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AN OVERVIEW OF PSYCHOPATHOLOGY AND CHANGING CONCEPTUALIZATIONS OF MENTAL ILLNESS

LEARNING OBJECTIVES

- 1.1 Describe the components of and key considerations of psychopathology.
- 1.2 Discuss the major themes of this book.
- 1.3 Explain how evolution and culture are relevant to psychopathology.
- 1.4 Summarize the historical influences on modern conceptions of mental disorders.
- 1.5 Explain how discoveries about the brain contributed to an understanding of psychopathology.
- 1.6 Discuss historical methods of care for those with mental disorders.
- 1.7 Discuss the origin and evolution of biological treatments for mental illness.
- 1.8 Examine the psychological perspectives that guide present-day treatment of mental disorders.

The biography *A Beautiful Mind* describes the fascinating life and experiences of mathematician John Nash (Nasar, 1998). The powerful story was made into a major Hollywood film that won the Academy Award for Best Picture in 2001. John Nash was a remarkable figure who received a PhD in mathematics from Princeton University and taught at both MIT and Princeton. In 1994, Nash won the Nobel Prize in Economics for his work on game theory. From what you just read, you would probably assume that John Nash had a very productive career, and in many ways he did.

However, there was another aspect to John Nash's life that caused considerable distress to himself and puzzlement for others. One day at work, when he was 30 years old, he walked into a room full of others in his department, held up a copy of the *New York Times*, and said to no one in particular that the story in the upper-left corner contained an encrypted message. Not only was it a message in code, he claimed, but it had also been put there by inhabitants of another galaxy, and he knew how to decode it (Nasar, 1998, p. 16).

From that day on, there were times Nash was productive, but there were also times when he had disordered thoughts, mumbled to himself without thought of those around him, and experienced delusions of situations that did not exist. He felt there were individuals around him who put him in danger. He even wrote letters to officials in the U.S. government to suggest these individuals were setting up alternative governments. John Nash suffered from schizophrenia.

In Terri Cheney's memoir *Manic* (2008), the author, who rose to success as an entertainment attorney in Beverly Hills, told of her experience of exceptional energy. She described one time she was in Santa Fe, New Mexico:

The mania came in four-day spurts. Four days of not eating, not sleeping, barely sitting in one place for more than a few minutes at a time. Four days of constant shopping—and Canyon Road is all about commerce, however artsy its façade.



Terri Cheney
Suzanne Allison

She further described her experiences:

Mostly, however, I talked to men. Canyon Road has a number of extremely lively, extremely friendly bars and clubs, all of which were in walking distance of my hacienda. It wasn't hard for a redhead with a ready smile and a feverish glow in her eyes to strike up a conversation and then continue that conversation well into the early-morning hours, his place or mine. (pp. 6–7)

Many individuals experience feelings of high energy or sexuality that would not be considered a mental disorder. However, as you will see in Chapter 6 on mood disorders, those with bipolar disorder often experience high levels of energy for long periods of time and an intense desire to engage in sexual activity, gambling, or shopping. Our task is to understand which types of activities would be considered psychopathology or mental illness.

UNDERSTANDING PSYCHOPATHOLOGY: DEFINITIONS AND KEY CONSIDERATIONS

At one time in our history, health professionals distinguished between physical disorders and mental disorders: Physical disorders involved the body, and mental disorders involved the mind. For example, addiction was at one time seen as a lack of will, with little to do with physiology. Today, we see the close connection of the brain with what were previously considered mental processes. Mental disorders are brain disorders. Further, those physiological processes involved in physical disorders, such as the immune system, the bacteria in your gut, the turning on and off of genes, and the chemical processes of the body, are equally involved in mental disorders.

In this book, the terms *psychopathology*, *mental disorders*, or *mental illness* refer to those disorders traditionally described in scientific and professional research and practice. *Psychopathology* is the word commonly used in the neurosciences and the one you would want to use when performing literature searches in research and clinical journals. *Abnormal psychology* as a research area has a long tradition in psychology, and this tradition will be noted by that term. In the middle of the 20th century, a textbook such as this one would have focused more on the description of particular disorders than on scientific research. With the advent of the neurosciences, mental disorders and their relationship to the brain have become an important focus of research. Overall, this was referred to by the term *psychopathological research*. To reflect the strong scientific tradition currently seen in the study of psychopathology, the name of the *Journal of Abnormal Psychology* was changed in 2022 to the *Journal of Psychopathology and Clinical Science* (Patalay & MacDonald, 2022).

Defining Psychopathology and Understanding Its Components

Mental disorders are part of our human condition. We have many names for these conditions. We speak of people with *mental illness*. For over a century, psychologists have studied these conditions in terms of **abnormal psychology**, which is the study of abnormal behavior. Others have used the term **psychopathology**. This is in contrast with *pathophysiology*, or pathology of our physiology. Slang words such as *crazy* or *nuts* have been around for hundreds of years. However, many of these terms stigmatize those who experience a mental disorder. To avoid stigmatizing of groups of people, person-first language, such as “an individual who experiences schizophrenia,” or “a person who experiences depression,” is more widely used today. However, some terms referring to psychopathology have endured in our legal system. For example, one of the oldest legal terms is *insanity*, or *insane*, which comes from the Latin meaning “not healthy.”

Mental disorders have been with us throughout our human history. Since the time that written language became a part of our experience, humans have described mental disorders. We find such descriptions in Egyptian, Greek, Chinese, Indian, and other texts throughout world history. Today, our films, novels, plays, and television programs often portray problems experienced by those with mental disorders.

The experiences of the individuals described in the chapter opening give us insights into the nature of mental illness. Terri Cheney told how she experienced great energy, which lasted for 4 days. She described the experience of mental illness as something happening *to* her. In this sense, Terri Cheney

and John Nash did not feel they had an alternative way of acting. Thus, one important characteristic of mental illness is the lack of control over one's experience. This can also be described as a loss of freedom or an inability to consider alternative ways of thinking, feeling, or doing. Some individuals show this loss mainly in terms of emotional experiences, as in the case of Terri Cheney with bipolar disorder. Others show the loss in terms of cognitive processes, such as the experiences of John Nash. At the beginning of many of the chapters of this book, you will read first-person accounts from individuals with particular disorders. In this way, you can discover how people with a mental disorder experience their world.

Another common theme seen in psychopathology is the loss of genuine personal contact. Individuals with depression or schizophrenia often find it difficult to have social interactions as experienced by other people. Just having a simple conversation or talking to clerks in stores may seem impossible. Mental illness not only affects individuals' interpersonal relationships but also their relationship with themselves, their *intrapersonal* relationship. When individuals with schizophrenia or depression talk to themselves, they often think negative thoughts about who they are and what will happen in the future.

In many cases, the experience of a mental disorder results in personal distress. Not being able to get out of bed, or feeling that a voice in your head is telling you that you are evil, or worrying that a rice cake or an apple will make you fat all represent different degrees of distress.

Thus, we can consider four important personal components in psychopathology (Table 1.1). These are a loss of freedom or ability to consider alternatives, a loss of genuine personal contact, a loss of connection with one's self and the ability to live in a productive manner, and personal distress. As you will see with the disorders presented in this book, personal distress over time is one of the criteria required for a diagnosis to be made. There is also a global component in which the person's behavior and experiences are considered to be deviant in terms of cultural and statistical norms.

Impact of Mental Disorders

Today, the National Institute of Mental Health (NIMH) estimates that 22.8% of the U.S. population experiences a mental disorder during a given year (see For Further Reading at the end of this chapter). This represents roughly 57.8 million people in the United States (Figure 1.1).

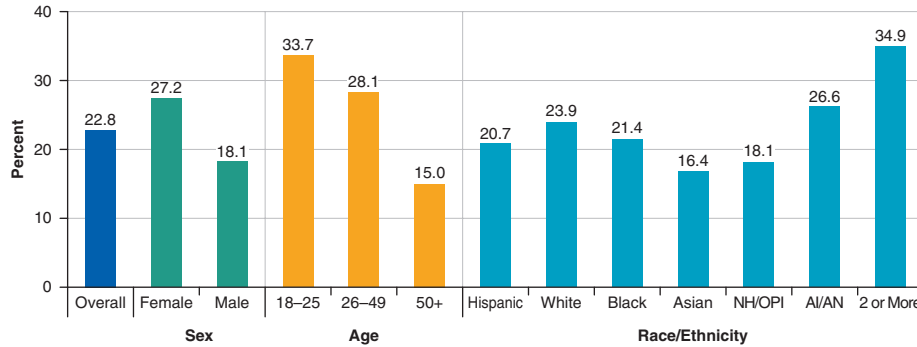
Having a mental disorder results in lost productivity, lost personal enjoyment, and potentially even premature death. The World Health Organization (WHO) estimated that in the United States and Canada, mental disorders cause a greater loss in what they refer to as disability-adjusted life years (DALYs) than cardiovascular disease or cancer. DALYs represent the total number of years lost due to illness, disability, or premature death (see For Further Reading).

With mental illness being so common, you might think that we as humans would have a complete understanding of the factors involved. However, this is not the case. We are not even sure how to refer to individuals with mental disorders. Are they abnormal? How you answer this question may be related to your experiences, including your cultural perspective.

Depending on your perspective, one can be normal or abnormal. Many famous artists such as the Impressionists of the 19th century had their work initially rejected because it did not fit into the standards of what was considered "good art" at the time. However, today we appreciate that these artists showed us another way of viewing the world. Likewise, many movies and online media today would be rejected at a previous time as not representing mainstream values. Being part of the LGBTQ community was considered a mental disorder at one time. Further, what would be acceptable in one culture might be seen as completely "crazy" in another.

TABLE 1.1 ■ Four Key Personal Components of Psychopathology

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|--|
| 1. Loss of freedom and ability to consider alternatives |
| 2. Loss of genuine personal contact |
| 3. Loss of connection with one's self and the ability to live in a productive manner |
| 4. Personal distress |

FIGURE 1.1 ■ Past Year Prevalence of Any Mental Illness Among U.S. Adults (2021)

Source: National Institute of Mental Health. (2023, March). *Mental illness*. <http://www.nimh.nih.gov/health/statistics/prevalence/any-mental-illness-ami-among-us-adults.shtml>

Persons of Hispanic origin may be of any race; all other racial/ethnic groups are non-Hispanic. NH/OPI = Native Hawaiian/Other Pacific Islander. AI/AN = American Indian/Alaskan Native.

Stigma and Mental Disorders

As you will see throughout this book, experiencing a mental illness does not mean that one has to live a limited life. Individuals like John Nash and Terri Cheney not only have had productive careers, but they also have enjoyed successful personal relationships. However, many children, adolescents, and young adults with a mental illness report being told they could never perform in a high-level profession or have the types of relationships that others have. Mental disorders are seen throughout the U.S. population regardless of gender, age, and race/ethnicity (see Figure 1.1).

There is often a **stigma** experienced by those with a mental disorder. Historically, stigma has been defined as a mark of disgrace associated with a particular person. In psychological terms, stigma involves negative attitudes and beliefs that cause the general public to avoid certain people, including those with mental illness. Throughout the world, those with mental illness experience stigma. In many cultures, they are seen as different. When they are thus stigmatized, they are no longer treated as individual people, but only as part of a group who is different. It becomes an “us versus them” way of thinking.

Part of the stigma comes from inaccurate information about those with mental illness. For example, many people think that anyone with a mental illness is violent. In 2012, a mass shooting killed 20 children and 6 teachers at the Sandy Hook Elementary School in Newtown, Connecticut. Immediately after, it was suggested that the killer had a mental illness. Officials of the National Rifle Association claimed that this crime could not have been committed by a sane person. However, the data do not support a strong relationship between mental disorders and violence.

The MacArthur Foundation followed hospitalized individuals with mental illness after their release and found that only 2% to 3% became involved with violence with a gun. As a general rule, individuals with mental illness do not show more violent tendencies than is seen in the general population. However, particular disorders such as antisocial personality disorder (psychopathy) are associated with serial killers and other violent criminals. Also, substance abuse can increase violence in some individuals. With these exceptions, however, having a mental illness has not been found to increase violence toward others.

Stigma can be seen on a number of levels. If a society believes that mental illness is the fault of the person, and that individuals can change themselves by willpower, then it is less likely to spend the money necessary to set up clinics and train professionals. For similar reasons, society may also be less likely to set up school-based programs to help adolescents contend with bullying or handle thoughts of self-harm or suicide. As well, companies may not be willing to include mental health treatment in their insurance coverage, or they may place limits on benefits for treatment of these disorders.

As a society, Americans demonstrate a number of different values when considering those with mental illness. On the one hand, we may want to help those who experience distress. On the other

hand, we may feel it is the responsibility of these individuals to take care of themselves. *LENS: American Attitudes Toward Mental Illness* portrays some of these differing values.

In the United States, attitudes are moving toward less stigma. In 1996, for example, 54% of the U.S. population viewed depression as related to neurobiological causes. During the following 10 years, this increased to 67%. With a better understanding of the disorders presented throughout this book, it is possible to have a more compassionate as well as intellectual understanding of those with mental disorders.

LENS

AMERICAN ATTITUDES TOWARD MENTAL ILLNESS

Throughout American history, a number of traditions and themes have developed in relation to U.S. society. At times, these themes create a dynamic tension. For example, there is often a call for the federal government to tax less. However, in times of disaster, we expect the government to spend money to help our community. Such desires create a dynamic tension between different ideas and values.



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There is also such a dynamic tension in relation to individuals with mental illness. This partly comes from a desire to take care of those who are not able to take care of themselves. Historically, in many countries from which Americans originally came, the king, queen, or government took care of those who could not care for themselves. However, there is also a tradition in America represented by the pioneer or cowboy spirit in which we support the individual's right to do what they want and to live the type of life desired.

In the United States, we have contradictory attitudes toward mental illness. In terms of treatment, 94% of Americans believe it can help people with mental illness lead normal lives. This might suggest that society would encourage treatment of mental illness and reduce any stigma around seeking help. However, it is estimated that only about 20% of those with a mental disorder actually sought help in the prior year. This may have resulted from embarrassment or an attempt to hide the condition from others. This leads to less treatment and may, in turn, affect work and life opportunities. The attempt to hide mental problems may also reflect a reality, as only around 60% of Americans believe that people are generally caring and sympathetic to people with mental illness.

The picture becomes more complicated when we realize that in any given year, about one fourth of all adult Americans have a mental disorder, including anxiety, depression, and substance abuse. Emotional problems and psychological distress are also experienced by those with chronic physical conditions such as arthritis, cancer, diabetes, and cardiovascular problems. Given the large

number of individuals experiencing different types of emotional problems and psychological distress, you might expect that these conditions would be more accepted. However, stigma and negative attitudes toward mental illness are common in the United States. Some people even see having a disorder as being the person's fault and believe that they could change if they wanted to.

