

Chapter 3

Attraction, Arousal, Response, and Sexual Orientation

Close your eyes for a moment and think about a person to whom you've experienced some attraction in the past or present. Imagine that person's look, sound, and smell and the way you feel when you think about him or her. Is it a current or former boyfriend or girlfriend? Perhaps it is your current spouse or partner, but it could also be a friend with whom you have never had any sexual relationship or someone in your class who doesn't even know you like him or her—someone who you've only seen from afar and fantasized about and might not even like much if you actually interacted with the person. It may be a celebrity whom you've only seen in films in idealized lighting conditions after professional makeup artists have carefully prepped this individual's hair and face and whom you know you will likely never meet. Now think about the types of attraction you have for a person you know well. Is it a fondness of spending time with the person and sharing interests and activities? Do you have difficulty concentrating when you're in the person's presence and feel multiple physiological feelings in your stomach and hands when you're near him or her? Perhaps you also experience physical arousal in your genitalia and a strong desire to have sexual contact with the person. Maybe there are friends whose company you really enjoy and miss but with whom sexual contact might be unpleasant because they are not your type or because they are female or male and you are not attracted to that sex. Can you identify people with whom you experience only one of these types of attraction? Are there others for whom you feel several types of attraction? Indeed, if you're like approximately 99% of people, you will likely experience a wide range of attractions over your lifespan that have some sexual component.

This chapter can be grouped into two parts. In one part, we have three sections that focus on arousal and response, considering the anatomical, physiological, and nervous system "mechanics" of physical arousal and response cycles. We assume the reader has recently completed [Chapter 1 "Sexual Bodies: Anatomy and Physiology"](#) and is familiar with the anatomical structures involved in sexual response. In the other part, we have three sections which explore the biological, cultural, and

individual spectrum of attractions that people can experience and how these fit together with the scientific concept of sexual orientation. We also explore the popular usage of this term, as well as the past and present of religious customs and laws that, in some cultures, have adversely affected members of sexual orientation minorities. We assume the reader has also recently completed [Chapter 2 "Gender Identity and Sexual Development"](#) and understands the interactions of biology, culture, and individual experience in gender identity as well as the terminology used in research in this area, which has a significant impact on the modern understanding of sexual orientation.

It's common for people reading about factors that affect attraction, love, and arousal to say, "But I'm not like that!"—and this is indeed correct; when a study finds an effect, even a strong effect, this is averaged across a group of people. There are wide individual differences, with people who respond in a different (or even opposite) manner to that typically experienced and reported in research; this is perfectly normal. By studying such typical or average influences, we can learn about the general properties of attraction without negating the wide variety of individual experience. Although love is also an important part of attraction, we mention it briefly in this chapter so that we can cover love in much greater depth in [Chapter 5 "Sexual Relationships, Love, and Communication"](#) and explore it in the context of the study of relationships. We do this because love is often the primary basis of long-term intimate relationships. While for many people attraction, arousal, and love are inseparable, for some, they can be discrete at times, and in this chapter, we focus on the aspects of attraction and arousal that occur whether or not there is love.

3.1 Senses, Reflexes, and Hormones

LEARNING OBJECTIVES

1. Describe the role of the senses in both sexual arousal and sexual aversion and the variety of components that compose touch.
2. Identify branches of the nervous system and areas of the brain involved in sexual arousal.
3. Describe the general role of hormones and neurotransmitters in arousal as well as the idea that dopamine is involved in sex addiction.

Senses Involved in Sexual Arousal

Vision, hearing, smell, taste, and touch are the primary bodily senses but by no means the only ones. The haptic (touch) sense of the body contains different nerve endings on different types of skin, such as specialized genital

end-bulb cells on the genitalia. The skin also includes senses of temperature, pressure, and pain. Internal “touch” exists as well, in balance, acceleration, and the relative positioning of different bodily parts, known formally as proprioception or kinesthetic sense. The latter includes other internal sensations such as a full bladder or full bowel and internal pain receptors. All these may form a part of sexual arousal and also sexual aversion, depending on the person and the stimulus, but for most people, vision, hearing, touch, smell, and taste are the most prominent senses for sexual stimulation.

