Solutions for Essentials Of Understanding Psychology 6th Edition by Feldman

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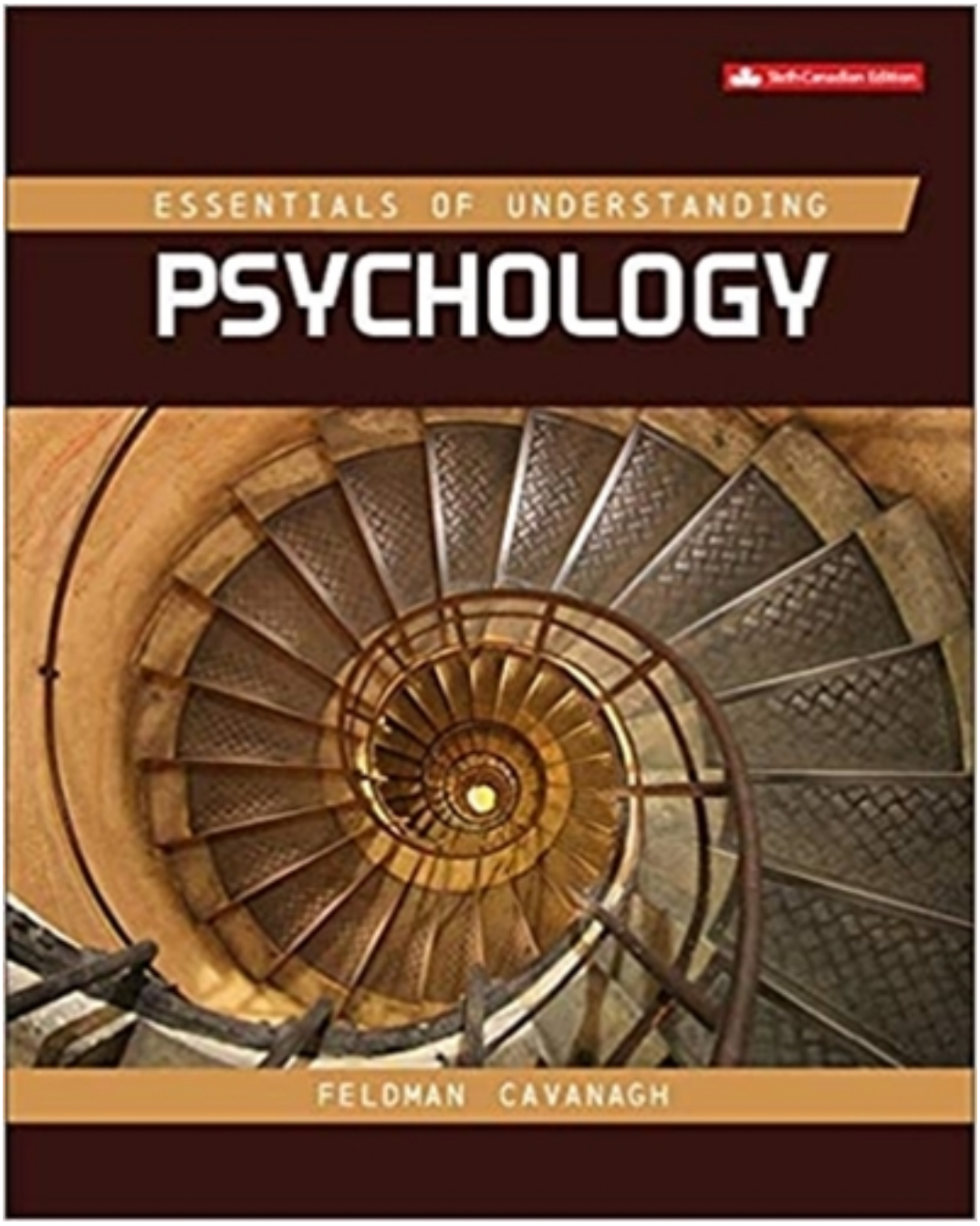


Solutions

CHAPTER 1 INTRODUCTION TO PSYCHOLOGY

LECTURE OPENER SUGGESTIONS:

Opening artworks:
Rene Magritte (1898–1967), *The False Mirror* (1935)
Georges Seurat (1851–1891), *Sunday Afternoon on the Island of la Grande Jette* (1886)

Opening quotes:
"I have not failed. I have just found 10,000 things that do not work." Thomas Edison, 1847–1931
"We know what we are but not what we may be." Shakespeare, *Hamlet* (spoken by Ophelia)

OPENING THEMES
This lecture covers the orienting themes of the course: what is psychology? What are the subfields of psychology? What jobs are available in the field of psychology? What is the history of psychology? Topics covered in these opening lectures set the stage for the entire course.

The scientific method is central to understanding the field today. Although it may seem as though these topics are not really "about" psychology, without a scientific approach, psychology would be no different than the pseudo-sciences that are propagated in the media.

MODULE 1: PSYCHOLOGISTS AT WORK
THE SCIENCE OF PSYCHOLOGY
WORKING AT PSYCHOLOGY

KEY CONCEPTS:
Key Concept 1–1: What is the science of psychology?
Key Concept 1–2: Where do psychologists work?

At the end of this module, students should be able to:
1–1 Define psychology, including its scope, goals, and methods.
1–4 Identify the significant demographic trends of the profession, including place of employment, international and gender distribution, and educational background.

Student Assignments

The Science of Psychology
Have students answer these questions about the science of psychology:
1. Do you agree that psychology is a science? Why or why not?
2. What does it mean to be able to "predict" behaviour? Is it ever possible to know in advance how another person will behave?
3. What makes psychology unique among the social sciences?

Working at Psychology

Have students complete Handout 1–1, Working at Psychology.

Lecture Ideas:

The Science of Psychology
Emphasize that psychologists attempt to describe, predict and explain behaviour. Many psychologists see their role as that of helping others change and improve their lives. All psychologists use scientific methods to find answers to questions about the causes of behaviour.