The dynamic tension between taking care of others and being independent becomes clear when we see individuals with mental illness who have difficulty securing permanent housing. This raises a number of questions. Can we take these individuals off the street if they don't want to be taken to a shelter? If they do not want to take medication, can we force them to take it if this would help them function better in our community? Should it be the police or health care workers who work with these individuals? In the final chapter of this book, which focuses on legal and ethical issues and mental health, a number of these questions will be considered.

Thought Question

Who do you believe should take care of people with mental illness in American society?

Note: Data presented above are taken from Centers for Disease Control and Prevention (CDC) (2012).

CONCEPT CHECK

- What are the four key components of psychopathology? Give an example of each.
- How does reading about the experiences of individuals with mental illness inform our understanding of the nature of psychopathology?
- What are the impacts of mental illness in the United States in any given year?
- Describe the dynamic tension in American attitudes toward mental illness.

THE THREE MAJOR THEMES OF THIS BOOK

In this book, three major themes will be explored. The first theme takes a **behavioral and experiential perspective** on psychopathology. Here, current ways of classifying and describing abnormal behavior are discussed. You will also consider the experience of having a psychological disorder, and this book will present first-person reports from individuals with particular disorders. It is also important to examine the role of one's social groups and culture.

We will also discuss symptoms and signs. Traditionally, *symptoms*, such as feeling sad, are seen as subjective, and may be reported by the individual to a professional, whereas *signs*, such as having a fever, are objective processes that can be measured and would be apparent to a professional. An important aspect of this perspective is the degree to which the symptoms and signs of a particular disorder are seen in a similar manner throughout the world. The universality of mental disorders has been an important consideration for scientists. It is also important to note the role culture plays in the manifestations of behaviors and experiences related to psychopathology.

The second theme examines what we know about particular psychopathological experience from a **neuroscience perspective**. In particular, the structure and function of the brain as it relates to psychopathology is discussed. With neuroscience techniques such as brain imaging, it is becoming clear that mental disorders are also brain disorders. In fact, with every disorder we will consider in this book, it is possible to examine how the structure and function of the brain is changed. The neuroscience perspective will also help us to consider how certain disorders share a similarity in underlying brain processes. For example, knowing that the same brain networks involved in physical pain are also involved in social rejection helps us understand the experience of each and how they are similar.

The third theme asks much broader scientific questions and examines psychological disorders from an **evolutionary perspective**. In adopting this perspective, we can think about how certain ways of



Culture: How are we a part of culture, and what is its influence?

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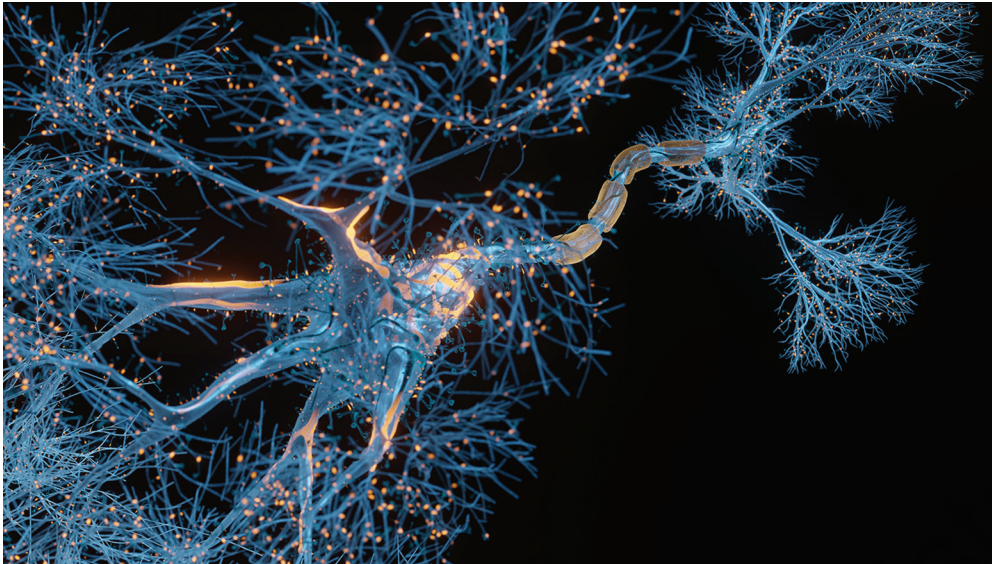
seeing or being in the world might be adaptive. Being afraid of heights, for example, keeps us from taking unnecessary risks. We can ask if there is any advantage to behaving and feeling in certain ways that others consider abnormal. We can also ask if the disordered behavior is secondary to another process that is beneficial. This could include an attempt by our body to protect itself.

In the same way that we know that having a fever is protective and beneficial to recovering from sickness, we can look for similarities in psychological disorders. We can also ask questions about why particular disorders continue to exist. Individuals with schizophrenia, for example, generally have fewer children than those without the disorder. Thus, you might expect that schizophrenia would have gradually disappeared over our evolutionary history through the production of fewer children with the genetics related to the disorder. However, this is not the case, and in fact, schizophrenia occurs in approximately the same percentage (1% of the population) throughout the world in both developed and developing countries. As will be discussed in more detail later in this book, this suggests that schizophrenia is an old disorder that has existed since humans migrated out of Africa around 100,000 years ago (Benton et al., 2021), and it is not related to stresses unique to developed countries. It also suggests that the multiple genes associated with schizophrenia may be associated with more positive human traits such as creativity.

Levels of Analysis

As we explore together the themes of behavior and experience, neuroscience contributions, and evolutionary perspectives as they relate to psychopathology, you will see that we will move across a variety of **levels of analysis** ranging from culture to genetics. You can group these levels into three domains. The highest-level domain examines the individual in relationship with others. This includes our culture and society as well as our social relationships. From there, we can look at an individual domain, which includes our actions and our experiences. This is typically how we experience ourselves every day. Included in this are our sensory, motor, emotional, and cognitive processes. We can examine both of these levels as they influence our behavior and experience.

The final domain focuses on the physiological processes that make up our central and peripheral nervous systems. This will take us to the cortical network level, and you will see how neurons and their connections form the basis of information transfer and processing. The most basic level you will be introduced to in this book is the genetic level, which in turn will require us to understand how environmental conditions influence genetic processes. You will also learn about a related process, *epigenetics*,



How do our neurons form networks?

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in which genes can be turned on or off by the environment, and these mechanisms can be passed on to future generations without actually changing the basic genetic structure.

As you will read throughout this book, since the 1970s researchers have come a long way in understanding how various levels ranging from genetics to culture interact with each other in a complex manner. In the next section of this chapter, we will turn to a consideration of culture through the ages that will take us to an understanding of behavior and experience on a number of levels. In later chapters, you will be introduced to additional levels of analysis.

To help focus their work, scientists often concentrate primarily on one of these levels of analysis. However, in this book a more integrative approach that draws on a number of these levels will be used. You should not take any one of these levels of analysis as being more important or truer than another. A similar plea was made by George Engel in 1977 when he helped to develop the biopsychosocial approach to understanding mental illness.

Biopsychosocial Approach

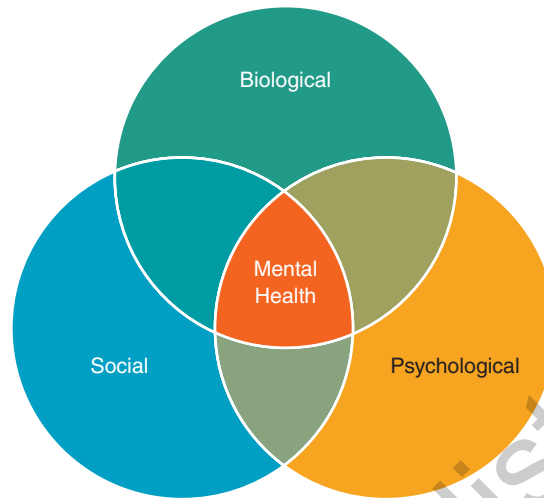
In his 1977 paper in the journal *Science*, George Engel introduced the term *biopsychosocial*. He suggested that individuals with mental illness or another medical disorder should be understood from more than just a biological perspective. Type 2 diabetes, for example, is a disorder, but it is also related to how the person eats and exercises. Likewise, depression and anxiety can be influenced by social and emotional factors. Thus, it is necessary to see the signs and symptoms of the disorder in a larger context. Otherwise, one has a limited perspective that ignores the social, psychological, and behavioral dimensions of any disorder. Therefore, as a mental health professional, you would want to know more about an individual than just the symptoms that the person describes, as represented in Figure 1.2. This could be their family life, work conditions, and cultural practices as well as eating habits and how the person exercises.

CONCEPT CHECK

- Identify the three major themes this book takes in regard to psychopathology.
- What does *level of analysis* mean? Identify three domains presented for studying psychopathology. Which is the most important?
- How is the biopsychosocial model related to the broader levels of analysis approach?

FIGURE 1.2 ■ The Biopsychosocial Model

Individuals with mental illness should be understood from an integrative perspective that includes psychological, social, and biological variables.



THE RELATION OF EVOLUTION AND CULTURE TO PSYCHOPATHOLOGY

Considering psychopathology from evolutionary and cultural perspectives goes beyond the traditional psychological and physiological considerations (Ray, 2013). These perspectives make us realize that for at least the last 100,000 years, humans have been social beings who have lived within the context of a group in which there were interactions related to gathering and preparing food, having sexual relations, and being part of a community. Cultures developed from this.

The **cultural perspective** emphasizes the social world in which a person lives (Krendl & Pescosolido, 2020; López & Guarnaccia, 2000). In this sense, culture can be viewed as “information capable of affecting individuals’ behavior that they acquire from other members of



In many countries, informal networks of families, friends, and other community members are utilized to care for those with mental illness.

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their species through teaching, imitation, and other forms of social transmission” (Richerson & Boyd, 2005, p. 5). From this perspective, culture can be seen as a system of inheritance. Humans learn a variety of things from others in their culture, including skills, values, beliefs, and attitudes. Historically, parents and others taught children how to perform particular tasks such as farming, toolmaking, and hunting. In addition, human culture has formalized learning in the form of schools and apprenticeships. Cultures also differ in their level of economic development and the amount of resources they devote to mental health. In *Cultural LENS: Global Mental Health: Available Treatment*, the availability of mental health professionals across the world is described.

CULTURAL LENS

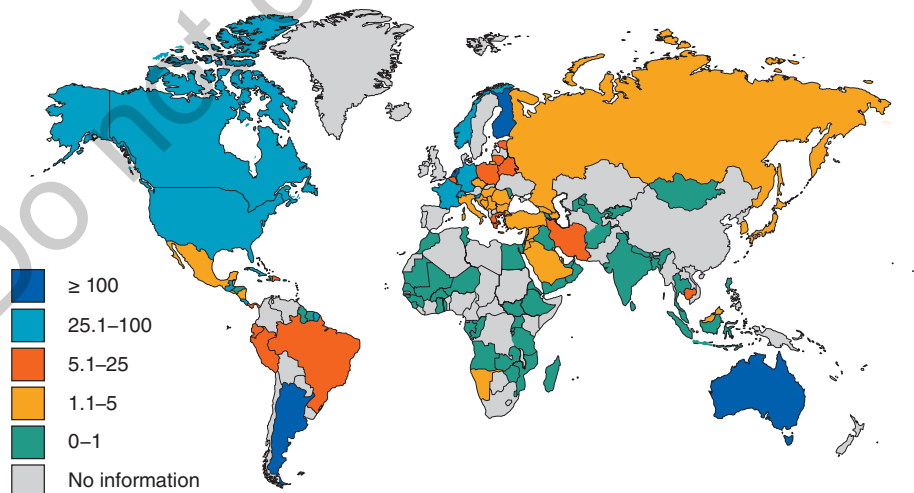
GLOBAL MENTAL HEALTH: AVAILABLE TREATMENT

Mental health services are available worldwide. However, they differ by country in terms of how available they are and the nature of the services offered. In countries in which individuals have a higher income, such as the United States, Canada, England, Germany, France, Japan, and Australia, there are many more mental health care workers, such as psychologists and psychiatrists, than there are in countries with lower incomes on average, such as India, China, and many countries in Africa. Figure 1.3 shows the number of psychologists throughout the world in 2019. This map illustrates the number of psychologists per 100,000 people in the country.

High-income countries have the greatest number of mental health professionals, and low-income countries the least. Figure 1.4 shows the number of psychiatrists, psychologists, nurses, and social workers by income level. The governments of about one third of all countries do not have a specific budget for mental health. In many countries, informal networks of families, friends, and other community members are utilized to care for those with mental illness. These data are updated regularly on the World Health Organization (WHO) website.

FIGURE 1.3 ■ Where Are There Psychologists Available for Those With Mental Illness?

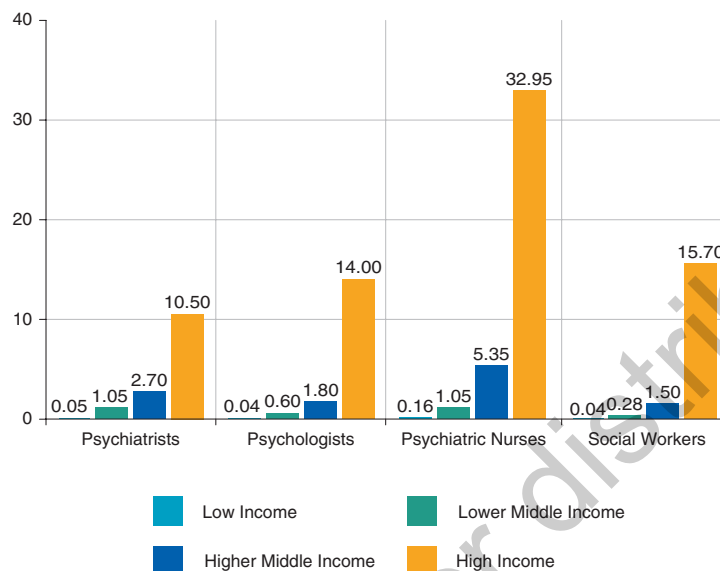
Human resources for mental health care (psychiatrists, psychologists, nurses, and social workers) vary by country. This figure shows the number of psychologists available by country for every 100,000 people in that country.



Credit: World Health Organization. (n.d.) *Psychologists working in mental health sector (per 100,000)*. [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/psychologists-working-in-mental-health-sector-\(per-100-000\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/psychologists-working-in-mental-health-sector-(per-100-000))

FIGURE 1.4 ■ Do High-Income Countries Have More Mental Health Workers?

High-income countries have the greatest number of mental health professionals and low-income countries the least. This graph shows human resources in terms of mental health professionals in each income group of countries. The numbers are based on each 100,000 of population.