We consider in detail the role of signaling chemicals known as pheromones and hormones in the section on sexual attraction ([Chapter 3, Section 4 "Sexual Attraction "](#)). While they can influence behavior and attraction, there is no direct link with immediate physiological arousal. However, consciously detectable smells can definitely evoke powerful memories and associations and lead to arousal. That is to say, smell might not affect whom one finds attractive over his or her lifespan, but it can influence general behavior and can definitely become associated with arousal and attraction to specific individuals or even be generalized to specific smells. Thus, for some individuals, a particular person’s smell may become highly arousing if one is attracted to that person, and consciously detectable scents such as those from perfumes and colognes may become positively associated with someone to whom one is attracted (and so the smell can be arousing). This association, known as classical conditioning, can also be negative. For example, if someone does something traumatic to a person and has a certain smell, the unpleasant (aversive) reaction can be conditioned to that smell. This negative association can also develop in sexual situations in general for a survivor of trauma, which is something that we explore when we consider sexual dysfunctions in [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#).

People can become aroused by certain types of bodily odors and smells in general, including those of the armpits and genitalia as well as bodily fluids and genital secretions. Some people find some of these unpleasant, even if they are attracted to a person. Some people have more skin bacteria that produce strong odors even with frequent bathing, although even here there is a role of social learning in terms of whether we consider natural body odor pleasant or not. Bathing, which is commonly done daily in industrialized countries, used to be something people did only a few times a year in preindustrial agricultural societies (with the exception of the highly affluent), and in indigenous peoples, frequency of bathing varies by access to water supplies. Some people prefer natural odors or simply being freshly washed to perfumes and deodorants, particularly as the latter often taste unpleasant if the skin is being kissed or licked.

Culture and individual experience affect not only the perception of smell but also the meaning of touch. In industrialized countries, kissing involving lip-to-lip contact and open-mouthed tongue contact is considered highly arousing by many individuals, but there are numerous cultures in which this behavior is rarely seen and is not considered particularly desirable. Sound also can be arousing, in terms of both the overall register or tone of a voice and nonverbal sounds that may be associated with sexual activity. Some people are fairly quiet during sex, while others literally scream so loud that it can be heard throughout a house or in the next apartment. The words people say also may be arousing: some people find talking about particular sexual activities or fantasies as they are happening or directing the sexual activity to be arousing, and some may find saying certain words to be arousing—particularly so-called dirty talk that would not be appropriate in a nonsexual setting or that may transgress certain boundaries even in a sexual setting. The fact that certain words, language, or fantasies are considered inappropriate may serve to heighten the sense of sexual excitement upon hearing or saying these, even for those people who never wish to act out the fantasies in reality. This sometimes includes sexually humiliating language spoken between people who mutually respect one another and have sought out prior verbal consent to use degrading language for the purpose of sexual pleasure. Communicating about sexual turn-ons and turn-offs prior to having sex is often a better way of having more satisfying sex, although some people are so conditioned to not talk about sex that they may not tell their partner what is really on their mind.

Reflex Responses and Multiple Nervous System Loops

Sexual arousal can be understood as having three related paths in the body. The first is from the genitalia to the spinal cord and back; the second is from the genitalia to the brain via the spinal cord (afferent), bringing signals to the central nervous system; and the third is from the brain to the genitalia via the spinal cord (efferent), bringing signals from the central nervous system out to the body. The nerve cells on the surface and interior of the genitalia in both sexes do not directly control arousal, erection, and lubrication. Rather, they feed into the spinal column. From there, they trigger an immediate response in nerves that head back to the genitalia and control blood flow and erectile response and also feed upward into dedicated areas of the sensory cortex in the brain. This leads the sensory cortex to trigger conscious thoughts (the awareness of the touch) and associations related to the touch and how the touch is occurring as well as unconscious associations in the brain related to touch, thoughts, prior experiences, or general attitudes about sex and sexuality. The central nervous system can also trigger the neurons that either activate or deactivate control of blood flow and erectile response in the genitalia.

Thus it is possible for arousal to occur as a result of direct stimulation to the genitalia and also for arousal (or inhibition of arousal) to occur from thoughts and associations (both conscious and automatic or unconscious) in the brain. For example, a touch might lead to some arousal, with additional stimulation occurring when one realizes the touch is from a person one loves. Inhibition of stimulation might occur if one realizes the touch is from someone one does not like or if one has anxiety about sexuality or sexual performance, or it may even occur from an automatic response (classically conditioned) if one has had repeated bad experiences in a similar situation. Because the direct spinal column reflex and stimulation/inhibition coming from the brain are related but independent pathways, it is possible to become aroused by someone one does not like simply through touch, and it is also possible to be highly interested in someone sexually yet, for various reasons, experience inhibited arousal to the point where, regardless of the amount of touch to the body or genitalia, arousal does not occur. The automatic response is also referred to as reflexive.