Working at Psychology
Students are interested in learning where psychologists work. Students would most likely guess that the majority of psychologists are engaged in private practice but challenge them to think about the roles that psychologists serve in other settings, such as research, the schools, business, and hospitals.

Many students have been told that they cannot expect to find a job unless they go on to graduate school and earn a master's or doctorate degree. Yet, students will be pleased to learn that they may earn entry-level positions with a bachelor's degree or college diploma. If this is the case, students would be interested in learning that there are jobs for which they can qualify for with a bachelor's degree or a college diploma in the field. You also may wish to discuss the factors accounting for the success of these students in qualifying for these jobs, such as having participated in field placements, internships, or research. You may wish to research job postings that require a diploma or bachelor's degree in the field, such as Instructor Therapist, Group Home Worker, Community Inclusion Facilitator, or Special Needs Assistant. Students are also interested to learn that psychology is often a recommended or required course for many programs that prepare students to interface with the public, such as Nursing, Police Foundations, and Social Work. In addition, the principles of psychology will serve students well whenever they are interacting with others in a professional setting, whether as a camp counsellor or retail worker.

Current Issues Facing Psychologists
Describe current issues facing psychologists regarding insurance, health maintenance organizations, and prescription privileges. Ask whether students believe that psychologists should be allowed to prescribe medication or whether this role is best left to psychiatrists (and why).

Media Presentation Ideas:

Popular Movie or Television Show: Portrayal of Psychologists in the Media
There are numerous movies and television shows portraying psychologists. Choose one that is relatively recent and likely to be of interest to your students. You also might consider showing an episode from Dr. Phil's television program as a stimulus to discussion of the topic. Possible discussion questions would include: (1) Do you believe that the psychologist is portrayed in a realistic light? Why or why not? (2) How would each psychological perspective explain the main character's symptoms or issues? (3) What is the impression of psychotherapy that is conveyed in this scene?

Educational and Public Information Materials
Obtain educational and public information materials from CPA http://www.cpa.ca/
Other educational videos illustrating the work of psychologists can be obtained from the Discovery Health Channel, the Science Channel, the Learning Channel, and PBS.

Popular Movie or Television Show: Psychologists at Work
Show a movie or television show that illustrates the work of a psychologist from one or more of the disciplines. Most movies that depict psychologists show clinical psychologists, but there are some that go beyond to the broader range. For example, *Criminal Minds* and *CSI* typically feature forensic psychologists. Other examples can come from television news programs featuring the results of researchers in particular areas, such as child development or behavioural neuroscience. Look out for possible programs to use via Public Broadcasting System (PBS), Discovery Channel (including Discovery Health and the Science Channel), and the network news magazines, such as *Dateline NBC, 20/20, Prime Time,* and *60 Minutes.* One-time use of these for educational purposes does not violate copyright law.

Popular Movie or Television Show: The Workplaces of Psychologists
As noted above, popular television shows, movies, and documentaries can serve as the basis for illustrating the workplaces in which psychologists can be found. CPA http://www.cpa.ca/ also has educational materials available on careers in psychology.

MODULE 2: A SCIENCE EVOLVES: PAST, PRESENT, AND FUTURE

The Roots of Psychology
Historical Perspectives: What Has Stood the Test of Time?
Key Contributors: Sigmund Freud
Applying Psychology in the Real World: Psychology Matters
The Subfields of Psychology: Psychology's Family Tree
Psychology's Future: Expanding Psychology's Frontiers
Indigenous Perspectives: What Does Indigenous Mean?

KEY CONCEPTS
Key Concept 2–1: What are the origins of psychology?
Key Concept 2–2: How did the history of psychology shape the major approaches in contemporary psychology?
Key Concept 2-3: What are the important subfields in the field of psychology?

At the end of this module students should be able to:
2–1 Discuss the history of the science of psychology and the approaches taken by early psychologists.
2–2 Name and outline the key characteristics of the historical perspectives that have best stood the test of time and that have shaped current approaches in the field.
2–3 Name and describe the different subfields of psychology and distinguish between them by giving examples of the work and workers in each field.
2–4 Identify and describe two newer fields of psychology.

Student Assignments

Psychology's Family Tree
Have students complete Handout 1–2, Psychology's Family Tree.

Psychology Myths and Facts
Have students complete Handout 1–4, Survey on Facts about Psychology.

Lecture Ideas:

History of Psychology (see biographies below for additional information)
Using the timeline as a lecture tool (copy it onto an overhead or PowerPoint slide), highlight the events in the history of psychology that you regard as the most important. Some of the more interesting events to discuss are:

- **500,000 BC: trephining to allow the escape of evil spirits.** Emphasize that this method is still used in some areas around the world, particularly in agricultural, developing societies.
- **430 BC: Hippocrates argues for four temperaments of personality.** Current theories of personality propose that there are five basic temperaments; these are still very similar to those proposed by Hippocrates, and even though personality is not controlled by bodily "fluids," hormones and neurotransmitters are now known to have important influences on behaviour.
- **1689 AD: John Locke introduces idea of tabula rasa.** Are we born as a "blank slate"? Does our behaviour reflect entirely our upbringing? (related to the nature-nurture issue discussed below). John Locke was an important early advocate of the behaviourist perspective.
- **1807: Franz Josef Gall proposes phrenology.** The idea that bumps on the skull reflect personality was a fascinating, although inaccurate, attempt to explain variations in human behaviour. Some students may have seen the "Phrenology Head" by L.M. Fowler, a white china head with markings corresponding to the main areas of personality and intelligence. Illustrate this discussion with a picture of one (many are available on the Web). My joke about this is that in the days of phrenology, you could get your hair done and receive psychotherapy at the same time!
- **1879: Wilhelm Wundt inaugurates first psychology laboratory in Leipzig, Germany.** This is a major event to highlight, as it is the beginnings of psychology as a formal science. Contrast structuralism with functionalism. See below for an activity involving introspection.
- **1895: Functionalism model formulated.** Emphasize as development of model that challenged structuralism. Talk about the importance of William James in American psychology. See below for how to contrast structuralism with functionalism.