Credit: Reprinted from *The Lancet*, Vol. 370, Issue 9590, Shekhar Saxena, Graham Thornicroft, Martin Knapp, and Harvey Whiteford, "Resources for mental health: Scarcity, inequity, and inefficiency," pp. 878–889. Copyright © 2007, with permission from Elsevier.

Thought Question

What are some ways mental health care professionals in both higher- and lower-income countries can work together to increase the availability and quality of mental health resources in the countries with the fewest resources?

For a more complete understanding of psychopathology, it is important to understand the particular rules a culture has for expressing both internal experiences and external behaviors (Marsella & Yamada, 2000). One simple way to distinguish cultures is whether they emphasize the importance of individual achievement, such as those cultures seen in the United States and Europe, or whether they emphasize collective values and working together, as seen in Asian cultures, such as those of China and Japan. This in turn can influence the type of psychological distress experienced. For example, social anxiety is more common in collective as compared to individualistic cultures (Hong, 2018). What may be a common stress-free experience in one culture may lead to stress and anxiety in another. Even what individuals tell themselves about having a mental disorder can vary from culture to culture. Likewise, artistic and spiritual experiences considered normal in one society may be considered "crazy" in another.

Historically, a simplistic view of culture has emphasized how each culture is locally determined, without reference to universal psychological processes. When universal ways of behaving, feeling, or thinking are suggested, this view assumes that this information is acquired by social learning. Although this is an important aspect of culture, such an emphasis will quickly lead you into the outdated nature–nurture debate, which lacks the insights of modern evolutionary and neuroscience perspectives. For example, consider the question of why foods with milk are found in European diets and not in Asian diets. One answer could be cultural preferences. However, a more complete answer includes the fact that Northern Europeans have a gene that allows them to continue digesting milk products after the traditional time of weaning.

This gene would have conferred an advantage to those who carried it since dairy products are a high-quality food source, and over time—probably less than 10,000 years—that advantage would

have allowed these genes to be passed on to almost all of the European population. Today, 98% of all individuals in Sweden have this gene. In the United States, with its large European migration, 88% of white Americans are lactose tolerant, meaning they can digest milk products. Native Americans, on the other hand, are lactose intolerant. Overall, this suggests a close connection between cultural and evolutionary perspectives.

The picture becomes even more complicated in terms of psychological processes. There is a particular form of a gene (5-HTT) related to the neurotransmitter serotonin that is associated with being prone to developing higher levels of anxiety and depression. When its occurrence is examined cross-culturally, studies have shown that 70% to 80% of Japanese individuals carry this gene, whereas only 40% to 45% of Europeans carry it (see Ambady & Bharucha, 2009). Likewise, brain imaging studies have shown that cultural values can influence which areas of the brain are active during self-evaluation (Chiao, 2011; Knyazev et al., 2021).

The larger question raised by these studies is whether this genetic variation influences the manner in which cultural structures formalize social interactions and how this might be related to what is considered mental illness. That is, a society that has more individuals who are prone to anxiety may develop different forms of social interaction than one that does not. Not only can the environment influence genetics, but genetics can also influence culture. This work is just beginning to be applied to viewing psychopathology from a cultural standpoint.

Considering how a condition such as lactose tolerance is found in some groups of individuals around the world and not in others gives us additional insights into when this condition may have developed. Since lactose tolerance is not found throughout the world but is limited to particular groups, one would assume that it was not part of the human condition when humans migrated out of Africa some 100,000 years ago. We can ask similar questions in terms of psychopathology. One question might be how long, in terms of our human history, a particular psychopathology has existed.

Let's take schizophrenia as an example. A WHO study examined the presence of schizophrenia in a number of countries with very different racial and cultural backgrounds (Sartorius et al., 1986). If schizophrenia had an important environmental component, then you would expect to see different manifestations of the disorder in different cultures. Higher-income countries would show different rates from those of lower-income countries. Areas with different climates might also show differences, as is the case with multiple sclerosis. What these authors found was that, despite the different cultural and racial backgrounds surveyed, the experience of schizophrenia was remarkably similar across countries. Likewise, the risk of developing schizophrenia was similar in terms of total population presence—about 1%. Further, the disorder had a similar time course in its occurrence, with its characteristics first being seen in young adults.

The evolutionary and cultural perspectives help us ask questions such as what function a disorder might serve, as well as how it came about. For example, humans fear animals they have little contact with but do not fear more likely causes of danger such as automobile accidents. Unlike other species, humans live in environments that are different in many respects from those that shaped our early evolutionary history. We have developed large cities and the technological abilities to communicate instantly around the planet. We have also developed ways to mitigate conditions such as the weather experienced in our personal environment that would have played a greater role in our lives thousands of years ago. Compared with other species, humans live less in nature and more in culture. However, it is important in considering psychopathology to remember the environment in which humans as a species developed.

In thinking about our evolutionary history, we can consider how one basic human process developed in relation to an earlier one. For example, in the same way that pain can be seen as a warning system to the body to protect it from tissue damage, anxiety may have evolved to protect the individual from other types of potential threats. In fact, an evolutionary perspective has led to neuroscience research findings that social processes such as feeling rejected use similar brain circuits as those processes involved in physical pain. Further, many of the outward expressions of social anxiety parallel what is seen in dominance interactions in primates. Submissive monkeys avoid contact with more dominant ones, just as humans experiencing social anxiety avoid more dominant individuals. Thus, one hypothesis would be that anxiety may have its evolutionary origins in dominance structures. If this were true, we might expect to see

some relationship to sexual instinctual processes, as is the case with dominance. Indeed, social anxiety begins to show just prior to the onset of puberty—around 8 years of age. Of course, this merely shows how evolution may be related to anxiety. The evolutionary perspective can help us think about the roots of psychopathology as well, and it will be a recurring theme of this text.

Is Psychopathology Universal?

If psychopathology is part of our human makeup, then we would expect to see similar manifestations of it worldwide. One classic study was performed by Jane Murphy (1976) of Harvard University. It dates from the 1970s when mental illness was considered to be related to learning and the social construction of norms. In fact, some suggested that mental illness was just a myth developed by Western societies. In this perspective, neither the individual nor their acts are abnormal in an objective sense. One important implication of this view was that what would be seen as mental illness in a Western industrial culture might be very different from what was seen as mental illness in a less developed rural culture. That is to say, mental illness in this perspective was viewed as a social construction of the society. The alternative to this perspective is more similar to other human processes such as emotionality, in which humans throughout the world recognize similar expressions of the basic emotions. If mental illness is part of our human history, as evolutionary psychologists suggest, then we would expect to find similar manifestations across a variety of cultures.

Murphy first studied two geographically separate and distinct non-Western groups: the Inuit of northwest Alaska and the Yoruba of rural tropical Nigeria. Although many researchers of that time would have expected to find the conceptions of normality and abnormality to be very different in the two cultures, this is not what Murphy found. She found that these cultures were well acquainted with disturbed thought and behavior processes in which a person was said to be “out of his or her mind.” This included the person doing strange things as well as hearing voices. Murphy concluded that processes of disturbed thought and behavior similar to schizophrenia are found in most cultures and that most cultures have a distinct name in their language for these processes.

In addition, Murphy reported that these cultures had a variety of words for what traditionally is referred to as neurosis, although today we would call it anxiety or depression. Mood disorders include feeling anxious, tense, and fearful of being with others as well as being troubled and not able to sleep. One Inuit term was translated as “worrying too much until it makes the person sick.” Thus, it appears that most cultures have a word for what has been called neurosis, what has been called psychosis, and what has been called normalcy. What is also interesting is that many cultures also have words for people who are “out of their mind” but not “crazy”: witch doctors, shamans, and artists.

To add evidence to her argument that psychopathology is indeed part of our human nature, Murphy also reviewed a large variety of studies conducted by others that looked at how common mental illness was in different cultures. The implication here is that if its prevalence is similar in cultures across the world, then it is more likely to be part of the human condition rather than culturally derived. What these studies suggest is that many forms of mental illness such as schizophrenia are found at similar rates around the world. Overall, this research established that mental illness was not a created concept by a given culture, but rather part of the human condition in both its recognition and its prevalence. However, one’s culture plays a role in how mental illness is manifested in a specific society.

CONCEPT CHECK

- What evidence would you cite to characterize the relationships among genetics, culture, and evolution in human development?
- Is psychopathology universal? What kinds of evidence show that it is? What evidence is there for cultural differences in psychopathology?

HISTORICAL CONSIDERATIONS IN UNDERSTANDING PSYCHOPATHOLOGY

Humans have gone from a worldview in which magic, including the idea that you could be possessed by spirits or demons, produced mental illness to a time in which our scientific understanding describes a complex set of processes on many levels that contribute to mental illness. As you have seen, these levels go from society and culture to research from the neurosciences, including the role of genes and neurons.

Today, we see those with mental illness as whole people with both abilities and deficits. In terms of the future, there is a growing movement to empower people with mental disorders to have a greater say in their treatment. A person's high functioning and ability to make decisions are not completely taken away by having a mental disorder. The person is still able to describe their experiences and, in the best of conditions, to ask others for help. However, this is getting ahead of ourselves.

Psychology seeks to describe and understand human behavior and experience. In fact, as humans, we have a long history of trying to understand ourselves. In this section, you will see some of the historical conceptions that have influenced psychology (see Finger, 2000, or the classic Boring, 1950, for more information). One of these conceptions is the role of the body and its involvement in our mental processes. Some of the ideas we will examine date back thousands of years yet still influence our views today.

Ancient Greek and Roman Influences—Mental Illness Involves the Brain

Beginning with Pythagoras in the 6th century BCE, whom we know for his theorem concerning the sides of a right triangle, there was an emphasis on identifying the underlying scientific principles that may account for all forms of behavior. Pythagoras not only coined the term *philosophy*, which can be translated as love of meaning or wisdom, but also began to set the stage for understanding human behavior and experience as related to internal processes and natural causes. This was in contrast to the prevailing view that human behavior and related disorders reflected the actions of the gods, such as the belief that mental illness was a divine punishment. Pythagoras was one of the first to see the brain as the structure involved in human intellect as well as in mental disorders.

In the next century, Hippocrates, often seen as the father of modern medicine, moved this concept to the next level with his emphasis on careful observation and a continued articulation of the idea that all disorders, both mental and physical, should be sought within the patient. His view of the brain suggests it is the brain that produces “joys, delights, laughter and sports, and sorrows, griefs, despondency, and lamentations.” He further notes that “we become mad and delirious, and fears and terrors assail us, some by night, and some by day, and dreams and untimely wanderings, and cares that are not suitable, and ignorance of present circumstances, desuetude, and unskillfulness. All these things we endure from the brain” (Hippocrates, 400 BCE/n.d.).

Galen (130–200 CE) was a physician in the Roman Empire who influenced Western and Islamic thought until the Renaissance. Some see him as a representation of the beginning of experimentation in medicine because he used dissection to better describe the structure and function of physiological structures. His work as a physician to the gladiators would have also given him firsthand knowledge of the consequences of trauma and its treatment.

During his lifetime, Galen wrote hundreds of treatises on science, medicine, and philosophy. He was largely a champion of *empiricism*, which stresses the use of direct observation as a means of gaining information. Writing in his treatise *On Medical Experience*, Galen (ca. 165–175 CE/1944) stated, “I am a man who attends only to what can be perceived by the senses.”

From chance encounters with human accidents and trauma and his anatomical work using a variety of animals, Galen carefully described the brain; the cranial nerves that are involved in sight, smell, movement, and other functions; and the nerves of the sympathetic nervous system involved in fight-or-flight reactions, among others. From his experiments with animals, Galen knew that blood was transported throughout the body. He had an early theory of how blood was changed by the organs based on the idea of *spirits*. Galen believed that blood was made in the liver, which gave it *natural spirits*. It then went to the heart where it developed *vital spirits* and then, with the introduction of air to the blood on the way to the brain, it was transformed into *animal spirits*. These animal spirits could be stored in the



New doctors take the Hippocratic Oath, so named after the Greek physician Hippocrates.

Pat Greenhouse/The Boston Globe/via Getty Images

ventricles of the brain until they were needed. Today, we think in terms of hormones rather than spirits. Galen's works became the encyclopedia of medicine for the next 1,500 years.

Psychopathology in the Middle Ages

Although the Greek and Roman periods included individuals who attempted to understand psychopathology in a more humane way, this perspective disappeared as these civilizations declined. During the Middle Ages in Europe, disease and especially mental illness was seen from a religious perspective, with the devil being a major player. That is, when someone was observed to act in strange and bizarre ways, it was assumed that the person was a witch or possessed by the devil. As such, mental illness did not exist. What existed was the devil working through individuals. This view continued in Europe until the 1800s, especially among people with less education.

One of the classic books in this genre was the *Malleus Maleficarum* (The Hammer of the Witches), published in the 1480s. This book was written by two German priests and approved by the pope. It went through a number of editions and became the handbook of the Inquisition. It explained how witches existed and flew through the air as well as how they should be tortured if they did not confess. In a "catch-22," the captured witches were tied to a device and lowered into cold water. If they floated, they were thought to be possessed by the devil and most likely were then killed by hanging or fire. If they sank to the bottom and drowned, then they were innocent. During the interrogations, witches were not to be left alone or given clothes, since the devil would visit them or hide in their clothing. Although the writers of the time did not understand the nature of psychopathology, they did describe in some detail particular characteristics of different disorders including bipolar disorder, depression, and such psychotic processes as hallucinations and delusions.

From the Renaissance to the 1700s—The Beginning of Modern Science

Between the time of Galen and the Renaissance, Western science and medicine remained fairly stagnant, with little new knowledge being added. One problem during this period was that authority, which was often the Church, determined what was true or not. Since authority was able to use its own standard of truth, it was difficult to argue another position. For example, the Church was able to say that the earth was the center of the universe, and that was that.



During the Middle Ages, mental illness was perceived as the work of the devil, and individuals were accused of witchcraft.

iStock.com/Nastasic

Beginning in the 14th century, however, a new spirit began to emerge in Europe. It influenced art, literature, politics, and science. In art, there was a desire for a sense of realism, which led artists such as Leonardo da Vinci to carefully study the human body. He performed dissections on animals and human cadavers to carefully reveal the structure of organs. Figure 1.5 shows one of da Vinci's drawings.

With the detailed drawings of human anatomy created by da Vinci and other artists of the time, there was now the possibility for the scientists of the 1600s to consider function. One important focus was the manner in which the nervous system allows us to perform both involuntary and voluntary functions. How physiological processes are involved in remembering, moving, feeling, and thinking became topics of consideration. Mechanical models emerged, as illustrated by the writings of French philosopher René Descartes (1596–1650).