The nervous system has two main branches or divisions: the *voluntary nervous system*, also called the somatic nervous system, which lets one move a hand; and the *involuntary nervous system*, also called the autonomic nervous system (ANS), which is largely beyond direct conscious control and is automatic. Most sexual response, including both arousal and orgasm, primarily involves activity of the autonomic nervous system. However, just as breathing typically is automatic but one can partially consciously control breathing, some parts of arousal can also be influenced by conscious control, particularly with practice and training. Kegel exercises, discussed in [Chapter 1 "Sexual Bodies: Anatomy and Physiology"](#), serve as one such example. Conscious thought can also affect the autonomic nervous system. For example, if one thinks of something scary, one's breathing and heart rate may be affected. With significant practice and perhaps formal biofeedback training, some people can learn to control their autonomic nervous systems, slowing down their heart rate and relaxing on cue; so, too, can some people learn to modulate autonomic sexual responses. This is particularly helpful in the case of retraining responses if someone is experiencing sexual dysfunction, a topic that is covered in greater detail in [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#).

The autonomic nervous system is further divided into two divisions: the sympathetic division and the parasympathetic division. These branches are usually opposed to one another; for example, when heart rate increases, the sympathetic nerves controlling the heart are active, and when heart rate decreases, the parasympathetic nerves controlling the heart are active. However, with sexual arousal, both systems are active at different stages, with the parasympathetic division being *more active in erection and arousal*, and the

sympathetic division being *more active in orgasm* (Boron & Boulpaep, 2009).^[1] Too much anxiety does inhibit orgasm in both sexes.

Signaling Chemicals: Hormones and Neurotransmitters

Multiple systems of signaling chemicals are also involved in most physiological and neurological processes, including sexual arousal and response. These include hormones, which are signaling chemicals that move in the bloodstream and affect tissues and responses, as well as neurotransmitters, which primarily serve to excite or inhibit neuronal responses in the brain and nervous system. Hormonal release occurs in endocrine tissues in organs such as the gonads (which secrete testosterone and estrogen in both sexes) and in the adrenal glands, among other structures.

The release of hormones is usually triggered by stimulating hormones (“control” messengers released into the bloodstream by the pituitary gland in the brain), which in turn are stimulated by neuronal activity in the hypothalamus. The hypothalamus is a brain structure that is part of the limbic system, or midbrain, which is responsible for many processes related to emotions such as fear and arousal. Other parts of the limbic system, such as the amygdala and hippocampus (which also has a role in memory), are also involved in sexual response. From this region, there are both descending pathways to the brain stem and ascending connections to the cerebral cortex. As a result, conscious thought can affect emotions, and emotions can affect conscious thought, and there are also receptors in the brain for hormones that create very complex self-regulating feedback loops. Briefly, no single center in the brain is responsible for sexual response, just as there is no single center responsible for most complex behaviors. Rather, component systems in multiple brain regions are highly active in sexual response, and these may be thought of as creating functionally distinct but interrelated processes.

Neurotransmitters involved in sexual response include dopamine, which is associated with reward, as well as oxytocin, which is associated with both nonromantic and romantic bonding. Oxytocin also plays a role in the physiology of orgasm, childbirth, and lactation. The neurotransmitter dopamine has multiple subtypes and plays different functions in different brain regions, regulating motor control in some parts of the brain and being involved in goal-directed activities that are pleasurable or reinforcing, such as seeking water or food for a thirsty or hungry animal. Use of psychoactive drugs, such as cocaine, can also stimulate dopamine, and rats presented with the opportunity for direct brain stimulation of dopamine pathways associated with pleasure will often do so to the exclusion of food or water until they die from exhaustion. Some media reports have linked

dopamine to sexual addiction, because sexual activity can cause a surge of dopamine; however, to say that sex is addictive is an inaccurate understanding of the neuroscience. Any rewarding or goal-seeking behavior tends to release dopamine. While rats prefer dopamine activation to food, it is also the case that when rats are presented with the opportunity to self-administer ever-increasing amounts of cocaine (which strongly affects dopamine activity) or to drink artificially sweetened saccharine water (which is also rewarding for rats), most prefer the saccharine water, even after showing signs of addiction to the cocaine (Lenoir, Serre, Cantin, & Ahmed, 2007).^[2] Certainly, some people have problematic sexual behavior, but most people, although they find sexual activity intensely rewarding, do not develop problems analogous to addiction.