Also point to the development of psychoanalysis, behaviourism, humanistic, and cognitive perspectives, but these can be discussed as separate perspectives in psychology (see below).

- **1905: Mary Calkins works on memory.** Calkins also was the first woman president of the American Psychological Association. She invented the paired associate technique. Having been refused a Ph.D. from Harvard (she was offered one from Radcliffe which she declined), she became an ardent spokeswoman for women's rights, including the right to vote.

- **1928: Leta Stetter Hollingworth publishes work on adolescence.** In addition to making contributions to the psychology of women in the early part of the 20th century, Hollingworth was known for her work on gifted children, children with "mental defects," and adolescents. Her text on adolescence replaced that of G. Stanley Hall and became the leading work in the field until the late 1940s.

Helpful Hints for Students:
Students have a great deal of difficulty understanding the difference between structuralism and functionalism. I help them remember that "F" (for functionalism) comes before "S" (for structuralism), just as "J" (for James) comes before "W" (for Wundt).

Biography of William James (from Pettijohn's "Connectext")
William James was born in New York City in 1842. He was the son of wealthy parents whose enthusiasm for their children's education sent young James traveling throughout Europe. His formative years were spent in the best schools of France, Germany, Switzerland, and the United States. He vacillated from one interest to another, studying painting, chemistry, biology, and medicine. In 1869 he received a medical degree from Harvard University. Finally, at the age of 30, he accepted the teaching position at Harvard that launched his outstanding career in psychology. In 1875 James established one of the first psychology demonstration teaching laboratories in the world at Harvard. Three years later, at the age of 36, he married a Boston schoolteacher and began writing his most famous work, *Principles of Psychology*, which, to his publisher's dismay, took him almost 12 years to complete. James enjoyed great popularity as a lecturer at Harvard and was remembered by students as a vivacious personality whose extravagant sense of humor and picturesque language set him apart from the typical professor. His interests were tremendously varied: he wrote about topics such as habit, consciousness, personality, emotion, and religion. James continued to write, lecture, and travel until his death in 1910 at his country home in New Hampshire.

Introspection Exercise (can also be made into a student assignment):
Read this to the class:
Wilhelm Wundt founded the first formal psychology laboratory in Leipzig, Germany, in 1879, the date now considered to be the beginning of the science of psychology. A physician and physiologist, Wundt conducted experiments intended to identify the basic nature of human consciousness and experience. His focus of research was on the senses of vision, touch, and the passage of time; other topics studied in his laboratory included attention, emotion, and memory.

The approach associated with Wundt is structuralism, which seeks to describe the basic building blocks or "structure" of consciousness. The main technique used by Wundt and his colleagues was introspection or "inner sense." In this method, trained subjects are given a stimulus. They then are asked to describe the sensations that made up their conscious experience of that stimulus.

Now you can try introspection yourself. Look at the stimulus that will appear on the screen.

Show a picture of an apple (or hold up any handy object).

What is your experience of this apple? How would you describe the sensations of each of the parts of the apple—its colors, its roundness, its shading?

In Wundt's laboratory, you might be asked to reflect on your experience of this stimulus for several minutes or even several hours!

Functionalism Exercise (also can be made into a student assignment):
Read this to the class:
William James opened a small psychology laboratory in 1870 that he used to demonstrate some of the basic processes he taught in his classes at Harvard University. However, the laboratory was for demonstration, not research. James identified himself as a philosopher, not a psychologist. James published *The Principles of Psychology* in 1890. This massive work (two volumes of almost 1400 pages) contained his theoretical positions in psychology.

Functionalism was the idea that mental processes were useful as functional activities to living creatures in their attempt to maintain and adapt themselves in the world of nature. James developed this position as a reaction against the view of the structuralists that the mind can be divided into units. James's focus on the mind's ability to adapt was derived from Darwin's evolutionary theory that all characteristics of a species must serve some adaptive purpose. According to James, psychology's goal should be to investigate the function, or purpose, of consciousness rather than its structure.

James used the concept of "stream of consciousness" to describe the mind.

Present this instruction:
What are the thoughts going through your mind right now? Perhaps you are thinking about the instructor in front of you, but if you let your mind wander, you may start to think about where you are going later today, what you did yesterday, the feeling that you are getting hungry and would like something to eat, or perhaps your concern over whether your roommate is still asleep. According to James, these thoughts cannot be separated into component parts as proposed by the structuralists. Instead, they form a stream of the total flow of thoughts and are not necessarily tied to direct experience.

Biography of John B. Watson (1878-1958) (from Feldman & Cavanagh *Essentials of Understanding Psychology* text, Ch. 5 – see the Key Contributors box)

John Broadus Watson was born in a small town in South Carolina in 1878. Described as a troublesome child in school (Skinner, 1959), Watson nevertheless entered university at only 16 years old. He went on to earn his doctorate in psychology from the University of Chicago, the youngest ever PhD graduate at the time (Harzem, 2001). In 1904 Watson married his first wife, Mary Ickes, and the couple moved to Baltimore when Watson became a professor at Johns Hopkins University. Watson was at Johns Hopkins from 1908 until 1920, and most of his ground-breaking work was produced during that short academic tenure. © Underwood & Underwood/Corbis Watson was passionate about academic rigour in the sciences and wished for psychology to be as rigorous and objective of a discipline as the other natural sciences. Out of this passion came his vision of psychology as the objective study of behaviour—

that which could be seen and measured. In 1913, Watson published his seminal paper, Psychology as the behaviorist views it. In this paper, Watson argued convincingly for his vision of psychology as the study of objective and measurable behaviour, a perspective which he called behaviourism.