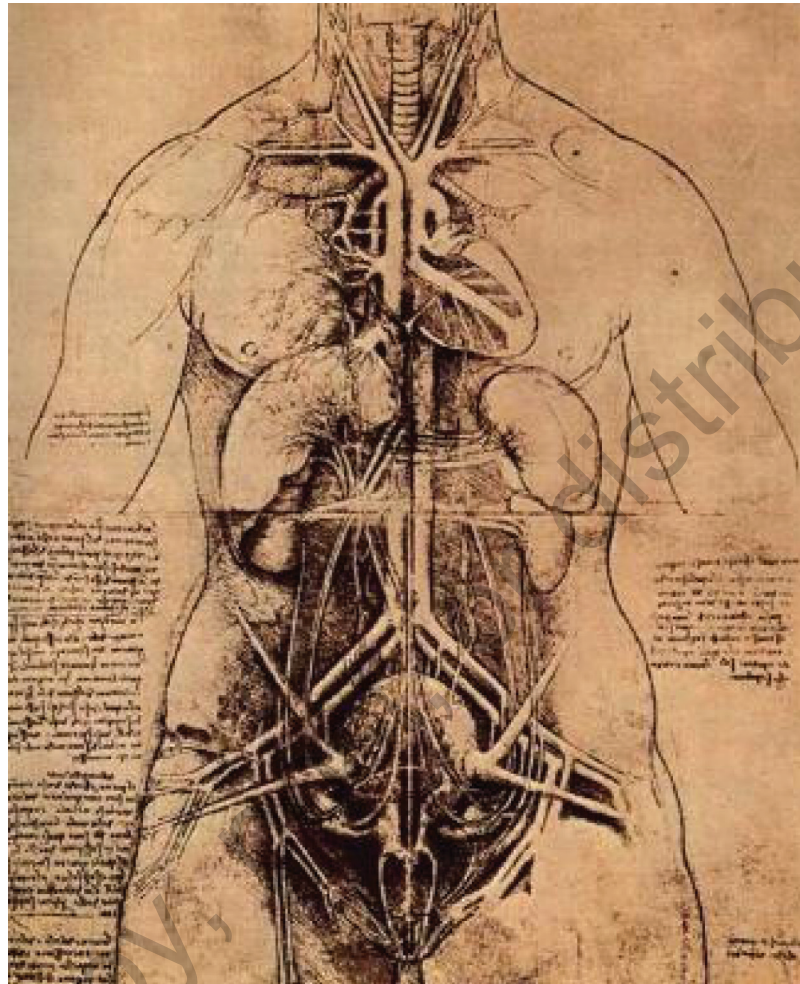
Descartes was intrigued by mechanical machines such as the large clocks in Europe with moving figures or water displays in large fountains. By analogy, he assumed that reflexes or involuntary actions of organisms were based on similar principles. Thus, moving your hand quickly from a hot stove or even digesting food was seen as a mechanical operation. For Descartes, all animal behavior could be explained by mechanical principles, as could human involuntary actions. In Figure 1.6 from Descartes' work, you can see the mechanical means by which a hot fire would cause an involuntary or reflexive movement.

The important distinction that continues today is that behavior can be categorized as either involuntary or voluntary. Voluntary actions such as thinking or consciously performing an act were different in that they required a mind, and humans were the only organism to have a mind, according to Descartes. By thinking, humans can know with certainty that they exist—thus, the famous philosophical statement of Descartes, “I think, therefore I am.”

Given his understanding that the bodies of animals are totally mechanical and that humans have both a body and a mind, Descartes created a mind–body distinction that science has had to face in its explanations. The problem is, how can a material body including the brain be influenced by an immaterial process such as the mind? How can a thought influence a cell in the brain?

FIGURE 1.5 ■ Leonardo da Vinci Drawing of the Structure of Human Organs

Before Leonardo da Vinci, there were few drawings of actual human organs. Beginning in the 14th century, da Vinci performed dissections on animals and human cadavers. He was then able to draw the structure of organs.



Credit: The Picture Art Collection/Alamy Stock Photo

Although today we generally talk about the mind–body problem, the metaphysics of Descartes' era would often make the distinction between body and soul. Descartes answered this problem by suggesting that the rational soul was able to control the mechanical body by having both functions come together in one particular organ of the brain, the pineal gland. It is in the pineal gland, Descartes claimed, that the mind not only controls the body but also senses the nature and flow of the mechanical nervous system.

Today, most neuroscientists see the mind as resulting directly from the brain and believe that the mind–body problem is not actually a problem to be solved. However, the question of whether particular behaviors seen in individuals with mental illness represent involuntary processes performed without the benefit of a conscious mind has plagued our legal understanding of mental illness.

In the 1600s, science as a way of knowing about the world began to emerge. At the beginning of this period, prior authorities such as Aristotle or the Church determined the worldview. In this century, Galileo led a movement that would eventually replace authority with experimentation. This movement toward experimentation was greatly aided by Galileo's own inventions, such as the telescope, the thermometer, an improved microscope, and a pendulum-type timing device. Each of these instruments allowed people to experiment and answer for themselves the questions of nature. With Galileo's work, a new science based on observation and experimentation was beginning. Galileo was part of a revolution that was to challenge authority. In the 1680s, Isaac Newton's classic work *Principia* was published

FIGURE 1.6 ■ Involuntary or Reflexive Movement

In this drawing by Descartes from the 1600s, the person is shown touching the fire with his foot, which results in an impulse being sent to the brain.



Source: Descartes, R. (1664). *L'homme et la formation du fœtus*. J. Le Gras, p. 27.

(Newton, 1687/1969). Designated by science historian Gerald Holton (1952) as “probably the greatest single book in the history of science,” this work describes Newton’s theories of time, space, and motion as well as his rules of reasoning for science.

CONCEPT CHECK

- Concepts in understanding psychopathology date back thousands of years yet still influence our views today. What important contributions did the ancient Greeks and Romans—particularly Pythagoras, Hippocrates, and Galen—make to current views of psychopathology?
- Describe the shift from authority to science as a way of knowing that happened during the Renaissance. Specifically, what did Leonardo da Vinci, René Descartes, Galileo, and Isaac Newton contribute during this period that led to this shift?

DISCOVERING THE FUNCTION OF THE BRAIN IN BEHAVIOR AND PSYCHOPATHOLOGY

The developing spirit of science during the 1600s set the stage for a new breed of scientist to emerge. One of these scientists was an English doctor, Thomas Willis (1621–1675). He was interested in neurology and in fact coined that term along with a number of anatomical terms, such as *lobe*, *hemisphere*, and *corpus striatum*. He may also have been the first person to use the word *psychology* in English.

Willis sought to combine the study of brain structure and function. He suggested that lower-brain structures were responsible for more basic functions of life and that these structures could be found across a variety of vertebrates. On the other hand, those structures located higher in the brain must be involved in more advanced processes seen in higher organisms such as humans. Implicit in this idea is a break with Descartes' suggestion that animals are only machines.

By the end of the 1700s, the nervous system had been completely dissected and the major parts described in detail. The brain was seen to be composed of gray matter and white matter, terms we continue to use today (Figure 1.7). White matter was involved in moving information to and from the gray matter. Today, we have a fuller understanding of brain structure, with the thin outer shell of the brain consisting of cells, which appear to be a darker color and are thus called *gray matter*. Underlying this are the axons, which transfer information throughout the brain. Their myelin sheaths are lighter in color, and thus these areas are referred to as *white matter*. Myelin is made up of fats and proteins and wraps around axons like insulation does around electrical cables, resulting in an increased speed of information transmissions.

Also by the 1700s, scientists knew that there was a general pattern in all human brains in how the brain was structured in terms of surface structures or bumps, which were called *gyri*, and the grooves between them, referred to then and now as *sulci* and *fissures*. The present-day terms used to describe parts of the brain also come from Latin, so the lobes of the brain are the *frontal lobe*, *parietal lobe*, *temporal lobe*, and *occipital lobe*. This can be seen in Figure 1.8.

Scientists of the 1700s also determined that the nervous system had a central division consisting of the brain and spinal cord and a peripheral division consisting of nerves throughout the body (Figure 1.9).

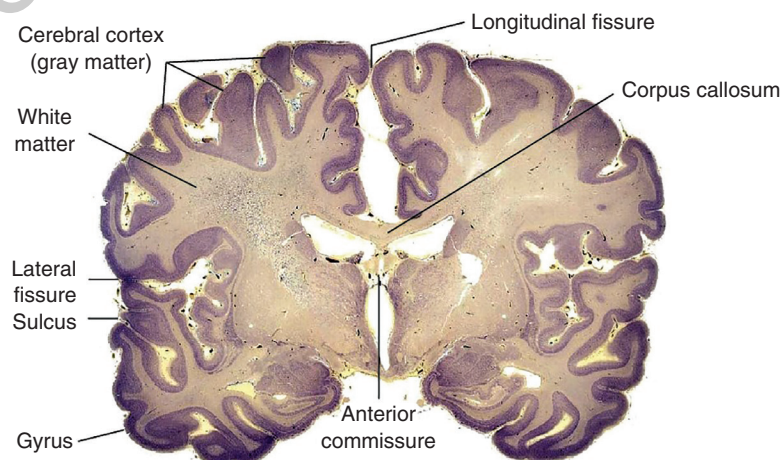
The 1700s to the 1900s

With the basic structure of the nervous system known, scientists of the 1700s began a quest to understand how the system developed and how it worked. One of the contributions of this quest was the realization that the body created and used electrical activity in its basic processes. Today, this electrical activity shows differences in various types of mental illness.

Scientists such as Luigi Galvani and Emil du Bois-Reymond were able to show that electrical stimulation causes a frog's leg to twitch. With this demonstration, nerves began to be thought of as wires through which electricity passes. Further, it was determined that the brain could itself produce electrical activity. The greater impact of this discovery was that electricity was also something that could be

FIGURE 1.7 ■ Gray Matter and White Matter in the Brain

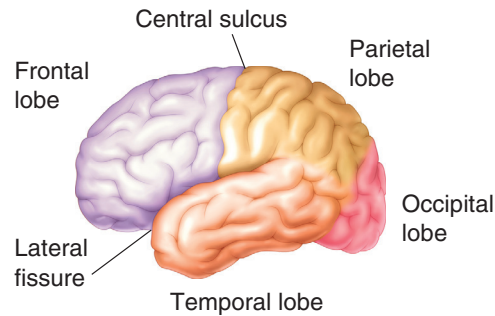
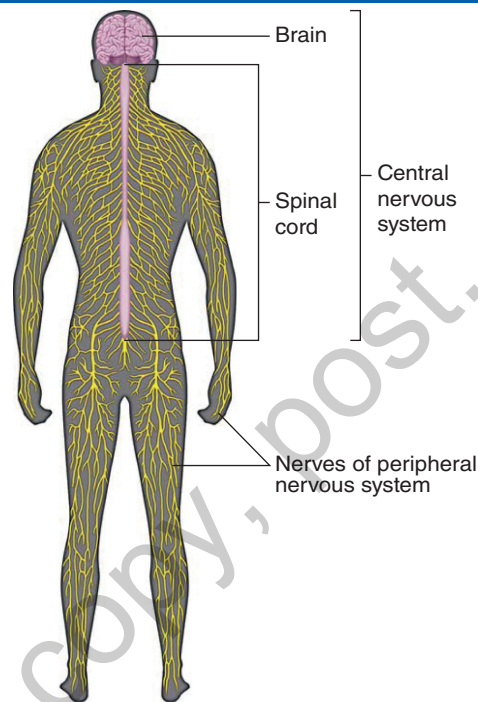
The outer level of the brain contains cells that appear darker in color and thus are called *gray matter*. Axons transfer information throughout the brain. Their myelin sheaths are lighter in color and thus are called *white matter*.



Credit: Reproduced (or adapted) with permission from Caution-Caution-Caution-<http://brainmuseum.org>. Specimens used for this publication are from the Defense Health Agency Neuroanatomical Collections Division of the National Museum of Health and Medicine, the University of Wisconsin and Michigan State Comparative Mammalian Brain Collections supported by the U.S. National Science Foundation.

FIGURE 1.8 ■ The Lobes of the Brain

The present-day terms used to describe parts of the brain come from Latin, so the lobes of the brain are called the *frontal lobe*, *parietal lobe*, *temporal lobe*, and *occipital lobe*.

**FIGURE 1.9** ■ Distribution of the Nervous System

measured, thus setting the stage for the following centuries in which experimentation in the electrical activity of the brain and body would play a significant role in physiology and psychology.

One discovery during the early part of the 1800s was that there is a system for sending information to the muscle, which results in muscle movement, and another system for bringing sensory information back to the brain. When you hold a glass, for example, the sensory or *afferent* system relays information on what the object you are touching feels like, whereas the muscular or *efferent* system tells the muscles how to hold and pick up the glass. Thus, in many nerves there are connections for both receiving and sending information (Figure 1.9). These pathways are called *fiber tracts*.

At the level of the spinal cord, these fiber tracts split, with the sensory information being conveyed by the dorsal root and the action or motor information involving the ventral root. By the 1850s, Hermann von Helmholtz had measured the speed of the nerve impulse and found it to be around 90 feet a second, which is a little more than a mile a minute. This is much slower than the speed of electricity in a copper wire, which approximates the speed of light (186,000 miles per second). However, the advantage of the nerve impulse—as shown in later research—is that it is not diminished over the length of its travels.

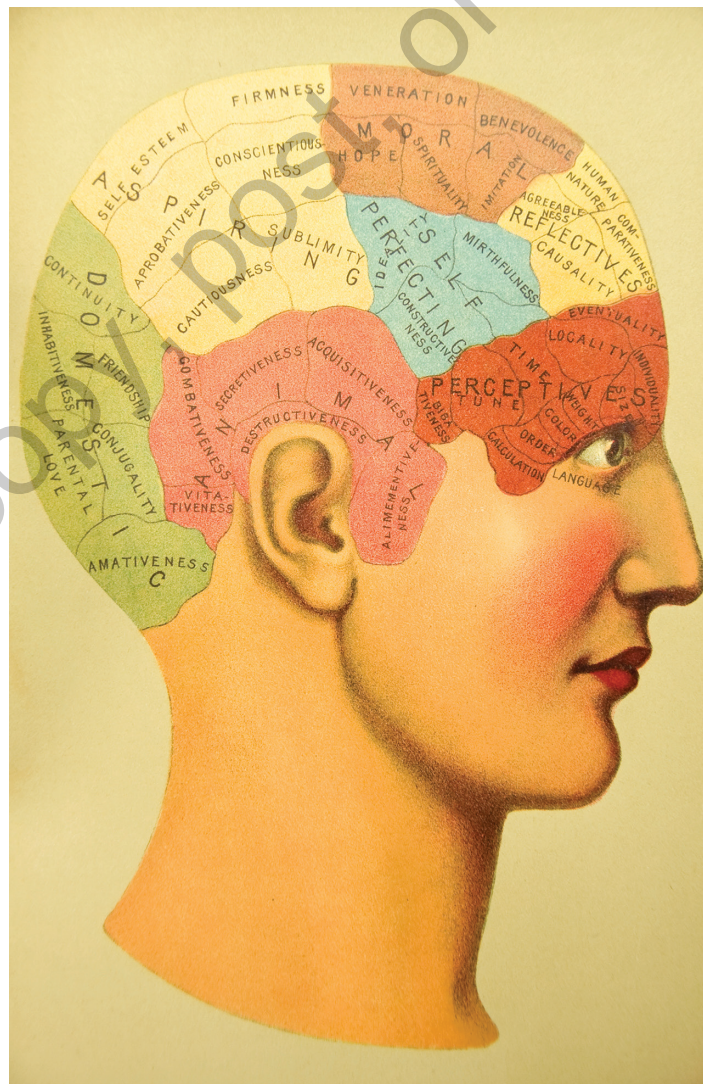
One important realization of the 1700s was that particular functions could be localized to different parts of the brain. One person often cited today is Joseph Gall. Although Gall was correct in suggesting that the frontal part of the brain involved higher cognitive processes and social determinations, he was wrong in assuming that somehow brain function would be reflected in the shape of (and bumps on) the skull. If an individual were good at a particular ability, Gall assumed that their skull would look different from another person's skull who was not as talented. To support this idea, he examined the skulls of people at the extremes, such as great writers, statesmen, and mathematicians, as well as criminals, people with mental illness, and individuals with particular pathologies. Overall, he defined 19 processes that he thought humans and animals both performed and another 8 that were unique to humans (Figure 1.10).