Sex Hormones, Sex Differences, and Arousal

Sex hormones have many roles in sexuality. We discuss them in other chapters as well, in the context of their influence on sexual differentiation ([Chapter 2 "Gender Identity and Sexual Development"](#)); of their role in menstruation, fertility, and contraception for women ([Chapter 9 "Fertility, Contraception, and Abortion"](#)); of their role in causing and treating sexual dysfunctions ([Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#)); and of their role in development across the lifespan ([Chapter 8 "Gender and Sexuality Across the Lifespan"](#)). In terms of arousal, testosterone (an androgen) has the greatest influence for both sexes. While males have higher levels of testosterone—on average, 20 to 40 times greater—than females, male brains and bodies are sensitized to higher levels of testosterone. Abnormally low levels relative to the norm for one's own sex are accompanied in both females and males by reductions in interest in sex and in the ability to become sexually aroused, even with direct physical stimulation. The removal of testicles, such as from castration, and the blocking of testosterone by antiandrogen drugs are also associated with a decrease in sexual interest, as is the case in removal of ovaries (which also produce testosterone) and, in both sexes, the adrenal glands. Whether or not desire is eliminated by androgen reduction depends on the person. Adding testosterone tends to raise sexual interest and increase ease of physical arousal in both sexes. Typically, this is done through injections or transdermal patches that allow the hormone to be absorbed gradually through the skin. Estrogen is produced at much higher levels in females than in males, and it appears to have some relationship to sexual arousal, but the connection is not as clear as it is with testosterone. Low levels of estrogen are associated in some women with a thinning of the vaginal wall and decreased lubrication, and estrogen replacement therapy in postmenopausal women is sometimes accompanied by an increase in sexual interest and arousal, but it is also the case that many postmenopausal

women experience no decline in sexual interest or arousal, even though their ovaries produce much less estrogen after menopause.

Some females, but not all, experience a change in levels of desire and frequency of arousal during their menstrual cycle, with peak desire typically corresponding with peak fertility. The type of person a female is attracted to, as well as her own level of attractiveness to others, may also change when she is fertile and thus be affected by menstrual cycle, pregnancy, and use of oral contraceptives.

While abnormally low testosterone levels in both sexes strongly reduces overall interest in sex, moment-to-moment fluctuations in testosterone do not appear to cause sexual interest; rather, sexual activity appears to trigger the release of testosterone (Dabbs Jr. & Mohammed, 1992).^[3] Nor do sustained higher testosterone levels suddenly lead to a jump in sexual activity. In a study where adolescent boys with delayed puberty received testosterone or a placebo, there was only a mild increase in sexual behavior in the boys receiving testosterone (Finkelstein et al., 1998).^[4] [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#) presents data that show a mild increase in arousal in adults who seek testosterone treatment for low arousal problems. Individuals with a lack of interest in sex should first rule out biomedical issues, including thyroid conditions as well as sex hormone levels, testing for both total levels of hormones and free levels of hormones in the bloodstream to ensure that there are no imbalances. If all hormone levels are normal, a biological problem may exist but is less likely. Prescription drugs, such as blood pressure medications, antianxiety medications, and antidepressant medications, and recreational drugs, such as cigarettes and alcohol, can have side effects on sexual arousal. These are discussed in greater detail in [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#) in the context of sexual dysfunctions.

KEY TAKEAWAYS

- All the senses may have a role in sexual arousal. This includes hearing, sight, smell, touch, and taste, as well as internal sensations.
- Culture, individual differences, and experiences can play a role in influencing whether particular sensory inputs are arousing, neutral, or aversive.
- Both voluntary (somatic) and involuntary (autonomic) nervous system responses are involved in sexual arousal. These include direct routes from the genitalia to the spinal column and back as well as pathways ascending to and descending from the brain.
- The endocrine system involves signaling chemicals called hormones, which affect multiple tissues in the body. Their release is triggered by signaling hormones released in the pituitary gland in the brain, which is stimulated by neuronal activity in the hypothalamus.