Watson's view had a profound impact on the field of psychology, and behaviourism enjoyed total dominance in academic psychology—until psychology's "cognitive revolution" in the 1950s and 1960s (Epstein, 2004). Watson's academic career was short-lived, as a romantic relationship with a young student, Rosalie Rayner, led to his termination from Johns Hopkins in 1920 (yes, Rayner was his co-author in the controversial Little Albert study discussed above!). He married Rayner, and the couple moved to New York where Watson went on to have a second career in advertising (Woodworth, 1959). Sadly, Rayner died of pneumonia in 1935, a loss from which Watson never recovered. He died in 1958, broken and depressed. Before his death, he burned all his personal papers, reportedly saying "when you're dead, you're all dead" (Bartlett, 2014). Still, Watson's contribution to the field of psychology has outlived him. Behaviourism or behavioural psychology remains an active branch of psychology, today, with many important applications in areas as diverse as autism, addictions, and organizational/behavioural management.

Biography of Sigmund Freud (1856-1939) (from Feldman & Cavanagh *Essentials of Understanding Psychology* text, Ch. 1– see the Key Contributors box)

Sigmund Freud was born in Czechoslovakia, but his parents moved his family to Vienna, Austria when Freud was four years old. Freud's family dynamic not without its share of Freudian material—his father Jacob was elderly, and Freud himself was the first-born son of his father's much-younger third wife, Amalie. Freud's younger brother Julius died just a few months after birth, and a beloved nanny was arrested and imprisoned for theft when Freud was young (Jacobs, 2003). Freud's family was Jewish in a society that was rife with overt and covert anti-Semitism.

Sigmund Freud trained as a physician at the University of Vienna. As a young physician he met Josef Breuer, whose work with "hysterical" patients was profoundly influential upon Freud's career. In 1886, Freud opened his practice in Vienna, where he began treating patients and developing the early technique and practices that would lead to psychoanalytic theory. Freud's seminal work, *The Interpretation of Dreams,* was published in 1900; over the next ten years, the psychoanalytic movement gained momentum in Europe and the United States. Although Freud was diagnosed with jaw cancer in 1923, for which he would require more than 30 operations (Jacobs, 2003), he continued to publish a stunning volume of work in psychology, covering topics as diverse as war, death, art, literature, sexuality, psychoanalysis, and civilization (Thurschwell, 2009).

Freud saw the rise of anti-Semitic fervour as Adolf Hitler took power in Austria in 1933. As part of the systematic persecution of the Jewish people by the Nazis, Freud's works were banned, and his books were burned. He refused to leave Vienna until his beloved daughter, Anna, was detained and questioned by the Gestapo. Upon her release, Freud agreed to flee to London with his immediate family. He died of cancer in England in September 1939, just after the outbreak of World War II. Freud's bleak view of human nature, including our tendency towards violence, destruction, and death was undoubtedly influenced by the fact that he lived through two of

Europe's darkest historical periods, World War I and World War II, and died before the end of the second.

Importance of Perspectives in Psychology
These five perspectives form a central theme of the course in that the course and many topics within the course are organized around them. Alert students to the fact that if they understand these perspectives, they will be in very good shape to understand material presented throughout the course. It will be easier for students to grasp these concepts if after presenting these briefly and defining them, you show how they would apply to a fictional character (see below). If using the Media Resources, ask whether students can think of additional proverbs that fit with each perspective based on the "Identifying Psychological Perspectives" activity.

Indigenous Psychology
Indigenous Psychology is a movement in psychology that seeks the decolonization of psychological perspectives and the integration of meaningful indigenous knowledge into psychological theory. This is particularly important for Canadian students to understand as the Indigenous Psychology movement is significant due to the history of oppression against Canada's First Nations peoples. In Canada, indigenous psychology typically refers to the psychology of the First Nations people of Canada, although some researchers have argued for the need for an indigenous psychology of Canada that is distinct from U.S. psychology. An interesting point of debate for students is to discuss the extent to which "mainstream" psychology is itself an indigenous psychology – one based on the Western academic and scientific perspective. It is important that students understand that indigenous psychology is not the "study of" First Nations peoples or a cross-cultural comparison between First Nation and non-First Nation Canadians. Indigenous psychology would be the theory and practice of psychology as based on traditional First Nation knowledge and cultural practices. It is very important to highlight to students that the First Nations community is heterogeneous. First Nations people of Canada are a community of over a million people with different ethnic, cultural, linguistic, social, and religious traditions and identities.

Research Questions in Different Subfields of Psychology
For each of the subdivisions of psychology, describe one research question or issue that is addressed by psychologists working in that area, focusing on areas that may be of interest to students. These can be found by going to the CPA Web site - http://www.cpa.ca/
or by looking at a recent issue of CPA publications such as:

(1) *Canadian Psychology*: http://www.cpa.ca/publications/journals/canadianpsychology/
(2) *Canadian Journal of Behavioural Science*: http://www.cpa.ca/publications/journals/canadianjournalofbehaviouralscience/

It is best for these ideas to be recent and of potential student interest. Below are some examples:

Behavioural neuroscience	What are the genetic contributors to depression?
Clinical psychology	What are the best treatment methods for people who suffer from extreme anxiety?
Clinical neuropsychology	How does brain damage affect an individual's ability to speak?
Cognitive psychology	Why are some people good at reading maps?
Counselling psychology	How can psychologists help college students make career choices?
Cross-cultural psychology	How can we improve the communication between people from Eastern and Western cultures?
Developmental psychology	What happens to short-term memory as people get older?
Educational psychology	What qualities make for effective teachers?
Evolutionary psychology	What are the origins of human jealousy?
Experimental psychology	What factors influence the size of bets a gambler makes?
Forensic psychology	How can we predict whether a person will commit a dangerous crime?
Health psychology	How can people be encouraged to develop healthier diets?
Indigenous psychology	How can we integrate indigenous knowledge and cultural tradition across different sub-fields of psychology?
Industrial/organizational psychology	What factors make a good manager?
Personality psychology	Do lonely people have low self-esteem?
Psychology of women	Are women less likely than men to be hired as executives?
School psychology	What tests are best at identifying children with learning disorders

