) Notify your client’s boss immediately.
D) Make a determination as to whether the patient can and will follow through.
E) Just go with your “gut-level” feeling.
Answer: D

87) A psychologist-client sexual relationship is
A) allowed assuming the client is not a minor.
B) allowed assuming the client is not a minor and gives informed consent.
C) allowed assuming the client is not a minor, gives informed consent, and is debriefed.
D) unethical.
E) unethical only in certain areas of the United States.
88) Neuroethics, a branch of ethics, focuses on
A) the possible benefits of research looking at the level of the person.
B) the possible risks and benefits of research looking at the level of the group.
C) the possible benefits of research looking at both the level of the person and the group.
D) the possible risks and benefits of research looking at both the level of the person and the group.
E) the possible risks and benefits of research looking at the level of the brain.
Answer: E

89) Which of the following is representative of a neuroethical issue?
A) Using interviews of friends and family of job applicants to determine whether applicants are suitable job candidates.
B) Using truth serum on friends and family of job applicants to determine whether applicants are suitable job candidates.
C) Using finger printing techniques to determine whether one is a suitable job candidate.
D) Using personality profiles to determine whether one is a suitable job candidate.
E) Using brain scanning techniques to determine whether one is a suitable job candidate.
Answer: E

True/False Questions

90) Psychology is the science of mental processes and behavior.
Answer: TRUE

91) The three levels of analysis in psychology are society, culture, and the person.
Answer: FALSE

92) At the level of the brain, psychologists mainly focus on physiological factors.
Answer: TRUE
93) Events at different levels (of analysis) are constantly interacting.
Answer: TRUE
Diff: 2 Page Ref: 8
Topic: The Science of Psychology: Getting to Know You
Skill: Conceptual

94) The philosopher John Locke stressed that all human knowledge arises from experience of the world and reflection about it.
Answer: TRUE
Diff: 2 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

95) Wundt conceptualized consciousness into sensations and feelings.
Answer: TRUE
Diff: 2 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

96) In the phrase “survival of the fittest,” the fittest are those who are the strongest.
Answer: FALSE
Diff: 2 Page Ref: 11
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

97) The emphasis of overall patterns of thoughts and experiences is central to Gestalt psychology.
Answer: TRUE
Diff: 2 Page Ref: 12
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

98) According to Freud, unconscious thoughts simply disappear in time.
Answer: FALSE
Diff: 2 Page Ref: 13
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

99) If your professor declares “There’s no worth in studying mental processes to further psychology’s progress,” then he probably is a behaviorist in the tradition of B. F. Skinner.
Answer: TRUE
Diff: 2 Page Ref: 14
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Applied
100) Dianne, who has bulimia, is most likely seeing a clinical neuropsychologist for treatment.
Answer: FALSE
Diff: 1 Page Ref: 20
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Applied

101) A developmental psychologist is interested in how various facets of human behavior develop with age and experience.
Answer: TRUE
Diff: 1 Page Ref: 21
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

102) An applied psychologist may hold either a Ph.D. or a master’s degree.
Answer: TRUE
Diff: 1 Page Ref: 22
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

103) Psychology is a science because it relies on a specific type of method of inquiry.
Answer: TRUE
Diff: 1 Page Ref: 24
Topic: The Research Process
Skill: Factual

104) A good theory is one that can be rejected if its predictions are not confirmed.
Answer: TRUE
Diff: 2 Page Ref: 26
Topic: The Research Process
Skill: Conceptual

105) A case study is a descriptive research method.
Answer: TRUE
Diff: 2 Page Ref: 28
Topic: The Research Process
Skill: Applied

106) The value of surveys can be limited in that people may not provide accurate results.
Answer: TRUE
Diff: 2 Page Ref: 29
Topic: The Research Process
Skill: Conceptual

107) The dependent variable represents the variable the experimenter manipulates.
Answer: FALSE
Diff: 2 Page Ref: 31
Topic: The Research Process
Skill: Conceptual

108) A confounding variable insures that there is a reliable effect of the independent on the dependent variable.
Answer: FALSE
Diff: 3 Page Ref: 31