Gall and his followers never scientifically tested their ideas, and research by others did not support their claims about the structure of the head. What Gall did that *was* supported was to suggest viewing the brain as capable of performing a variety of functions and that these functions could be localized in different parts of the brain.

Abilities related to understanding and producing language greatly aided specific discoveries related to cerebral localization of function. Physicians began to collect considerable information on patients

FIGURE 1.10 ■ Gall's Structure of the Head

Gall's depiction of functional localization in the brain. Each area of the brain was thought to be related to a particular ability, such as art, humor, curiosity, and even the ability to murder another person.



Credit: iStock.com/Mark Strozier

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who had a variety of difficulties with language. Some patients could understand language but could not produce speech. Others had trouble remembering words. Still others could not understand language.

In 1861, a major turning point occurred when physician Paul Broca examined a patient who could understand language but could not speak. This patient was sent to Broca because of a much more serious medical condition and died shortly thereafter. Broca then performed an autopsy and reported an abnormality in an area on the left side of the frontal lobe. Based on a variety of cases, Broca was able to show that language is a left hemispheric process and that damage to the frontal areas of the left hemisphere results in problems in higher executive functions such as judgment, the ability to reflect on a situation, and the ability to understand things in an abstract manner (Finger, 2000). Today, the area related to language production in the left hemisphere is called *Broca's area* (Figure 1.11).

In 1874, Carl Wernicke published a paper that suggested that language understanding was related to the left temporal lobe. He studied patients who were unable to comprehend what they heard. At the same time, they were able to produce fluent speech, although it was incomprehensible and included nonexistent words. The specific place in the brain identified by Wernicke is now called *Wernicke's area* (see Figure 1.11). The discoveries of Broca and Wernicke helped the scientific community understand that language was made up of different processes, including the ability to understand and to produce language.

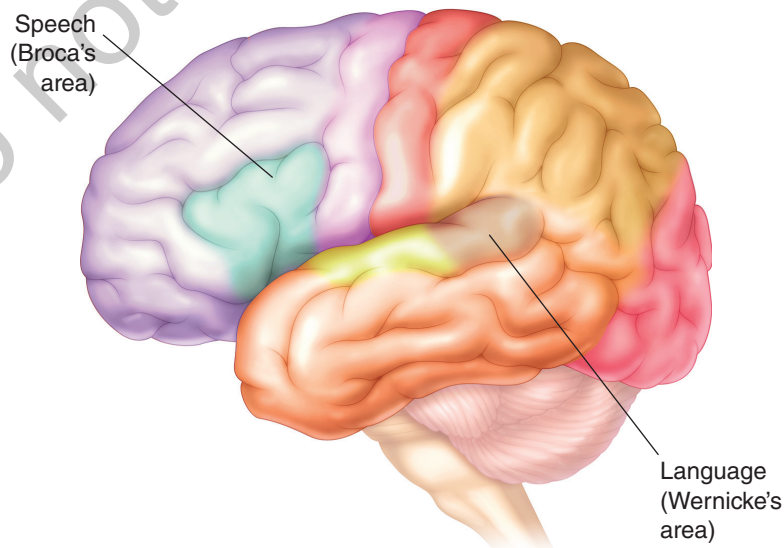
Throughout his career, British neurologist John Hughlings Jackson examined the brain from a developmental and evolutionary perspective (see Williamson & Allman, 2011). Hughlings Jackson saw the brain as composed of three levels. The earliest part of the brain to evolve was the spinal cord and brain stem, which controlled the vegetative functions such as breathing, sleep, and temperature control. The next level to evolve included the basal ganglia, which is connected to various other parts of the brain and is involved in movement. The third level to evolve included areas involved in higher cortical functions, including thought. It is the task of the higher level to keep the person aware of changes in the environment.

Within this framework, Hughlings Jackson suggested principles based partly on evolutionary analysis. One important principle is **hierarchical integration** through inhibitory control. By this, he meant that the various levels of the brain, such as the brain stem, the limbic system, and the neocortex, are able to interact with each other. Further, the type of interaction from the higher levels restricts or inhibits the lower levels.

In terms of mental illness, Hughlings Jackson (1894) suggested that symptoms such as illusions, hallucinations, and delusions are not in themselves the result of disease. Rather, it is when higher-level processes no longer inhibit the earlier evolved processes of the brain that these symptoms appear.

FIGURE 1.11 ■ Language Is Shown to Be Related to Different Parts of the Brain

Broca's area is a part of the temporal lobe that is involved in speaking a language. Wernicke's area is involved in understanding language.



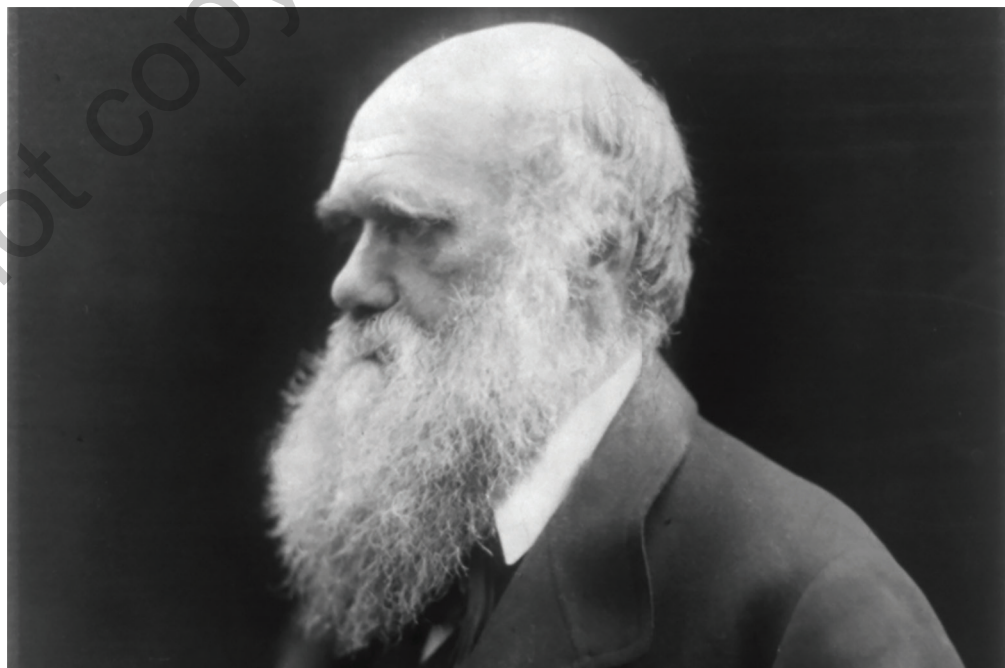
Hughlings Jackson referred to this process as *dissolutions*. Dissolutions are the reversal of the normal process of evolution. Thus, the primitive experiences seen in psychosis, for example, represent the primitive parts of the brain working normally. What is missing is the relationship of these primitive areas with higher mental processes.

A Growing Understanding of the Role of Evolution

Another big idea that emerged in the 1800s was that all of nature is in constant flow and that things, including organisms, change. This idea focused on the evolution of species and is most often associated with the work of Charles Darwin (1809–1882). **Variation** was to become one of the major components of Darwin's thinking concerning evolution. In fact, he began his thinking with the assumption that heritable variations can and do occur in nature. Darwin then presented the important realization that not all plants or animals that come into existence survive. Many organisms such as sea stars, for example, produce millions of eggs of which only a limited number survive. Depending on climate conditions, food supply, predator population, and a host of other factors including disease, only a limited number of those born survive to maturity.

Consequently, Darwin (1859) suggested, "There is a frequently recurring struggle for existence." Who is to survive in this struggle? Darwin suggested that if an individual has even a slight variation that helps it to compete successfully for survival, then over time the species will be made up more and more of members with these characteristics and less and less of individuals lacking these features. This process is referred to as **natural selection**. Darwin described this process in his 1859 book, *On the Origin of Species by Means of Natural Selection*.

Darwin later extended the theory of natural selection to include **sexual selection**, or the manner in which males and females choose a mate. This work is described in his 1871 book, *The Descent of Man*. Darwin noted that males and females differ not only in terms of organs of sexual reproduction but also in secondary sexual characteristics such as mammary glands for the nourishment of infants in females or facial hair in males. According to Darwin, sexual selection depends on the success of certain individuals over others of the same sex. Darwin also saw that besides same-sex competition, there is also competition to attract members of the opposite sex. There has been continuous debate and research concerning what attraction means for males and females of all species.



Charles Darwin

Julia Margaret Cameron; archived in Library of Congress Web Archives at <https://www.loc.gov/pictures/item/2004674431/>

Darwin began the *Origin* work with the question of natural selection especially as it related to animals. In *The Descent of Man*, he expanded these ideas to humans and also examined the question of sexual selection. In other works, such as his notebooks, he extended his research to cognitive and emotional processes. The broad question is that of how psychological functions have evolved. One answer he gives is that living in social groups produces an increase in cognitive ability. Darwin also presents notes on memory and habit, imagination, language, aesthetic feelings, emotion, motivation, animal intelligence, psychopathology, and dreaming (Gruber, 1974). One important question is the manner in which self-preservation, sexual selection, and social processes are reflected in psychopathology.

Overall, Darwin helped us understand the close connection between the environment and genetic processes, although Darwin did not know about genes at that time. Today, we know that this close connection makes such questions as what is responsible for our behavior, nature in terms of genes **or** nurture in terms of experiences, meaningless. As you will see later, genes influence our environment and our environment influences which genes are activated or not. It is this close connection that allows for change. Humans are born less fully developed at birth than many other species and thus are sensitive to changes in their environment as they continue to develop. Unlike animals that live within nature, humans largely live within the backdrop of our culture. Another part of the complexity with humans is our ability to reflect on ourselves and our world. In this way, a layer of thought, including expectation and imagination, is injected between the person and the environment.

A Search for Organization

One of the themes of the sciences of the 1800s was the search for organization. In understanding psychopathology, an important person associated with this search was the Paris physician Jean-Martin Charcot (1825–1893). Charcot sought to bring organization to an understanding of neurological disorders through a variety of methods such as careful observation. This observation was of both what the patient said, which we refer to today as **symptoms**, as well as what the clinician observed, or what we refer to as **signs**. The overall search was for which signs and symptoms go together to form a **syndrome**. An additional technique—autopsy, or examination of the body after death—further allowed for the connection of syndromes with underlying anatomy. Autopsies allowed for the determination of which tissue showed signs of pathology. Using this method, Charcot was able to confirm the correctness of Hughlings Jackson's thoughts on neurological organization. Overall, Charcot showed that the human motor cortex is organized similarly to that of other animals, with the left hemisphere controlling the right side of the body and vice versa.

Charcot is best known for initially describing brain disorder relationships for a number of motor-related disorders, including Parkinson's disease and multiple sclerosis. Charcot also established Tourette's syndrome as a separate disease when he asked his assistant Gilles de la Tourette to help him. De la Tourette wrote of cases that included a teenage boy who would show involuntary movements and scream swear words.

Charcot was also able to show that *conversion reactions*, in which the person shows outward signs of trouble hearing or seeing, or being unable to experience pain in the hand, were without any underlying pathology. During Charcot's time, conversion reactions were referred to as "hysteria." A young Sigmund Freud heard Charcot's lectures on hysteria, including the observation that psychological trauma could trigger these reactions. This became the initial basis of Freud's psychoanalytic work.

Charcot helped to integrate symptoms of a disorder with both psychological and brain processes. He also emphasized that, as in the case of hysteria, much of what had been seen as possession by demons could be viewed as resulting from natural causes. Thus, there was no need for faith healers or church rituals to remove evil spirits. This also encouraged society to view an individual with hysteria or another mental affliction as someone with a disorder rather than as an evil person. Much of Charcot's work took place at the Salpêtrière Hospital for the poor in Paris. These hospitals served as both research centers and places where treatments were developed for mental illness.



Charcot demonstrates a case of hysteria (painting by André Brouillet).

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HISTORICAL APPROACHES TO CARE FOR THOSE WITH MENTAL DISORDERS

In 1330, a convent of the order of St. Mary of Bethlehem became the first institution for people with mental illness in England. The institution eventually received a royal charter and, over the years, the word *Bethlehem* became *Bedlam*, and the institution was referred to as “Old Bedlam.” The English word *bedlam* comes from this institution. Various reports suggested that the inmates were often chained, treated cruelly, and not given proper food or clothing. As depicted in novels of the day, people in the 1700s would go to Bedlam to see the inmates as an outing in much the same way that today we might go to a zoo. In 1814, some 96,000 people visited the asylum.

In the 1800s, there was a campaign in England to change the conditions for the patients, which led to the establishment of the Committee on Madhouses in 1815. This ushered in a period of concern for the patients rather than seeing them as objects of curiosity as in the previous century. Treatment for patients during the 1800s brought new practices, including the therapeutic value of work.

During this period, there was a spirit throughout the world to adopt a “moral treatment of the insane.” Three important individuals in this movement were Benjamin Rush (1745–1813) in the United States, Philippe Pinel (1745–1826) in France, and Vincenzo Chiarugi (1759–1820) in Italy (Gerard, 1997). In the United States, Rush, who had signed the Declaration of Independence, later established a wing at the Pennsylvania Hospital in Philadelphia for the treatment of mental illness. He is often considered the father of American psychiatry and saw mental illness as a problem of the mind. However, he continued to practice bloodletting as the best treatment for mental illness. Rush developed a tranquilizing chair that he believed would change the flow of blood. Professionals tend to view this invention as neither helpful nor hurtful to the patient. He also wrote the first psychiatric textbook published in America.