Relationships among Disciplines, Perspectives, and Issues

By the time you reach this point in the lecture, students will possibly be confused about the differences among the disciplines in psychology, the workplaces in which psychologists are found, the historical perspectives, the contemporary perspectives, and the issues presented here. Review these distinctions pointing out that the disciplines relate to the areas in which psychologists specialize, the workplaces are where they conduct their jobs, the perspectives (historical and current) are the theoretical positions that psychologists have, and the key issues are substantive ideas about which psychologists have different viewpoints. It is also important to point out the difference between "conscious versus unconscious causes of behaviour" and "observable behaviour versus internal mental processes." Conscious vs. unconscious refers to whether the forces that drive behaviour are available to conscious awareness or whether they lie under the surface and are unavailable to the individual's thought processes (unconscious). Internal vs. observable refers to what is considered acceptable data. Those who favor the observable side of the issue regard it as inappropriate to use any data other than those which can be objectively recorded. Those at the internal end of the pole believe that is acceptable and appropriate to find out what is going on inside the person (within the "black box"). Having explained these differences, it is then helpful to use Figure 1 to show how the perspectives view each of the issues. You can then challenge students to decide, by the end of the course, where they fall on each of the key issues and therefore what perspective lies closest to their beliefs regarding human nature.

New Trends in Psychology
New trends in psychology can be readily accessed from the CPA Web site, PsychLit or by looking at a recent issue of CPA publications such as *Canadian Psychology*, *Canadian Journal of Behavioural Science*, or the table of contents of any recent psychological journals.

Media Presentation Ideas:

Analysis of a Fictional Character
Show a brief segment from a movie or television show in which a character displays psychological symptoms. Ask students to discuss the character's symptoms from the five major perspectives.

Recent Findings Relevant to Psychology
Keep your eyes open for recent findings in the news that may be shown on evening news broadcasts, morning shows, news magazines, or documentaries. Use brief clips from one of these sources to show psychology in the news.

MODULE 3 RESEARCH IN PSYCHOLOGY

The Scientific Method
Psychological Research
Descriptive Research
Experimental Research

KEY CONCEPTS:
Key Concept 3–1: What is the scientific method?
Key Concept 3–2: What role do theory and hypotheses play in psychological research?
Key Concept 3–3: What research methods do psychologists use?
Key Concept 3–4: How do psychologists establish cause-and-effect relationships using experiments?

At the end of this module students should be able to:
3–1 Describe the scientific method.
3–2 Define research and distinguish between archival, naturalistic observation, survey, and case study research methods
3–3 Describe how correlational research determines the relationship between two sets of variables.
3–4 Distinguish between theory and hypothesis and describe the role of each in scientific inquiry.

Student Assignments

What Science is NOT!
Send your students to your library's online database in psychology. If your library does not have this facility, have students complete this assignment via a search engine such as Google. Give them this assignment: For a topic that interests you, find an article that you feel does a good job of addressing the topic. Find one that does a poor job of addressing the topic. What makes the difference between a good (i.e., scientific) and a poor (i.e., non-scientific) study on this topic?

Scientific Method
Ask students the following questions about the scientific method in psychology:
- Why is it necessary for psychological researchers to use the scientific method?
- Think about a psychological issue of interest to you. How would you approach it from a scientific perspective?
- Is it more or less difficult for psychologists to study phenomena of interest than is true for scientists in other disciplines?

Operationalization: Diffusion of Responsibility
The textbook describes the research conducted by Latane and Darley on diffusion of responsibility in which the hypothesis was tested that the more the number of people in the room, the less likely an individual bystander would help. The hypothesis was operationalized by varying the number of people in the room when a confederate appeared to be having an epileptic seizure. Describe two other methods that could be used to operationalize this hypothesis.

Lecture Ideas:

"Psychic Experiment"
To show the importance of the scientific method, particularly ruling out alternative, competing hypotheses, here is a demonstration that is very simple to do. It just takes a bit of show "person" ship. This idea is loosely based on the "magic" tricks of Daryl Bem, Cornell psychologist.

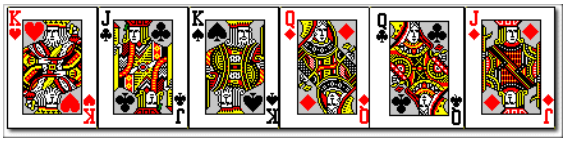
The idea is to lure students into thinking that you can read their minds by guessing which object in the classroom they will have chosen. You will use a trick called "Black Magic." After amazing them with your psychic powers, you then ask students to suggest alternative hypotheses to the possibility that you actually read their minds. The setup for this demonstration is reference to the Ganzfield procedure in which a "receiver" attempts to read the mind of a "sender." The procedure involves the receiver trying to guess which of four objects he or she had chosen. The chance rate is 25% correct, but Bem's meta-analysis demonstrated a hit rate of 33%–35%. Say that Bem was therefore able to prove the existence of psychic phenomena (also called the "Psi" effect). If the class cooperates by concentrating their thoughts on an object in the room, you may be able to demonstrate the effect today.