109) Random selection refers to placing participants into experimental groups by chance.
Answer: FALSE
Diff: 2 Page Ref: 32

110) Dr. Waxner wants to compare the health habits of smokers and non-smokers. As such, she should probably use a quasi-experimental design.
Answer: TRUE
Diff: 2 Page Ref: 32

111) An Institutional Review Board (IRB) looks out for the welfare of those participating in research.
Answer: TRUE
Diff: 2 Page Ref: 40

112) You have learned a new therapy for treating anxiety attacks by reading journal articles. By doing this reading, you are safeguarded by the APA guidelines to now practice this therapy.
Answer: FALSE
Diff: 2 Page Ref: 41

113) Neuroethics is a branch of ethics with focus on the possible dangers and benefits of research on the brain.
Answer: TRUE
Diff: 1 Page Ref: 42
Short Answer Questions

114) List the three key ideas emphasized in the definition of psychology then briefly describe each.
Answer: Science - to know; mental processes - thinking; behavior - observable acts.
Diff: 2 Page Ref: 4
Topic: The Science of Psychology: Getting to Know You
Skill: Conceptual

115) List the three levels of analysis.
Answer: Brain, Person, Group
Diff: 1 Page Ref: 6
Topic: The Science of Psychology: Getting to Know You
Skill: Factual

116) List and describe psychology’s parent disciplines.
Answer: philosophy - use of logic and speculation to understand the world; physiology – study of biological factors
Diff: 2 Page Ref: 10
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

117) The functionalists were strongly influenced by whom and briefly describe why?
Answer: Charles Darwin - functionalists were interested in how our mind allows us to adapt to the world around us. Darwin’s theory was applied to mental characteristics.
Diff: 2 Page Ref: 11
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

118) The phrase, “the whole is greater than sum of its parts,” is most closely associated with which early school of psychology?
Answer: Gestalt
Diff: 1 Page Ref: 12
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

119) What is the key idea of Freud’s psychodynamic theory?
Answer: Behavior is driven by a collection of mental processes.
Diff: 2 Page Ref: 13
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Factual

120) What is the difference between a reinforcement and a punishment?
Answer: A reinforcement strengthens the likelihood that a given behavior will occur again, whereas a punishment decreases this likelihood.
Diff: 1 Page Ref: 14
Topic: The Science of Psychology: Getting to Know You
121) What is the goal of cognitive psychology?
Answer: To characterize the nature of human information processing or the way information is stored and operated internally.
Diff: 2 Page Ref: 15
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

122) How does contemporary evolutionary thought differ from earlier evolutionary theories?
Answer: Instead of proposing that evolution has selected specific behavior per se, current theorists believe that general cognitive strategies and goals are inborn.
Diff: 3 Page Ref: 17
Topic: Psychology Then and Now: The Evolution of a Science
Skill: Conceptual

123) If Eve provides psychotherapy and is trained to administer and interpret psychological tests, then what type of psychologist is she?
Answer: a clinical psychologist
Diff: 1 Page Ref: 19
Topic: The Psychological Way: What Today’s Psychologists Do
Skill: Applied

124) How might an academic psychologists schedule at a large state university differ at a smaller college?
Answer: At a smaller college, there would likely be more of an emphasis on teaching rather than research.
Diff: 2 Page Ref: 21
Topic: The Psychological Way: What Today’s Psychologists Do
Skill: Applied

125) Define “scientific method” and describe what it allows psychologists to accomplish in principle.
Answer: Scientific method is a way to gather facts that lead to the the formulation and validation of a theory. In principle it allows psychologists to discover characteristics that predict, or understand better, human behavior.
Diff: 2 Page Ref: 24
Topic: The Research Process
Skill: Factual

126) List and describe three descriptive research methods.
Answer: Naturalistic Observation: collecting data in a naturalistic environment rather than a lab. Case Studies: focusing on a single issue in detail. Surveys: set of questions used to assess others’ beliefs, attitudes, preferences or activities.
Diff: 2 Page Ref: 28
Topic: The Research Process
Skill: Factual
127) What would be an example of a negative correlational relationship between two variables?
Answer: The example should be consistent with the following: Values on one variable are inversely related to values on another variable. As values on one variable increase, you see a corresponding decrease in scores on the other variable. For example, as it gets colder outside (decrease in temperature), you should see a corresponding increase in amount of clothing people wear.