In France, Pinel sought to change the way that people with mental illness were treated. He believed that mental illness could be studied using the methods of the natural sciences. In 1793, Pinel became the director of the Bicêtre asylum in Paris. As director, he reviewed the commitment papers of the patients, toured the building, and met with each patient individually. The building was in bad shape, and the patients were chained to walls. As Pinel (1806) himself described the institution, “everything presented to me the appearance of chaos and confusion” (pp. 1–2). Pinel petitioned the government and received permission to remove the chains, and he also abandoned the practice of bloodletting.

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The English word *bedlam* comes from the name of the first institution for people with mental illness in 14th-century England.
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In France, Pinel sought to change the way individuals with mental illness were treated. Here, he removes the chains from a patient.
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Pinel began to carefully observe patients and also talk with them. In these discussions, he attempted to create a detailed case history and to better understand the development of the disorder. This led to a classification system he published in 1789, which sorted mental diseases into five

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categories: melancholia, mania without delirium, mania with delirium, dementia, and idiocy. In 1795, Pinel became the chief physician at the Salpêtrière (which was then a hospice for poor women), where he remained for the rest of his life. Pinel is known as the father of scientific psychiatry.

Vincenzo Chiarugi was not well known outside of Italy until a paper published in the middle of the last century, which brought his name to the attention of Americans (Mora, 1959). Some 8 years earlier than Pinel, Chiarugi began removing chains from his patients. Early in his career, Chiarugi became the director of a large hospital in Florence that included special facilities for people with mental illness. The institution had been established with the passage of a law in 1774 in Italy that allowed these individuals to be hospitalized. As director of the hospital, Chiarugi created guidelines concerning how patients were to be treated. One of his rules specified that patients were to be treated with respect. He also directed that if restraints were required, they should be applied in a manner to protect the patient from sores and be made of leather rather than chains. He also used psychopharmacological agents such as opium for treatment.

In addition to mental health professionals, a number of other individuals promoted the humane care of people with mental illness. William Tuke (1732–1822) was a successful English merchant and a Quaker philanthropist. Some friends had told him of being turned away from an asylum in York, England, when they had tried to visit a fellow Quaker who had been confined there. Within a few days, the patient was reported dead. Tuke visited the asylum and found the conditions deplorable. Having retired, he decided to devote his life to creating alternative places where “the unhappy might find refuge” (Tuke, 1813).

In 1796, near the town of York, Tuke created the Retreat for Persons Afflicted With Disorders of the Mind. This Quaker retreat, as it was called, carried with it the idea that the individuals who were there should be given respect as well as good food and exercise. There were to be no chains or manacles. The model for the retreat was a farm, and the patients performed farm duties as part of their treatment. Others visited to learn of its operation. In 1813, the Quakers of Philadelphia founded the Friends’ Asylum for the Use of Persons Deprived of the Use of Their Reason, which was the first private psychiatric hospital in the United States. Both the retreat in York and the Friends’ Hospital of Philadelphia continue to function today as places for mental health treatment.

Another individual who contributed to the American mental health movement was Dorothea Dix (1802–1887). While teaching women at the East Cambridge House of Correction in



Dorothea Dix

S. J. Prentiss; archived in Library of Congress Web Archives at <https://www.loc.gov/pictures/item/2019630777/>

Massachusetts, Dix had her eyes opened to the terrible conditions these women faced. Dix also realized that a number of these women had some type of mental illness. She fought against the idea that those with mental illness could not improve or be helped. From this experience, she devoted her life to crusading for the improved treatment of people with mental illness. As part of this crusade, she visited every state east of the Mississippi River and testified before local and national legislatures. It is estimated that her work led to the establishment of some 40 mental hospitals in the United States and Europe.

By the 1950s, a number of hospital facilities existed in the United States for those with mental illness. These were administered by both state governments and private organizations. This changed in the 1950s as described in *LENS: Closing Mental Hospitals in America*. This was the result of both the development of psychiatric medications and a movement to switch to a more community-centered idea of mental health care.

LENS

CLOSING MENTAL HOSPITALS IN AMERICA

During the first half of the 20th century, state mental hospitals were the main source of treatment and care for those with serious mental disorders in the United States (see W. Fisher et al., 2009; Torrey, 1997). By the 1950s, there were more than a half million individuals in these hospitals. However, during the 1950s and 1960s, a number of events occurred that changed the way individuals with mental disorders were treated in the United States.



A closed hospital

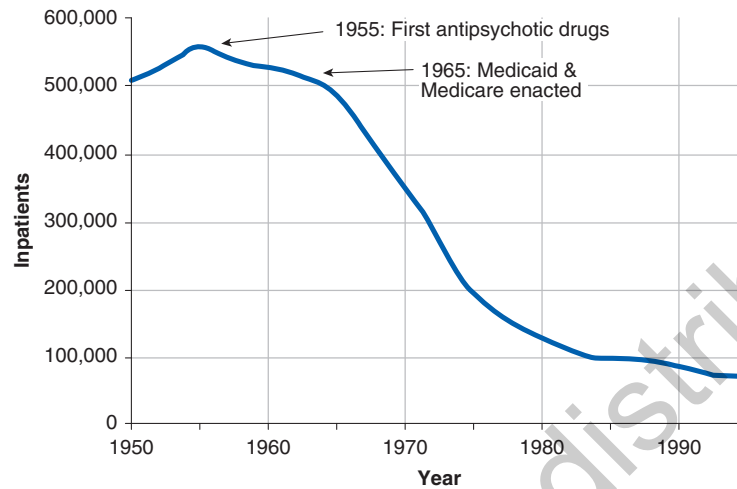
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One significant event was the introduction of antipsychotic medication. Prior to this, individuals with serious mental disorders such as schizophrenia needed a high level of care and protection. With the introduction of medications that would help treat the disorder, it was possible for some of these individuals to live outside the hospital.

The Community Mental Health Act of 1963, signed into law by President John F. Kennedy, reflected the growing understanding that all but a small portion of those in mental hospitals could

FIGURE 1.12 ■ When Did the Number of Individuals in Mental Hospitals in the United States Decrease?

Beginning in the 1960s, the number of individuals in mental hospitals began to decline.



Credit: Torrey, E. F. (1997). *Out of the shadows: Confronting America's mental illness*. Wiley.

be treated in the community. The basic idea was that community mental health centers would offer a variety of programs to help those with mental illness.

Although the population of the United States increased by 100 million between 1955 and 1994, the number of individuals in mental hospitals decreased from 550,239 to 71,619 (Torrey, 1997). The process of moving individuals from mental hospitals to the community was known as *deinstitutionalization*. Figure 1.12 shows this drastic change. Figure 1.12

Patients with mental illness who were placed in a hospital in the 1950s would have found their quality of life much worse than what is available today. However, for many individuals, the ideals of the community mental health movement were never fulfilled. The community facilities for those with mental illness were never fully funded or were not even built. This left many individuals without the type of treatment they needed. Some have found themselves homeless. Others who were disruptive or who concerned the community found themselves in jails and prisons with little mental health treatment and care. Similar deinstitutionalization occurred in the United Kingdom and other developed countries.

Thought Question

Our history has shown us that neither institutionalizing nor deinstitutionalizing all individuals with serious mental disorders has been effective. What do you think are some characteristics of a workable solution?

From the Past to the Present

In light of the history discussed thus far, mental illness has been considered from two perspectives. The first perspective involves spirituality, often invoking the devil or supernatural forces. This was seen in the worldview of many early humans and was also the perspective of the Christian Church, especially in the Middle Ages. Rituals were performed to remove the demon from the person, which rarely benefited the individual. Today, some churches offer forms of exorcism.

The second perspective is that of psychology and physiology in a broad sense. This perspective uses research and the sciences to understand what mechanisms lead to mental disorders. Treatment involves the manipulation of these mechanisms through psychotropic medications and psychotherapy. The discovery of psychotropic medications greatly changed treatment of mental illness around the world. As noted in the previous *LENS*, these drugs allowed for individuals to live in a more independent manner. Throughout this book, you will learn about the medications used to treat the major mental disorders.

CONCEPT CHECK

- What major advances in our knowledge of the brain and nervous system were made during the 1600s and 1700s?
- The research of John Hughlings Jackson has contributed much to our understanding of the brain. Describe his concepts of localization of function, three levels of the brain, and hierarchical integration through inhibitory control.
- What are the primary aspects of Charles Darwin's theory of evolution? How might those processes be reflected in psychopathology?
- What did Jean-Martin Charcot mean by the terms *symptoms*, *signs*, and *syndromes*? How did they help bring organization to an understanding of neurological disorders that is still used today?
- Indicate whether you agree or disagree with the following: Large institutions for treating people with mental illness should be closed and all treatment given in the community. Choose one side of the debate, and present evidence for your position.

BIOLOGICAL APPROACHES TO TREATING MENTAL ILLNESS

Throughout our history as humans, we have used natural substances to treat illness. Often, treatment was a hit-or-miss procedure as people learned which substances were more effective than others. With the development of better chemical methods in the past hundred years, scientists began to modify the substances and create them as drugs. Today, we refer to these substances, when used to address mental illness, as *psychotropic medications*. The overall category of psychotropic medications can be broken into categories based on what they were designed to accomplish. These categories include mood stabilizers, antianxiety drugs, antidepressant drugs, and antipsychotic drugs.

During the U.S. Civil War, a textbook by Union Army Surgeon General William Hammond suggested that lithium bromide be used to treat manic patients (see Perlis & Ostacher, 2016). However, it was not until 1949 that the Australian John Cade reported that lithium had a calming effect on animals and humans with mania. As you will see, lithium is still used to treat mania, which we refer to as bipolar disorder today. Drugs that came to be called *antidepressants* for the treatment of depression, such as monoamine oxidase inhibitors (MAOIs) and the tricyclic antidepressants (TCAs), were discovered through serendipity in the 1950s (Fava & Papakostas, 2016). SSRIs (selective serotonin reuptake inhibitors) such as Prozac were developed later. You will learn about these substances in the chapter on mood disorders. Benzodiazepines such as Valium have been used for the treatment of anxiety for at least 50 years.

One significant event came in 1952 when a French naval surgeon was attempting to find medications to give to reduce stress before an operation (Freudenreich et al., 2016). He discovered that an antihistamine substance called chlorpromazine left individuals feeling indifferent about their operation. Noticing its calming effect, he suggested that this might be useful in the treatment of mental disorders. In particular, it was discovered that chlorpromazine (trade name Thorazine) helped to reduce the symptoms of schizophrenia and initially became an important antipsychotic medication. This, in turn, led to the reduction in the number of patients in mental hospitals (as noted in the previous *LENS*). Some of the early antipsychotic medications had problematic side effects. Newer drugs used today have fewer of these side effects.

Other treatment approaches seek to influence the individual's brain by changing the underlying electrical activity. Some of these treatments are considered *noninvasive* (Camprodon et al., 2016); that is, there is no requirement that electrodes or other devices be placed inside the brain itself. The oldest of these techniques is *electroconvulsive therapy* (ECT) in which electrical activity is used to disrupt normal brain activity and produce convulsions (Welch, 2016). ECT has improved over the years with a reduction in motor convulsions and a reduction in the number of brain areas affected. It is seen as an effective treatment for those with severe depression that does not respond to other types of medication or psychotherapy. An alternative to ECT, referred to as *transcranial magnetic stimulation* (TMS), disrupts brain activity using magnetic stimulation to treat mental disorders, including depression.

More invasive treatments require that electrodes be placed in the brain that change the existing brain networks. The technique has been referred to as *deep brain stimulation* (DBS) and has been used for the treatment of motor disorders such as Parkinson's disease, as well as obsessive compulsive disorder (OCD) and depression. Stimulating electrodes are placed deep in the brain, and these are connected to a pulse generator that is placed under the person's skin, typically below the neck. Today's devices allow health care professionals to adjust the stimulation from wireless devices outside the skin.

The most invasive procedures are surgeries in which different areas of the brain are removed or their connections disrupted. Severe epilepsy, in which a person has numerous seizures and cannot work or function normally, has been treated in this manner. Today, surgical procedures of the brain are limited to very small areas. In fact, gamma rays rather than a knife are used to make the small cuts. Such small cuts in the brain are used with individuals who show no improvement in epilepsy, depression, or anxiety using standard treatments.

Not all of the biological treatments have been successful. In the first half of the 1900s, as a treatment for mental illness, the frontal areas of the brain were disconnected from the rest of the brain. This procedure, called a *frontal lobotomy*, was used until the 1950s and then discontinued. It left the person with limited emotional and cognitive abilities. Even during its time, there were serious debates as to its ethics and effectiveness.

As you will see throughout this book, biological approaches play an important role in the treatment of mental disorders. Determining effective treatment is not an either/or question of psychological and biological approaches but an attempt to combine treatments that work together in an effective way. For example, research from 2015 shows that the combination of psychotherapy and lower levels of psychotropic medication is very effective for treating schizophrenia (Insel, 2015; Kane et al., 2016). As you will also learn, psychotherapy and biological approaches work through different brain mechanisms and at different levels of the brain. Throughout the chapters of this book, particular biological approaches will be described in terms of each disorder.

The next section will examine psychological factors involved in developing, maintaining, and treating mental disorders. What people learn through interacting with others and with their environment is crucial. In addition, what individuals tell themselves or how they experience significant others in their lives is an important aspect of this perspective.

PSYCHOLOGICAL TREATMENT PERSPECTIVES IN THE 20TH AND 21ST CENTURIES

Before the middle of the 20th century, very little formal research had been performed to see how effective psychological interventions were. This was also true of traditional medical procedures. Beginning in the 1950s and 1960s, a movement started to determine the effectiveness of both medical and psychological treatments in a scientific manner. In medicine, this came to be known as *evidence-based medicine*. In psychology, the terms *empirically based treatments* and *empirically based principles* refer to treatments and their aspects for which there is scientific evidence of effectiveness (Clark, 2018; David et al., 2018). During the 21st century, there has also been a focus on the importance of understanding diversity and cultural competency within the context of evidence-based care (Huey et al., 2014). Treatment effectiveness is now considered worldwide with diverse populations (e.g., Ravitz et al., 2019). Also, researchers have sought to discover any general factors such as empathy and positive regard on the part of the therapist (Elliott et al., 2018; Farber et al., 2018; Norcross & Lambert, 2018). This research suggests that relationship factors are important to successful treatment regardless of the therapeutic approach used.