Follow these steps:

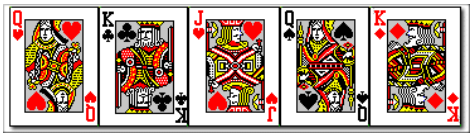
1. Arrange before the class to have a volunteer to assist you. This volunteer will appear to have been randomly chosen, but actually you will have pre-selected this person. You can honestly ask this person in front of the class whether you arranged ahead of time regarding which object was selected, and the honest answer will be no, because you will not have arranged ahead of time which object was actually selected. You will arrange ahead of time which object the assistant will point to prior to whatever object the class selects. This will be a black object. Any object that the volunteer points to after the black one will be the object chosen by the class. As you can see, nothing is really left to chance at all, nor have you been dishonest.
2. Tell the class that you will step out of the room and they will have up until the time you count to 30 to choose the object. The assistant will be in the room during this time.
3. Return to the room and now tell the class that in order to replicate the Ganzfield procedure, you will need to have the volunteer point to several objects in the room. You will use your psychic powers (along with the class's cooperation) to determine which object they have chosen. During this time, the volunteer will point to three or four objects then to an object that is black. The object after the black one should be what the class selected.
4. Feel free to ham this up. For each object, carefully inspect it, put your hands on it, look as though you are concentrating, and then announce in a loud voice, "No, this is definitely not the object." For one or two of the objects, you can start to say "yes," but then shake your head and say no. Chide the class and tell them to concentrate harder because you are getting confusing signals. For the object after the black one, first start to say no, then say very loudly, "YES! THIS IS THE OBJECT." Look at the class and take a well-deserved bow.
5. Now ask the class if they now believe in ESP. With luck, no one will have seen this trick performed before. Encourage them to think of alternative hypotheses and if necessary, lead them to think of the trick as involving not the object itself but the object AFTER the black object.

Another or a second presentation along similar lines involves a very simple card trick. This can be performed using an overhead or with a set of cards (although this will take some sleight of hand). The overhead trick is definitely easier. Reproduce these images:

Slide 1:



Slide 2:



As you can see, slide 2 and Slide 1 have completely different sets of cards. You will ask for a volunteer and say that the volunteer is to think of one of the cards from Slide 1. You will have magically guessed which card that is, as will be shown when you reveal Slide 2. If you can do this with actual cards, you would have the advantage of being able to pretend to deal out the cards minus the one that the volunteer chose. The problem is that you would then have to switch hands behind your back. With the overheads, tell the class that you have figured out ahead of time which card your volunteer will select. After the volunteer thinks of the card, show Slide 2. Unless the volunteer guesses the deception right away (try not to pick a math major!), then you can ask the class to suggest hypotheses regarding how you "knew" which card would be selected.

Feel free to adapt either of these tricks to your own personal style or to choose an alternate trick that you are comfortable with. The main point is that you encourage the students to think of competing hypotheses. This demonstration also helps to teach students the importance of careful observation. Both tricks can be solved if students pay attention to exactly what you do and say.

Theories, Hypotheses, and Operationalization
Theories are needed in psychology to provide a way to organize our understanding of the world and to generate ideas for finding new insights into behaviour. Latane and Darley developed their theory which in turn led to hypotheses based on the theory. Choose another theory and associated hypotheses based on your own interests in the field. Move on to operationalization. Returning to the Latane and Darley study, the investigators operationalized their hypothesis by having a confederate fake having an epileptic seizure and measuring the response time of participants depending on how many people were in the room at the time. Show how the hypothesis in the example you are providing was operationalized. Point out that operationalization depends on the resources available to the investigator (e.g., having an eye tracking machine allows for research on eye movements), the ingenuity of the researcher (the researcher's ability to come up with imaginative methods to test the hypothesis), and logic. The researcher should design the test of the hypothesis in such a way that alternative hypotheses can be ruled out.

PsychLit
A brief assignment would involve having students use PsychLit (or other Web search), find a current example of each type of research method (e.g. archival, case study). Briefly describe the method used in the study.

Methods of Research
Have students complete Handout 1–5.

Correlational Research
Send students to this Web site to complete a correlational study of their own:
http://www.dushkin.com/connectext/psy/

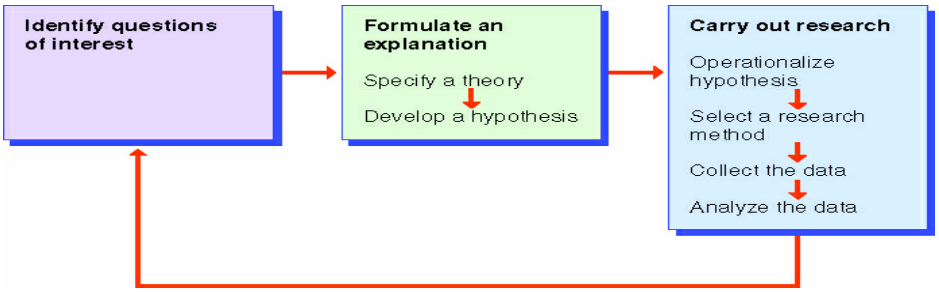
Correlational Research
Have students complete Handout 1–6.

Experimental Design
Have students complete Handout 1–7.

Presentation Ideas:

Current Research Examples
Interesting research examples can be taped from news documentary programs, the Discovery Channel, or the Science Channel, and shown for educational purposes on a one-time basis without violating copyright laws. The purpose of showing one of these examples in connection with this module (compared to the others on research) would be to highlight the importance of using the scientific method to arrive at conclusions about human behaviour.

Overheads
Use this overhead to illustrate the scientific method:

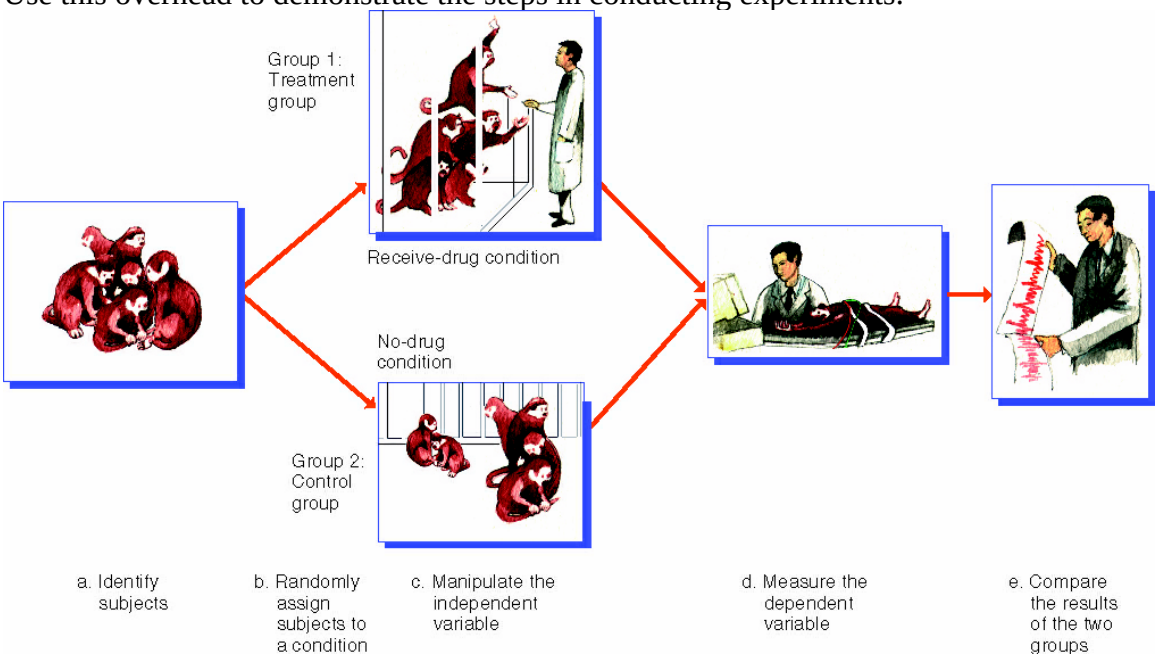


Operationalization
The most interesting (and difficult) concept to present from this module is that of operationalization. The approach to use here is, again, to present an example of research either from the Media Resources disk or from a research documentary. The best example would be a study using an innovative method or one that relies on sophisticated technology (e.g., eye tracker, fMRI). The example also should be one that is of inherent interest to students, and it should pertain to a contemporary issue. You can also ask students to work through an example. Start with a concept that might be of interest to students (such as studying deception) and work them through the steps to conduct research on the topic.

Research Documentaries
As was true for the above sections, there are many possible documentaries on research that could be shown in the lecture on the experimental method.

Overheads

Use this overhead to demonstrate the steps in conducting experiments:



Lecture Ideas:

Archival Research:

Searching high school records of people who later became criminals to see if there were early signs of misbehaviour.
Looking up marriage licenses to find out the average age difference between spouses.
Finding out whether there are racial biases in jury decisions by examining court records.
Studying speeches made in Congress by men and women to see if there are differences in their use of particular words or phrases.
Examining Census records to determine whether there are relationships between education and death rates.
Examining the use of online help manuals by people who buy printers to see if those with more knowledge of computers are less likely to use manuals.

Naturalistic Research:

Watching the patients in a psychiatric ward during meals to see if they speak to each other.
Having people of different races drop their books while walking on a campus sidewalk and counting the number of people who stop to help to see if people are more likely to help those of the same race as themselves.
Determining whether people are more or less likely to ride an elevator than to walk in the morning versus the afternoon.
Watching people in a computer lab and counting the number of times that they interrupt their studies to answer e-mails.
Counting the length of time, it takes people in a grocery store to decide on a cereal brand.
Watching men and women in conversation to examine their nonverbal behaviour.

Counting the number of times that students versus nonstudents make calls on their cell phones during basketball games.
Watching children in a play group and recording the number of times they smile at other children.
Recording the number of times that a teacher in a classroom calls on boys and girls to see if boys are more likely to be called on to answer questions.
Observing whether people are more likely to cross against the light in a suburban street or a street in the center of a city.
Counting the number of times clients with various disorders cancel their psychotherapy appointments.

Survey Research:
Asking a random sample of people to complete an online questionnaire about political attitudes.
Asking people to list their favorite foods to determine if there are geographic differences in food preferences.
Interviewing people to ask them about their health practices.
Asking people to rate their preferences for different yogurt flavors.
Asking people to rate their attitudes toward new television technologies.
Giving people a chance to rate their preferences for catalog shopping by phone or online.
Having people describe whether or not they have experienced particular psychological symptoms throughout their lifetimes.
Asking about people's experiences in elementary school with male versus female teachers.
Asking a sample of 50 people to participate in an opinion poll.
Finding out from airline passengers whether they would prefer to buy their meals on the airplane or in the airport terminal.

Variables to Study in Correlational Research:
Self-esteem and height.
Exercise and cancer risk.
Depression and length of Internet use.
Time spent playing video games and grades.
Attractiveness and popularity.
Height and intelligence.
Noise level of music and heart rate.
Body image and weight.
Achievement test scores and scholarship funding.
Stress hormones and perceived stress level.
Number of action movies seen in past 12 months and sensation-seeking.
Intelligence and enjoyment of pop music.
Marijuana smoking and high school grades.
Time spent reading novels and depression scores.
Alcohol consumption and problem-solving ability
Sex role attitudes and political conservatism.
Weight gain and risk of poor self-rated health.
Anxiety and lack of concern over test performance.
Behaviour problems and popularity in schoolchildren.

Case Study:
Giving a troubled adolescent a set of length questionnaires and interviews.
Examining a group of substance-addicted adults with tests of biological functioning.
Asking a mother to talk in depth about her experiences of raising a child with autism.
Asking a human resources manager to describe how she makes decisions about recommending applicants for employment.
Studying intensively the work habits of a small group of successful CEOs.
Intensive neurological and neuropsychological testing of a group of children with a rare brain disorder.
Documenting progress in psychotherapy with a victim of Hurricane Katrina.