- Emotion, motivation, and goal-directed behavior and reward involve multiple pathways in the brain, including the limbic system or midbrain (of which the hypothalamus is one part), the cortex including the forebrain, and receptors in the brain. Neurotransmitters such as dopamine and oxytocin are involved in both reward and sexual activity but also have multiple other roles in many regions of the brain. There is no simple cause-effect relationship between any single neurotransmitter or hormone and sexual behavior.
- In females, estrogen may have a role in sexual interest and arousal. In both sexes, testosterone has a significant role in sexual interest and arousal. Although existing in very different average levels for each sex, the effect is relative to the typical levels for one's own sex, likely due to different sensitivity in the brain for different levels of sex hormones.

3.2 Masters and Johnson's Four-Stage Model of Sexual Response

LEARNING OBJECTIVES

1. Describe the four phases of the sexual response cycle for both males and females.

Masters and Johnson's Four-Stage Model of Sexual Response

We cover this model in the greatest depth not because it best fits every individual's experience of sexual arousal but because it is the model that continues to form the basis of diagnosing sexual dysfunction by most physicians and psychotherapists and has done so since the publication in 1980 of the DSM-III (the Diagnostic and Statistical Manual of Mental Disorders published by the American Psychiatric Association, which includes sexual dysfunctions). William Masters's training was in gynecology (as a medical doctor), and Virginia Johnson's training, initially informal, was as a research assistant and, later, more formally, in psychology. Their professional work together began in 1957 and continued until the 1990s. For a time (from 1971 to 1992), they were also married. Their work began shortly after the famous Kinsey era of surveying sexual histories through surveys and was marked by gathering laboratory data on sexual arousal as it was occurring, taking systematic physiological measures of more than 10,000 instances of sexual activity in 382 women and 312 men, including masturbation and coupled activity (Masters & Johnson, 1966),^[1] and using, in some cases, random assignment to couples (Maier, 2009).^[2] That is to say, research participants agreed to have sex with a total stranger while being observed in the laboratory. Other criticisms of their research include that sexual response in the lab may be different from at home and that most people do not have partnered sexual activity by random assignment. Further, many of their participants failed to reach orgasm, and the data of these participants were excluded (80% of the time, this was the male participants). While this was attributed to anxiety from having sex under observation, it is also possible that these people had a different cycle of response. Thus the most enduring critique is that their model of just one single pattern of response as being "normative" ignored individual

differences in response. Other continuing issues are that the volunteers might not be representative of the population at large (many of whom would not be willing to participate in such a study) and that their paradigm continues to result in professionals stating that there is a single “normal” response pattern, with a focus in sexual medicine, diagnosing and treating people who do not conform to that pattern (Tiefer, 2001). ^[3]

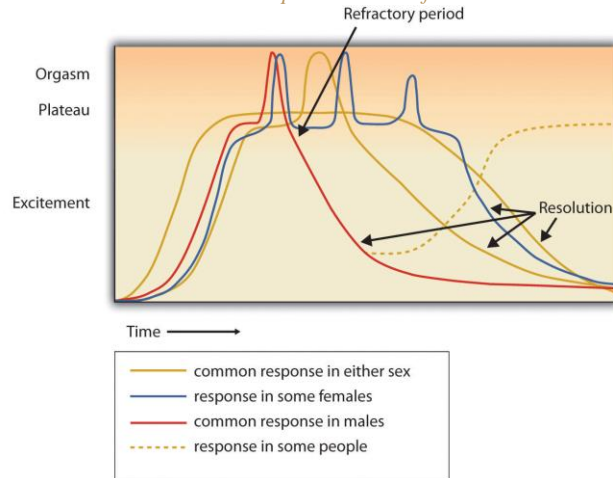
Nevertheless, Masters and Johnson made numerous substantial contributions to sexology. They founded a clinic treating sexual dysfunction and developed behavioral techniques that continue to be helpful for people with sexual difficulties; these are described in detail in [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#). They also helped dispel myths that females did not enjoy sex or functioned entirely differently from males, and in fact, subsequent research shows substantial similarity between the sexes. In many ways, they have become synonymous with the history of sexuality research. As Masters said in an interview looking back on both of their careers, “We are like Kleenex is to tissue” (Nemy, 1994). ^[4]