As researchers and clinicians began to focus more on approaches and principles for which there was scientific evidence that they were effective, there began a movement to develop effective treatments for particular disorders. There has been more willingness to integrate techniques from the three different approaches as well as from other perspectives. For example, in the chapter on personality disorders, you will see that one of the most researched treatments—dialectical behavior therapy (DBT)—is based on techniques from each of the three approaches described in this chapter. This effective treatment uses aspects of cognitive behavioral, dynamic, and humanistic-existential techniques.

Psychodynamic Perspectives on Treatment

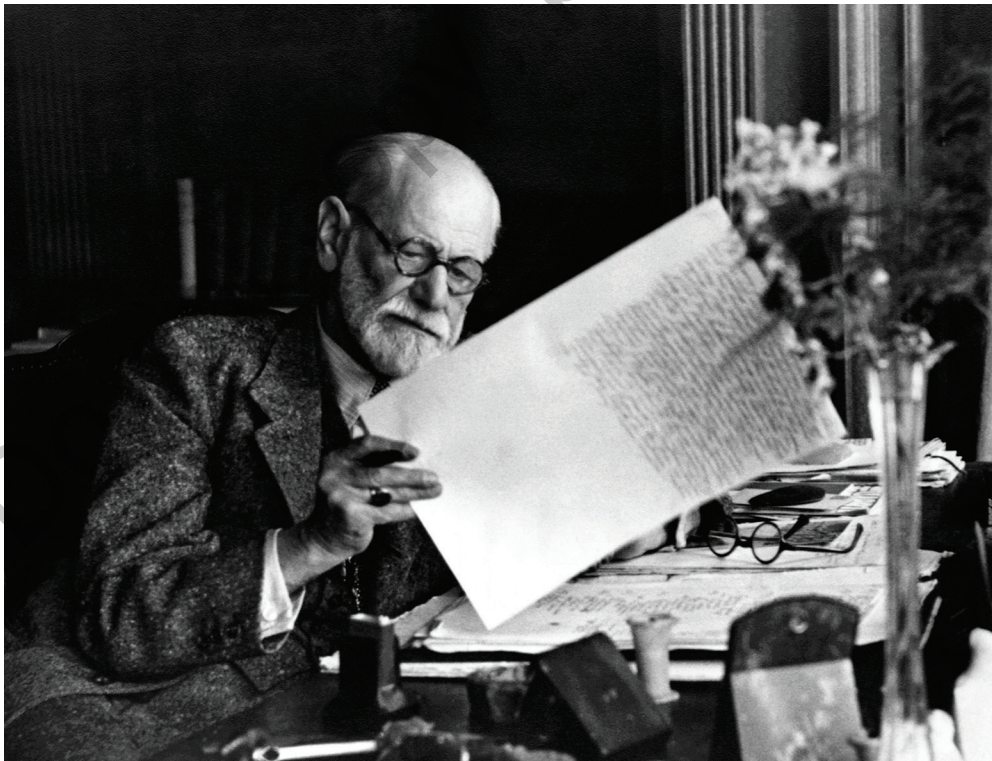
The **psychodynamic perspective** is based on the idea that psychological problems are manifestations of inner mental conflicts and that conscious awareness of those conflicts is key to recovery. Historically, Sigmund Freud laid the foundation for this perspective.

By the beginning of the 20th century, there was an understanding that psychological processes were an important source of information about mental illness. Freud had worked with Charcot in Paris and observed individuals with hysteria. In this disorder, the experience, such as not feeling pain in a limb or difficulty hearing, did not match the underlying physiology. Witnessing this type of disordered behavior led Freud to seek psychological explanations for the cause and treatment of mental disorders.

Sigmund Freud

Freud was initially trained as a zoologist before he completed medical school. The nature of the neuron was just being discovered, and Freud based his early theories on the neuroscience of his day. He was an enthusiastic reader of Darwin and credited his interest in science to an early reading of his work. A number of Freud's ideas can be seen as coming from Darwin (Ellenberger, 1970; Sulloway, 1979), although Freud emphasized sexual selection over natural selection. According to Freud, the sexual instinct (libido) is the major driving force for human life and interaction. Freud was also influenced by the suggestion of the neurologist Hughlings Jackson that in our brains we find more primitive areas underlying more advanced ones. Thus, it is quite possible for the psyche to be in conflict with itself or at least to have different layers representing different processes.

For Freud, higher cortical processes could inhibit the experience of lower ones, a process that would come to be called *repression*. Anxiety is the result of society and culture having inconsistent rules for the expression of sexuality and aggression. This anxiety and our inability to acknowledge these instinctual experiences lead to defense mechanisms and neurosis. Freud believed that the brain was basically a blank slate upon which experiences become connected with one another driven by instinctual processes of sexuality and self-preservation. The human psyche for Freud becomes the real-life laboratory in which nature and nurture struggle.



Sigmund Freud

Photo 12/Alamy Stock Photo



Hans Strupp was one of the first researchers to empirically examine change with psychodynamic treatment.

Courtesy of Vanderbilt University

Freud's concept of treatment was based on the search for ideas and emotions that are in conflict and the manner in which the person has relationships with other people. His specific treatment came to be called **psychoanalysis**. One basic procedure was *free association*, in which an individual lay on a couch with the therapist behind them and said whatever came to mind. It was the therapist's job to help the client connect ideas and feelings that they were not aware of. One thing Freud was searching for was connections within the person's psyche when external stimulation was reduced. Dreams were also analyzed in this way, since they are produced outside of daily life.

Other aspects of psychoanalysis included examining *resistance*, or what the client is unwilling to say or experience, and *transference*, or the manner in which a person imagined how another person thought about or sought a certain kind of relationship with them. Freud has greatly influenced therapies based on insight. *Insight therapy*, which has been used to treat disorders such as anxiety and depression, is based on the principle of bringing patterns of behavior, feelings, and thoughts into awareness. In order to do this, it is necessary to discuss past patterns and relationships to determine how they are being replayed or are influencing the present.

A number of dynamically orientated therapies have been shown to be effective (Barber et al., 2021; Fonagy, 2015). One empirically supported therapy based on dynamic principles was developed by Hans Strupp and his colleagues. Strupp embodied the dynamic principles in a therapy of a few months' duration (Strupp & Binder, 1984). The focus of this therapy is the relationship between the client and other individuals in the client's life. It is assumed that the client's problems are based on disturbed relationships. The therapeutic relationship between the client and the therapist offers an

opportunity to see disturbed relationships in a safe environment. Transference is an important mechanism in which the client tends to see the therapist in terms of significant others in their life. As the client talks with the therapist, they will replay prior conflicts and enact maladaptive patterns.

The role of the therapist in this approach is mainly to listen. As the therapist, you listen to your clients, seeking to understand what they are saying and how they feel as they describe their world. You would note to yourself when they find talking to you difficult or experience distress as they talk about their life. On a larger level, the therapist is looking for themes and patterns that come from their clients' pasts. In a relaxed, nonjudgmental manner, it is the task of the therapist to help the client understand the patterns and to see how they interfere with living and having rewarding relationships with others. Different versions of dynamic psychotherapy have been shown to be effective for a number of disorders, especially the personality disorders.

Existential-Humanistic Perspectives

The **existential-humanistic perspective** begins by asking: What is the nature of human existence? This includes both the positive experiences of intimacy and the negative experiences of loss. Historically, two clinicians influenced by Freud—Carl Jung and Karen Horney—helped to set the stage for the existential-humanistic movement in that they emphasized the value of internal experience.

As the existential-humanistic movement grew, a number of themes became critical. The first is an emphasis on human growth and the need for a positive psychology that moves beyond the discussion of stress and neurosis seen in the psychodynamic approaches. A second emphasis is the idea that psychological health is more than just the absence of pathology. Not having a problem is not the same as finding meaning in one's life. The third theme stresses the importance of considering not only the external world and a person's relationship to it, but also the internal world. In the humanistic-existential

perspective, the internal world of a person and their experiences are valued. With the emphasis on experience, you will also see the therapies that developed from this approach referred to as humanistic-experiential therapies.

Carl Rogers brought the humanistic movement to the forefront by creating **client-centered therapy**, also referred to as *person-centered therapy*. Rogers considered psychotherapy to be a releasing of an already existing capacity in a potentially competent individual. In fact, Rogers emphasized the relationship between the therapist and client as a critical key to effective therapy.

There are three key characteristics of the client-centered approach. The first is empathic understanding. As the therapist reflects back what the client says, the client begins to experience their own innermost thoughts and feelings. The second is what Rogers referred to as unconditional positive regard. That is, the therapist accepts what the client says without trying to change the client. For some individuals who have experienced significant others in their lives as critical of them, to be accepted by the therapist is a new experience. The third characteristic is for the therapist to show genuineness and congruence (agreement). In this way, the therapist models what interactions between two real people could be like.

A number of humanistic-experiential-orientated therapies have been shown to be effective (Elliott et al., 2013, 2021). One of these empirically supported therapies based on humanistic principles was developed by Leslie Greenberg and his colleagues. This approach is known as **emotion-focused therapy** or *process-experiential therapy*



Karen Horney
Bettmann/Contributor/via Getty Images



Carl Rogers
Bettmann/Contributor/via Getty Images

(Greenberg, 2002). In this therapy, emotion is viewed as centrally important in the experience of self. Emotion can be either adaptive or maladaptive. However, in either case, emotion is the crucial element that brings about change. In therapy, clients are helped to identify and explore their emotions. The aim is to both manage and transform emotional experiences.

Emotion-focused therapy can be thought of in three phases (Greenberg & Watson, 2006). The first phase is one of bonding and awareness in which it is the job of the therapist to create a safe environment for emotional experience to take place. Empathy and positive regard are part of the way the client is helped to feel safe. In the early part of therapy, the client is helped not only to experience an emotion but also to put words to it.

The second phase is evocation and exploration. At this point, emotions are evoked and even intensified. The therapist also helps the client to understand how they might be interfering with their own experience of emotion. Such examples of interference would include changing the subject and beginning to talk about the emotion in a cognitive manner as a way to distance oneself from the experience. The third phase is transformation and generation of alternatives. It is at this point that the therapist helps the client construct alternative ways of thinking, feeling, and doing that are more consistent with their real self. Empirical studies have shown that emotion-focused therapy is effective with depression and emotional trauma (Greenberg & Watson, 2006).

Another therapeutic technique that has gained popularity and been empirically shown to be effective is **mindfulness** (Creswell, 2017; Ong et al., 2020). Mindfulness techniques were originally meditation techniques developed in Theravada Buddhism. These techniques involve an increased, focused, purposeful awareness of the present moment. The idea is to relate to one's thoughts and experiences in an open, nonjudgmental, and accepting manner (Kabat-Zinn, 1990). The basic technique is for the individual to observe thoughts without reacting to them in the present. This increases sensitivity to important features of the environment and one's internal reactions, leading to better self-management and awareness as an alternative to ruminating about the past or worrying about the future. This in turn reduces self-criticism.

Nonjudgmental observing allows for a reduction in stress, reduction in reactivity, and more time for interaction with others and the world. Also, feelings of compassion for another person become possible. This broadens attention and alternatives. Meta-analysis performed by Hofmann, Sawyer, Witt, and colleagues (2010) examined 39 studies of mindfulness. They found significant reductions in anxiety and depression following mindfulness techniques. Grossman and his colleagues (Grossman et al., 2004; see also Hofmann et al., 2011) examined 20 studies and found overall positive changes following mindfulness approaches. Empirical evidence using mindfulness techniques has shown positive change with a number of disorders, including anxiety, depression, chronic pain, and stress (Wielgosz et al., 2019). Mindfulness is also a component of DBT, which is an effective treatment for borderline personality disorder.

Overall, the existential-humanistic perspective emphasizes the emotional level. There is also an emphasis on the value of internal processes and the manner in which the exploration and experiencing of these internal processes can lead to changes in behavior and experience.

Behavioral and Cognitive Behavioral Perspectives

The **behavioral perspective**, as the name implies, has focused on the level of actions and behaviors. Most histories of behaviorism begin with a discussion of Ivan Pavlov, the Russian physiologist who won the Nobel Prize in 1904 for his work on the physiology of digestion. Pavlov noted in his Nobel Prize speech that the sight of tasty food makes the mouth of a hungry man water. However, what became of interest to behavioral psychologists was not the salivary reflex itself but the fact that other objects associated with the presentation of food could also produce salivation. For example, in Pavlov's work with dogs, it was shown that any sensory process, such as sound, that was paired with the food would produce salivation. After a number of pairings, the sound alone without the food could produce this reflex. This came to be known as *classical conditioning*.

Classical conditioning occurs when an unconditioned stimulus, such as food, results in an unconditioned response, such as salivation. If this unconditioned stimulus is paired with a neutral stimulus



In Pavlov's work with dogs, it was shown that any sensory process, such as sound, that was paired with the food would produce salivation.

Pictorial Press Ltd/Alamy Stock Photo

a number of times, then the neutral stimulus will produce the response. After a period of time, the “conditioned stimulus” such as sound, when presented alone, will no longer produce the response. This process is referred to as **extinction**. Behaviorists saw classical conditioning as one mechanism underlying the development of mental illness.

John Watson is often described as America's first behaviorist. His work set psychology on the course of emphasizing environmental explanations for behavior and rejecting the theoretical value of internal concepts. This called into question the value of studying such topics as consciousness and other internal processes. Watson set the course of only studying observable behavior with his 1913 paper *Psychology as the Behaviorist Views It*. Watson suggested that the proper study of psychology was to focus on behavior and not the mind. Further, Watson saw the goal of psychology as identifying environmental conditions that direct behavior. Under no circumstances should the theory make reference to consciousness, mind, or other internal unobservable events. Watson created a psychology based on observable behaviors alone, which helped promote the development of a strong stimulus–response psychology. Watson's statement emphasizing the role of the environment in development is well known.

Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant-chief, and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. (Watson, 1924, p. 82)

As the quote implies, Watson assumed that there existed “talents, penchants, tendencies, abilities” that were part of an individual but that these could be overridden by environmental factors. In fact, Watson demonstrated that an 11-month-old infant named Little Albert could be conditioned to fear an animal such as a lab rat that the infant had previously enjoyed playing with (Watson & Rayner, 1920). The procedure (which would be considered unacceptable and unethical today) was to create a loud noise when the infant was observing the animal. A loud noise will produce a startle response. In a classical conditioning manner, the pairing of the aversive noise and the animal led to conditioned fear. Behaviorists used classical conditioning as a mechanism for understanding phobias and other processes seen in mental illness.

B. F. Skinner became the 20th century's most vocal proponent of behaviorism. Beginning with his 1938 book, *The Behavior of Organisms*, Skinner played a significant role in experimental psychology

until his death in 1990. His experimental procedure was to demonstrate that an animal, generally a laboratory rat or pigeon, could be taught to make specific responses if, after the occurrence of the desired response, the animal was given a reward, generally food. This procedure came to be known as **operant conditioning**. The basic idea was that behavior could be elicited or shaped if **reinforcement** followed its occurrence. Consequently, if these behaviors ceased to be rewarded, the occurrence would decrease. Thus, the emphasis was on behaviors and the rewards that follow them as opposed to the environmental stimuli evoking them.