Diff: 2 Page Ref: 30
Topic: The Research Process
Skill: Applied

128) What’s the major difference between experimental and control conditions?
Answer: The control condition serves as a comparison condition for the experimental condition. The control condition does not involve using the ‘treatment’ or manipulation of a given independent variable.

Diff: 2 Page Ref: 31
Topic: The Research Process
Skill: Applied

129) Give an example of a variable that cannot be manipulated. What type of research is recommended when such occurs?
Answer: Anything that people cannot be randomly assigned to (e.g., sex of male or female). Recommended research method would be quasi-experimental.

Diff: 2 Page Ref: 32
Topic: The Research Process
Skill: Applied

130) Who is ‘blind’ in a double-blind study? And, what does ‘blind’ really mean?
Answer: Both the experimenter and participants are ‘blind.’ ‘Blind’ means that one does not know the purpose of an experiment.

Diff: 2 Page Ref: 37
Topic: The Research Process
Skill: Conceptual

Essay Questions

131) Imagine that you are driving a car on the highway. Another car swerves in front of you without any warning causing you to slam on your brakes. You are upset and repeatedly honk your horn. Explain your behavior (reaction to getting cut off) in terms of the three levels of analysis.

Answer: Level of the brain - functioning of the brain underlies all behavior; braking and honking your horn required brain to send messages to foot and hand. Level of the person – your thoughts about the individual more than likely being negative. Level of the group - norms that dictate “rules of the road” were violated since the person did not signal. Interaction among all three as well.

Diff: 2 Page Ref: 6
132) Briefly summarize the essence of Freud’s psychodynamic theory.

Answer: The term refers to the continual push-and-pull interactions among conscious and unconscious forces. Freud believed that these interactions produced abnormal behaviors; these behaviors ultimately could be traced to unacceptable unconscious sexual or aggressive impulses bubbling up to consciousness.

Diff: 2 Page Ref: 13

133) Briefly contrast the early schools of psychology (structuralism, functionalism, and psychodynamic psychology) with behaviorism.

Answer: All of the early schools of psychology sought to understand the mind by studying mental processes. This notion, studying mental processes, is in stark contrast to that upheld by behaviorism. Behaviorists sought to understand people (and animals) by studying observable behaviors.

Diff: 3 Page Ref: 10-15

134) Define the scientific method and note its six basic steps (in the order in which they are intended to occur).

Answer: The scientific method is a way to gather facts that will lead to the formulation and validation of a theory. It involves specifying a problem; systematically observing events; forming a hypothesis of the relation between variables; testing the hypothesis; collecting new observations to test the hypothesis; using such evidence to formulate and support a theory; and finally, testing the theory.

Diff: 2 Page Ref: 24-25

135) Briefly discuss the three plausible outcomes of a correlational study.

Answer: When conducting such a study, there may be a positive relationship (such that as one variable increases, so does the other one), a negative relationship (such that as one variable increases, the other decreases), or no relationship (such that the variables do not vary together).

Diff: 2 Page Ref: 29
136) Suppose Professor Harris places randomly assigned mice to complete a maze with three different groups of music: classical playing, hard rock playing, and no music. Professor notes how long it takes the mice to complete the maze. State the independent and dependent variable(s) and the experimental and control group(s).

Answer: The independent variable is the condition of music; the dependent variable is the amount of time it takes to complete the maze. There are two experimental groups: the mice who run around with classical music playing versus hard rock music; the control group pertains to the mice who run the maze without any music.

.Diff: 3 Page Ref: 31
.Topic: The Research Process
.Skill: Applied
Psychology: Yesterday and Today

What Is Psychology?