Experimental Research:
Determining whether negatively worded advertisements cause people to buy more or less of a product.
Examining people to determine whether memory is better for words or pictures.
Having people take a memory test in a laboratory to determine which conditions are best for promoting short-term memory.
Providing therapy to people with severe anxiety disorders and comparing them to a control group that did not receive therapy.
Determining whether people are more likely to lie when they are put in a condition of thinking they need to impress the experimenter compared to a condition in which they do not think they need to impress the experimenter.
Comparing people's anxiety levels when told to imagine a stressful job interview compared to when told to imagine listening to relaxing music.

Other Examples
In addition to this list, you can collect examples of types of research that might have popular appeal from newspapers, *Scientific American*, Web sites, and magazines.

Summary of Research Methods
Use this chart to summarize research methods:

Research Method	Advantages	Disadvantages
Naturalistic	Natural habitat	Inability to control factors Need perfect conditions Subjects may alter actions
Surveys	Straightforward Accuracy with small samples	Memory lapses in respondents Responses tailored to what researcher wants to hear Sample may not be representative of population
Case Study	In-depth and focused	Generalizations must be made cautiously

MODULE 4: RESEARCH CHALLENGES – EXPLORING THE PROCESS

The Ethics of Research
Exploring Diversity: Choosing Participants Who Represent the Scope of Human Behaviour
Should Animals Be Used in Research?
Threats to Experiment Validity: Experimenter and Participant Expectations
Becoming an Informed Consumer of Psychology: Thinking Critically About Research

KEY CONCEPTS:
Key Concept 4–1: What major issues confront psychologists conducting research?

At the end of the module students should be able to:
4–1 Describe the ethical concerns involving the welfare of human and animal participants in scientific research.
4-2 Discuss the ethics of using animals as research subjects.
4–3 Identify the possible sources of experimental bias and discuss techniques used to safeguard against them.

Student Assignments:

Ethical Principles:
Go to the CPA Web site and look up the Canadian Code of Ethics for Psychologists. Choose three of the principles and answer the following questions:

1. Why do you think this principle is important?
2. What difficulties might psychologists encounter when applying this principle?
3. Describe a real-life situation in which this principle might be used.

Experimental Bias:
Have students volunteer to be participants in a psychological experiment. After they have completed their participation, ask them to answer these questions:

1. Did you know what the hypothesis was in this study?
2. If so, how do you think your performance was affected by this knowledge? If not, how might your performance have been affected by this knowledge?
3. What could the experimenter have done in this study to reduce experimental bias?

Evaluating Research
Go to the CPA Web site and on the publications page, find a recent study that interests you (alternatively, students can be sent to the PsychLit Web site and instructed to find a specific study that you identify). Evaluate the study's findings as described in the Informed Consumer box:

1. What was the purpose of the research?
2. How well was the study conducted?
3. Are the results presented fairly?

Lecture Ideas:

Ethical concerns:
Enhance this part of the lecture by presenting a brief history and synopsis of the Canadian Code of Ethics for Psychologists. Be sure to differentiate clearly between the need to protect participants from undue risk, the need to inform participants in advance regarding what will take place when they complete the research, and the need to maintain the scientific integrity of the research. For example, if Latane and Darley had informed participants of exactly what would transpire in the study on diffusion of responsibility, their results would not necessarily have provided them with valid results because participants would have known that they were expected to help (this issue relates also to participant expectations). Another topic of interest to students is that of withholding psychological services in the interests of maintaining the integrity of the experimental design.

Summary of Ethical Principles (from Pettijohn's "Connectext")
Psychologists work to develop a valid and reliable body of scientific knowledge based on research. They may apply that knowledge to human behaviour in a variety of contexts. In doing so, they perform many roles, such as researcher, educator, diagnostician, therapist, supervisor, consultant, administrator, social interventionist, and expert witness. Their goal is to broaden knowledge of behaviour and, where appropriate, to apply it pragmatically to improve the condition of both the individual and society. Psychologists respect the central importance of freedom of inquiry and expression in research, teaching, and publication. They also strive to help the public in developing informed judgments and choices concerning human behaviour. The Canadian Code of Ethics for Psychologists provides a common set of values on which psychologists build their professional and scientific work.

This code is intended to provide both the general principles and the decision rules to cover most situations encountered by psychologists. It has as its primary goal the welfare and protection of the individuals and groups with whom psychologists work. It is the individual responsibility of each psychologist to aspire to the highest possible standards of conduct. Psychologists respect and protect human and civil rights, and do not knowingly participate in or condone unfair discriminatory practices.

The development of a dynamic set of ethical standards for a psychologist's work-related conduct requires a personal commitment to a lifelong effort to act ethically; to encourage ethical behaviour by students, supervisors, employees, and colleagues, as appropriate; and to consult with others, as needed, concerning ethical problems. Each psychologist supplements, but does not violate, the Ethics Code's values and rules on the basis of guidance drawn from personal values, culture, and experience.

Experimental bias:
Cite specific problems associated with experimental bias in psychological research, distinguishing between bias due to experimenter expectations and bias due to participant expectations. Placebos can be used to minimize the effects of participant expectation, particularly when used in a double-blind procedure. However, placebos can sometimes lead to improvement due to the "placebo effect" (see http://www.fda.gov/fdac/features/2000/100_heal.html for an excellent discussion of this issue). Raise the issue of why deception is needed and how best to handle the balance between informed consent (raised above) and the need to minimize bias.

Evaluating how well research supports particular findings:
Summarize a recent research study in your area of specialty. Using the criteria in the text in the Informed Consumer box, evaluate this study—that is, what was the purpose of the research, how well was the study conducted, and are the results presented fairly?

Media Presentation Ideas:

Popular Movie: Research Methods
In addition to showing a serious documentary or an example from the Media Resources, several movies portray psychological research. One classic example is the ESP scene from the movie *Ghostbusters.* In this scene, Bill Murray rigs an ESP experiment to impress an undergraduate. This scene displays experimenter bias as well as unethical behaviour by the researcher, which although humorously portrayed, is engaging in behaviour that might be interpreted as sexual harassment.