Skinner suggested that freedom, will, dignity, and other concepts referring to the mind or internal states have no explanatory value. Psychologists should only be interested in the relationship between behavior and consequences, according to Skinner. Even processes such as language learning were seen as the result of words being reinforced and learned one at a time. In this manner, any type of complex behavior was seen as the result of learning simple behaviors, which were then chained together. The larger implication was that humans came into the world ready to be influenced by the reinforcement contingencies of the environment to determine their development and actions in the world. Watson and Skinner ushered in an era in psychology that strongly emphasized the environment and largely ignored any discussion of internal processes or mechanisms for understanding life.

In the mid-20th century, a number of psychologists began to see the limitation of strict behaviorism in that it ignored internal processes. Simple demonstrations, such as offering a 6-year-old a candy bar if he would do a particular task, showed that the idea of a reward was enough to motivate behavior. Also, behaviorally oriented psychologists such as Albert Bandura showed that humans would imitate the behaviors of others even without reinforcement. This type of learning was called **observational learning**, or *modeling*. One classic set of studies involved children hitting a Bobo doll after seeing cartoon characters being aggressive. In another study, children watched an adult interact with the Bobo doll in an aggressive or nonaggressive manner. Those children who watched the aggressive adult later showed more aggression than those who watched a nonaggressive adult.

Nonclinical areas of research in psychology, such as the study of cognitive processes and social processes, were demonstrating that humans often make quick decisions based on information that is outside of normal awareness. Humans make these decisions without actually realizing there are alternative ways of thinking. Further, evolutionary thinking was showing how humans come into the world with an evolutionary history such that they develop fears of some objects such as snakes or spiders more



B. F. Skinner was the 20th century's most vocal proponent of behaviorism.

Science History Images/Alamy Stock Photo

readily than fears of a toy truck or a flower. Arne Öhman at the Karolinska Institute sought to determine the basis of fear learning and how it relates to psychopathology (see, e.g., Öhman, 1986). Others emphasized the fact that humans talk to themselves and pay attention to their own thoughts, which can influence behavior. All of these developments moved many in the psychology discipline away from Skinner's more rigid behaviorism.

The **cognitive behavioral perspective** suggests that dysfunctional thinking is common to all psychological disturbances. By learning in therapy how to understand one's thinking, it is possible to change the way one thinks as well as one's emotional state and behaviors. One basic feature of our thinking is that it is automatic. Ideas just pop into our mind, such as "I can't solve this" or "It is all my fault." A number of therapies based on cognitive principles along with behavioral interventions have been shown to be effective (Hollon & Beck, 2013; Newman et al., 2021).

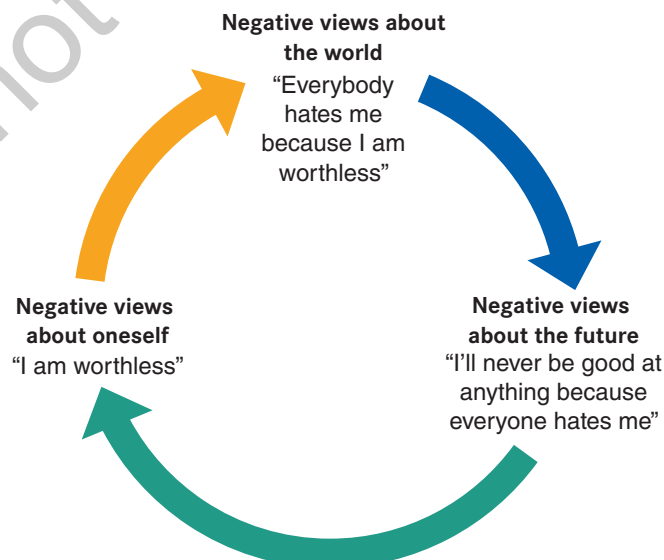
Aaron Beck (1967; see also Beck, 2019, for an overview and update) developed a cognitive therapy for depression in the early 1960s. The model is described in terms of a cognitive triad related to depression (Figure 1.13).

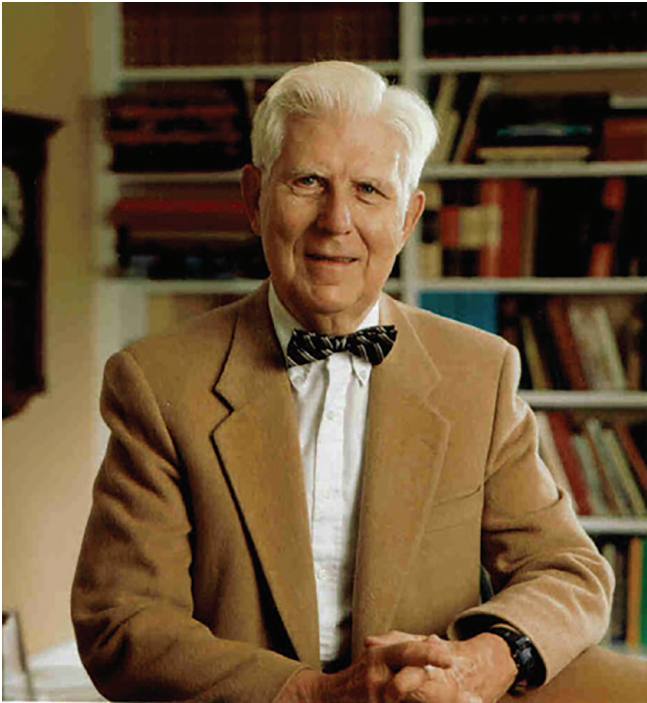
The first component of the triad is the individual's negative view of self. This is when the individual attributes unpleasant experiences to his own mental, physical, and moral defects. When something negative happens, the person says it is his fault. In therapy, the client can become aware of the content of his thinking. The second component is the individual's tendency to interpret experiences in a negative manner. That is, the person tailors the facts to fit negative conclusions. The basic idea is that thinking influences emotion and behavior. The third component is that the person regards the future in a negative way. He envisions a life of only hardships and anticipates failure in all tasks. In therapy, the basic idea is that the individual can modify his cognitive and behavioral responses. Overall, the therapy is directed at the automatic thoughts in relation to *catastrophizing*—believing that nothing will work out; *personalization*—believing that everything relates to you; *overgeneralization*—believing that one event is how it always is; and *dichotomous thinking*—believing that things are either good or bad.

In the history of **cognitive behavioral therapy (CBT)** research, most therapies were directed at treating particular disorders such as anxiety, depression, phobias, and so forth. However, it was noted that negative affect is present in a number of different disorders (Barlow, Allen, & Choate, 2016). This led to the development of a treatment approach directed at the common underlying mechanisms of these different disorders. Overall, the approach seeks to help the individual understand emotional experiences and their cognitive appraisal. This approach has been referred to as the unified treatment model or unified protocol and also transdiagnostic therapy (Norton & Roberge, 2017). Research

FIGURE 1.13 ■ How Do Individuals With Depression See the World?

According to Aaron Beck's cognitive triad, those with depression have negative views about the world, about the future, and about themselves.





Aaron Beck

Courtesy of the Beck Institute for Cognitive Behavior Therapy; www.beckinstitute.org

studies have shown this treatment to be effective in disorders such as anxiety and depression (Carlucci et al., 2021; Sakiris & Berle, 2019).

Overall, the CBT movement sought to understand how cognitions were disordered or disrupted in mental disorders. Whereas humanistic therapies emphasized emotional processing, cognitive behavioral approaches emphasized thoughts. This includes the manner in which a person conceptualizes their life and experiences, including internal emotional experiences. The basic idea is that psychological disturbances often involve errors in thinking. One real value of many cognitive behavioral approaches is that they have been tested empirically and are presented in books and manuals that describe the steps involved in therapy.

As with other perspectives, cognitive behavioral approaches have been expanded to include several other techniques. Some of these are mindfulness approaches and dialectical behavior therapy, as discussed previously, as well as acceptance and commitment therapy (ACT) and acceptance-based behavioral therapy (ABBT). ACT and ABBT combine mindfulness with an emphasis on accepting inner experiences without judgment, along with awareness and resilience.

These approaches have been called the *new way* or *third wave of CBT* (Hayes & Hofmann, 2017; Hofmann, Sawyer, & Fang, 2010; Perkins et al., 2023). One common theme in these

approaches is the role of acceptance. In each approach, clients are encouraged to not react to negative thoughts and feelings. Throughout this book, you will be introduced to the way in which these and other therapies have been used to treat specific disorders.

CONCEPT CHECK

- What does *empirically based treatment* mean? Why is it important, and what impacts has the concept had on treatment for psychopathology?
- Describe the basic principles underlying each of these perspectives on psychological treatment: psychodynamic perspective, existential-humanistic perspective, behavioral perspective, and cognitive behavioral perspective. Identify the scientists associated with them, and give an example of an empirically based treatment related to each.

SUMMARY

Three major themes—behavior and experience, neuroscience, and the evolutionary perspective—give us important perspectives for thinking about psychopathology. In addition, an integrative perspective ranging across a number of different levels of analysis provides a greater understanding of psychopathological processes. These levels range from the highest levels of environment, culture, and society to social relationships to individual behavior and experience to our sensory, motor, emotional, and cognitive systems to the physiological processes that make up our central and peripheral nervous systems to the cortical network

level to the most basic level of genetics and epigenetics. The genetic level in turn takes us back up to the highest level to understand how environmental conditions influence genetic processes.

Four ideas are critical to the concept of psychopathology. First, there is a loss of freedom and ability to consider alternatives. Second, there is a loss of genuine personal contact. Third, there is a loss of connection with one's self and the ability to live in a productive manner. Fourth, there is person distress.

Considering psychopathology from evolutionary and cultural perspectives goes beyond the traditional psychological and physiological considerations. Culture can be seen as a system of inheritance: Humans learn a variety of things from others in their culture, including skills, values, beliefs, and attitudes. For a more complete understanding of psychopathology, it is important to understand the particular rules a culture has for expressing both internal experiences and external behaviors. Overall, research suggests a close connection between cultural and evolutionary perspectives. Not only can the environment influence genetics, but genetics can also in turn influence culture. The evolutionary and cultural perspectives help us ask questions such as these: (1) Can genetic variation influence the manner in which cultural structures formalize social interactions, and how this might be related to what is considered mental illness? (2) How long, in terms of our human history, has a particular psychopathology existed? (3) What function might a disorder serve, and how did it come about? (4) How can a basic human process (e.g., the pain of social rejection) develop in relation to an earlier one (e.g., the brain circuits involved in physical pain)?

One of the main themes of the study of evolution is the manner in which organisms are in close connection with their environment. It is this close connection that allows for change, including the turning on and off of genetic processes, to take place. Humans are born less fully developed at birth than many other species and thus are sensitive to changes in their environment as they continue to develop. Unlike animals that live within nature, humans largely live within the backdrop of our culture. Another part of the complexity with humans is our ability to reflect on ourselves and our world. In this way, a layer of thought, including expectation and imagination, is injected between the person and the environment.

Mental disorders have been with us throughout our human history. Since the time that written language became a part of our experience, humans have described mental disorders. Examples of historical conceptions of psychopathology include those of Pythagoras and Hippocrates in ancient Greece and Galen from the period of the Roman Empire; advances in anatomy by da Vinci in art and Descartes in science from the Renaissance; advances in understanding the brain and nervous system in the 1700 to 1900 period; and Darwin's description of the theory of evolution and Charcot's classification of psychological and brain disorders in the 1800s. Historically, the care and treatment of individuals with mental illness also advanced, as did our understanding of the experience of these disorders. Although the Greeks already saw mental illness as a disorder involving the brain, it is only within the past 125 years that scientific support began to clarify this position.

Biological treatment for psychological disorders usually involves psychotropic medications, which have been expanded and improved over the past 60 years. Where medications have not been effective, other techniques are sometimes used, including ECT, TMS, and DBS.

There are currently three broad perspectives for the psychological treatment of mental disorders: the psychodynamic perspective, the existential-humanistic perspective, and the cognitive behavioral perspective. They were developed somewhat independently and often in opposition to one another. Beginning in the 1950s and 1960s, however, there was a movement to determine the effectiveness of psychological treatments in a scientific manner. Researchers and clinicians began to focus more on approaches and principles for which there was scientific evidence of effectiveness. This led to developing effective treatments for particular disorders and greater integration of techniques from the three different approaches as well as from other perspectives.

STUDY RESOURCES

Review Questions

1. Why do stigmas arise in regard to mental illness? What impacts do stigmas have on individuals with psychopathology as well as their families, communities, and society as a whole?
2. Three major themes—behavior and experience, neuroscience, and the evolutionary perspective—are presented as giving us important perspectives for thinking about psychopathology. What are some of the ideas each of these perspectives offers?
3. What levels of analysis are important to consider in understanding psychopathology? What are the advantages of considering multiple levels and taking an integrated approach?
4. This chapter states that “considering psychopathology from evolutionary and cultural perspectives goes beyond the traditional psychological and physiological considerations.” What arguments does the author put forth to explain the importance of these two perspectives in asking critical questions that need to be answered? Do you agree?
5. What are the four critical characteristics to be included in answering the following question: What is psychopathology?
6. How does reading about the experiences of individuals with mental illness inform our understanding of the nature of psychopathology?
7. Describe how mental illness was understood in each of the following historical periods and how that understanding was advanced: ancient Greece and Rome, the Renaissance, and the 1700s to 1900s. Give examples of the individuals and ideas critical to each period.
8. How were individuals with mental illness treated during different historical eras? Who were some of the people who played a critical role in advancing treatment?
9. Descartes created a mind–body distinction that science since that time has had to address: How can a material body including the brain be influenced by an immaterial process such as the mind? How can a thought influence a cell in the brain? How would you handle the mind–body problem?
10. What we now know about the structure and function of the human brain and nervous system has developed throughout history. What is your model of how the brain is involved in mental illness?
11. Describe the contributions of the following individuals from different perspectives to the field of psychological treatment as a whole: Sigmund Freud, Hans Strupp, Carl Rogers, Leslie Greenberg, B. F. Skinner, Albert Bandura, and Aaron Beck.

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KEY TERMS

abnormal psychology
behavioral and experiential perspective
behavioral perspective
classical conditioning
client-centered therapy
cognitive behavioral perspective
cognitive behavioral therapy (CBT)
cultural perspective
emotion-focused therapy
evolutionary perspective
existential-humanistic perspective
extinction
hierarchical integration
levels of analysis
mindfulness
natural selection
neuroscience perspective
observational learning
operant conditioning
psychoanalysis
psychodynamic perspective
psychopathology
reinforcement
sexual selection
signs
stigma
symptoms
syndrome
variation

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