Their model of sexual arousal is referred to as the four-

phase model of sexual arousal (Masters and Johnson model of arousal) or sexual functioning and is shown in [Figure 3.1 "Four-Phase Sexual Response Model of Masters and Johnson"](#). The four stages are excitement, plateau, orgasm, and resolution. Excitement involves the initial stages of heightened physiological arousal, including increases in breathing, blood flow to the surface of the skin, and heart rate. In females, it is accompanied by increases in blood flow to the labia, clitoris, and vaginal walls as well as the release of vaginal secretions that serve the purposes of lubrication and preparation of the vaginal environment for sperm transport. In males, it is accompanied by an increase in blood flow to the penis, resulting in erection, and often the release of secretions by the bulbourethral glands, resulting in pre-ejaculatory fluid, which primarily prepares the urethra for sperm transport but may also serve minimally as a lubricant. As described in detail in [Chapter 1 "Sexual Bodies: Anatomy and Physiology"](#), similar erectile structures exist in the clitoris (including portions of the clitoris that surround the vaginal walls) and penis. Plateau is a state of maximum physiological arousal, which may be sustained for a period of time prior to orgasm. It may also be accompanied by a *sex flush*, a reddening of the skin on the abdomen and breasts, as increased blood flow occurs throughout the body and heart rate and blood pressure increase. Orgasm is accompanied in both sexes by muscular contractions of the pelvic floor muscles. In females, orgasm is accompanied by contractions of the vaginal wall and, in those females who ejaculate, an ejaculation (more on this follows). In males, orgasm is usually accompanied by ejaculation. In both sexes, orgasm features a higher level of physiological arousal than does the plateau. The only substantial difference

found between the sexes was that most males require a passage of time with a decrease in arousal before being able to experience an additional orgasm, whereas many females do not. This physiologically necessary pause for males is referred to as the refractory period. For females who experience multiple orgasms, there is a return to plateau arousal followed by one or more additional orgasms. In both sexes, the decrease in arousal when sexual activity has finished is referred to as the resolution phase.

Figure 3.1 Four-Phase Sexual Response Model of Masters and Johnson



This shows, for both females and males, the sexual response cycle first identified by Masters and Johnson. Note that the only difference between the sexes is that males have a distinct refractory period, whereas females are capable of multiple orgasms.

3.3 Individual and Sex Differences in Response

LEARNING OBJECTIVES

1. Identify the ways in which desire and arousal are similar for females and males as well as different.
2. Describe the role of NO, cGMP, and PDE-5 in arousal.
3. Describe typical physiological and neurological correlates of orgasm in both sexes.
4. Describe the phenomenon of female ejaculation.
5. Describe the variations in sexual response that occur across the lifespan.

In this section, we consider conceptual issues of sex similarities as well as differences in sexual response, and we also address individual differences. Such individual differences exist not only between people but also for one person from sexual event to sexual event as well as across his or her

lifespan. We consider other aspects of arousal in [Chapter 7 "Sexual Behavior Across Cultures"](#) and [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#).

Sexual Desire and Sexual Excitement (Genital Arousal)

Sexual desire, or *sex drive*, has been found to vary substantially between the sexes, with a higher proportion of males reporting nonspecific generalized sexual interest than females, who are more likely to report specific interest in a particular person (although, as noted previously, both sexes report a similar proportion of thoughts about sex, and males report more need-related thoughts of all types on average). The physiology of genital arousal is similar for both sexes. Since Masters and Johnson's original research, researchers have discovered that arousal is accompanied by a release of multiple transmitters, including acetylcholine and nitric oxide (NO). The NO leads to the relaxation of muscle tissue and the expansion of blood vessels in the erectile tissues, which allows blood to flow in, resulting in erection of the penis or of the erectile tissues of the clitoris. Muscles near these tissues then compress the veins, limiting drainage of blood, strengthening and maintaining erection of the clitoris or penis. The enzymes that cause the increase in blood flow include cyclic guanosine monophosphate (cGMP), the production of which is also stimulated by NO. CGMP naturally breaks down in the body due to production of enzymes known as phosphodiesterases, including phosphodiesterase-5 (PDE-5). When stimulation ends or orgasm occurs, cGMP production is reduced, leading the already secreted cGMP to be metabolized by enzymes such as PDE-5 and causing the erection to end.