- Psychology is the science of mental processes and behavior.
  - What is science?
  - What are mental processes?
  - What is behavior?
Levels of Analysis

The brain

The person

The group

The Evolution of a Science

- Structuralism
  - Wilhelm Wundt & Edward Titchener (student of Wundt)
  - Focused on identifying the "building blocks" of consciousness
  - Introspection: Looking within
    - Not objectively verifiable

The Evolution of a Science

- Functionalism
  - William James
  - Influenced by Charles Darwin
    - Studied how consciousness helped an individual survive and adapt to an environment
    - Animal observations provide clues for human behavior
  - Focused on pragmatic issues such as improving education
The Evolution of a Science

- Gestalt Psychology
  - Max Wertheimer
  - Focused on consciousness and principles of perceptual organization
    - The whole is greater than the sum of its parts

The Evolution of a Science

- Psychodynamic Theory
  - Sigmund Freud
  - The mind has separate components:
    - Conscious and unconscious
  - Much of behavior is influenced by the unconscious
  - Psychoanalysis

The Evolution of a Science

- Behaviorism
  - John Watson & B. F. Skinner
  - The mind cannot be observed
  - Behavior can be observed
  - Science should study the observable
  - Reinforcement
  - Stimulus-response
The Evolution of a Science

- Humanistic Psychology
  - Carl Rogers & Abraham Maslow
  - Client-centered therapy
  - We strive for self-actualization

The Evolution of a Science

- The Cognitive Revolution
  - Alan Newell & Herbert Simon
  - Focus on mental processes (information processing)
  - Computer metaphor
  - Cognitive neuroscience

The Evolution of a Science

- Evolutionary psychology
  - Lida Cosmides, John Tooby, David Buss, & Steven Pinker
  - Evolutionarily successful cognitive strategies and goals survived
  - Cultural universality
What Psychologists Do

- Clinical psychology
  - Psychotherapy
  - Clinical neuropsychology
  - Psychological testing
- Counseling psychology
  - Helping people with issues we all face
  - Career counseling
  - Vocational testing
- Psychologist vs. Psychiatrist

What Psychologists Do

- Academic Psychologists
  - Teach classes
  - Conduct research
  - Main Types:
    - Clinical
    - Cognitive
    - Developmental
    - Social
    - Physiological

What Psychologists Do

- Applied Psychologists
  - Solve problems in practical areas
  - Main Types:
    - Developmental
    - Human factors
    - Industrial/organizational
    - Personality
    - Social
    - Sport
    - School
The Scientific Method

- What are the components of the scientific method?
  - Specify a problem
  - Systematic observation
  - Data
  - Replication
  - Form a hypothesis
  - Test the hypothesis
  - Operational definition
  - Formulate a theory
  - Test the theory

Descriptive Research

- Naturalistic observation
  - Allows one to see patterns in the real world
- Case studies
  - Focus on a single interesting case in detail
- Surveys
  - A set of questions put to a number of participants about their beliefs, attitudes, preferences, or activities

Correlational Research

Studies where the relationships between two or more variables are measured but not manipulated

- Examples:
  - Family income and IQ score
  - Height and shoe size
  - MAO levels and thrill seeking
Correlation

**Strength and direction**

- Positive Correlation: Between 0 and 1.0
- Negative Correlation: Between 0 and -1.0
- Zero Correlation

Examples:
- Amount of practice allowed
- Participants randomly assigned so that they receive a drug or placebo
- Visual or auditory stimuli present
- Temperature of room

Designing Experiments: Independent Variable

The aspect of a situation that is intentionally varied while another aspect is measured

**Examples:**
- Amount of practice allowed
- Participants randomly assigned so that they receive a drug or placebo
- Visual or auditory stimuli present
- Temperature of room

Designing Experiments: Dependent Variable

The aspect of a situation that is measured while the independent variable is changed

**Examples:**
- Number of words recalled
- Speed of response
- Number of cigarettes smoked
- Electrical activity in the brain
Designing Experiments: Effects

The difference in the dependent variable that is due to changes in the independent variable

- Examples:
  - Drug X impairs short-term memory.
  - Visualization improves athletic performance.
  - Practice improves reading speed.

Experiments

- Experimental group
- Control group
- Random assignment
- Strength
  - Rigorous control, causal inferences
- Weakness
  - Not all variables can be manipulated

Quasi-Experiments

- Like experiments, but without random assignment
- Strength
  - Real-world phenomena that cannot be studied in experiments
- Weakness
  - Lack of control means limited causal inferences
Being a Critical Consumer

- Reliability
- Validity
  - Face validity
  - Content validity
  - Criterion validity
  - Construct validity

Bias and Expectation

- Response bias
- Sampling bias
- Experimenter expectancy effects
  - Double-blind design

Pseudopsychology

- Unsupported opinion pretending to be psychological science
- What makes a discipline a science?
  - Is it the topic of study?
  - Is it the method of study?
- Examples
  - ESP
  - Astrology
### Ethics in Research
- Institutional Review Board (IRB)
- Research with people
  - Informed consent
  - Avoid deception unless necessary
  - Debriefing
- Research with animals
  - Avoid mistreatment
  - Proper housing

### Ethics in Clinical Practice
- Proper training and supervision
- Maintain privacy
- APA code of conduct
  - Beneficence and nonmaleficence
  - Fidelity and responsibility
  - Integrity
  - Justice
  - Respect for people’s rights and dignity

### Ethics in Neuroscience
- Neuroethics
- New issues for psychological research
  - Giving a “docility” drug to prisoners?
  - Brain scans as lie detectors?
  - Brain scans for prediction
    - Violent tendencies?
    - Scholastic success?
    - Employment?
# Chapter 2
## The Biology of Mind and Behavior:
The Brain in Action

### Chapter at a Glance

<table>
<thead>
<tr>
<th>Detailed Outline</th>
<th>Instructors’ Resources</th>
<th>Print Supplements</th>
<th>Media Supplements</th>
<th>Professor Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brain Circuits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Neurotransmitters and Neuromodulators</td>
<td>Extensions 2.1–2.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Glial Cells</td>
<td>Activities 2.1–2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>The Nervous System</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ The Peripheral Nervous System</td>
<td>Objective 2.5</td>
<td>Grade Aid exercises and practice tests; Testbank questions 18-29, 93-96, 109-110, 116-117</td>
<td>Transparencies 23-33, 35, 37</td>
<td></td>
</tr>
<tr>
<td>▪ The Central Nervous System</td>
<td>Extensions 2.3–2.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ The Cerebral Cortex</td>
<td>Activities 2.5–2.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spotlight on the Brain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ The Cerebral Cortex</td>
<td>Objectives 2.6–2.8</td>
<td>Grade Aid exercises and practice tests; Testbank questions 30-64, 97-103, 111-114</td>
<td>Insights, vol. I, clip 3; Insights, vol. III, module 3, clips 1-2; Insights, vol. III, module 5, clips 1-2</td>
<td></td>
</tr>
<tr>
<td>▪ The Dual Brain</td>
<td>Extensions 2.8–2.10</td>
<td></td>
<td></td>
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<td>▪ Beneath the Cortex</td>
<td>Activities 2.7–2.9</td>
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<td>▪ The Neuroendocrine and Neuroimmune Systems</td>
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<td><strong>Probing the Brain</strong></td>
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<td>▪ The Damaged Brain</td>
<td>Objective 2.9</td>
<td>Grade Aid exercises and practice tests; Testbank questions 65-74, 104-106, 115</td>
<td>Transparency 36</td>
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<td>▪ Recording Techniques</td>
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<td><strong>Genes, Brain, and Environment</strong></td>
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<td>▪ Genes as Blueprints</td>
<td>Objectives 2.10–2.11</td>
<td>Grade Aid exercises and practice tests; Testbank questions 75-89, 119-121</td>
<td>Transparency 16, 38; Insights, vol. III, module 1, clips 1-3</td>
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<td>▪ Evolution and the Brain</td>
<td>Handouts 2.1–2.2</td>
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105