While this process is similar in both sexes, significant sex differences exist in the extent to which physiological arousal is consciously perceived by the average person. Since the penis is external to the body, it is rare for a male to have penile arousal and be unaware of it. Most of the erectile structures of the clitoris are internal to the body, and females vary widely in terms of conscious awareness of clitoral arousal. Some are as aware as males; others report relatively little conscious awareness of clitoral arousal. Experiences with masturbation also vary substantially between the sexes, with a higher proportion of males masturbating regularly. For both sexes, more frequent masturbation is associated with heightened awareness of sexual response. Males are more likely to experience rapid arousal and orgasm, and females are more likely to experience delays in orgasm.

Sex differences in desire, arousal, and behavior are discussed in greater detail and with specific statistics in other chapters, in the context of sexual behavior, for both masturbation and partnered sexual activity ([Chapter 7 "Sexual Behavior Across Cultures"](#)), and in the context of sexual dysfunctions ([Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#)). These data reveal an enormously wide range of individual differences—so wide

that while sex differences do exist, knowing whether a person is female or male says very little about that person's level of sexual activity or pattern of arousal or about variations each person may experience over time.

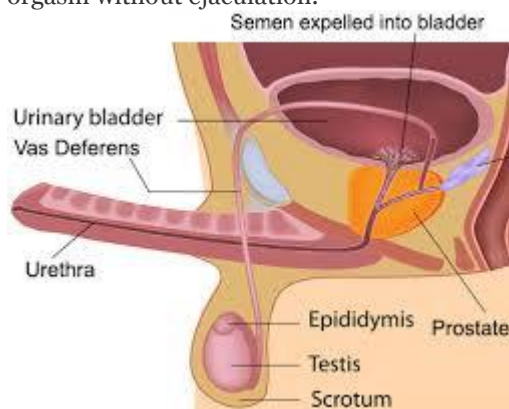
Orgasms

Orgasm is, at a minimum, a sensation of muscular contractions and the feeling of a release of tension in the body. Depending on the person and the situation in which orgasm occurs, it may be little more than a mild relief, like scratching an itch, or it may also be accompanied by almost overwhelmingly intense pleasure and a state of altered consciousness in which spiritual or emotional transcendence is felt. In many people, orgasm is also accompanied by involuntary thrusting of the hips and/or vocalizations. Some people cry after orgasm from the emotional intensity of the experience. While most people experience pleasant emotions after orgasm, some people experience actual sadness or unhappiness. Sadness after orgasm may be related to feelings of guilt or shame. It may also occur as a result of certain brain regions in the limbic system temporarily shutting down and, in a minority of people, being reactivated after orgasm in a manner that "rebounds," causing unpleasant emotions (Burri & Spector, 2011).^[1] In some, headache occurs after orgasm; in others, headaches are relieved. In French, orgasm is sometimes called *le petit mort*, which translates to *the little death*, capturing the wide range of feelings that can accompany orgasm, including, for some, a near-death-like spirituality, detachment from normal consciousness, or a sense of loss of control. As discussed in detail in [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#), a higher proportion of females than males have never experienced orgasm, despite being sexually active and/or masturbating and attempting to experience orgasm. This may be due in part to evolutionary reasons, selecting more highly for orgasmic ability in males. Never having had an orgasm is rare in males but occurs in perhaps 10% of females in cultures where females are highly educated about sexuality, with higher percentages of more than 25% being reported in cultures where females have little comprehensive sex education. The physiological basis for the sensations of altered consciousness that sometimes accompany orgasms appears to be decreased blood flow in certain regions of the brain, including multiple regions of the neocortex, particularly the left orbitofrontal lobe of the neocortex. This is a region of the brain where activity is associated with behavioral control and decreased activity is associated with disinhibition (Georgiadis et al., 2006).^[2]

Males typically experience a refractory period between each orgasm, although this can vary from a few minutes to several hours depending on the male. The refractory period increases in length as a man ages. In both sexes,

prolactin is released in the brain after orgasm. Antipsychotic medications that raise prolactin levels have been associated with decreased ability to become aroused and achieve orgasm.

Some research suggests that males can learn how to experience multiple orgasms without any refractory periods, either without ejaculation or before or after ejaculation (Dunn & Trost, 1989).^[3] However, there are no studies with random assignment of participants to such training, so it is not clear as to what proportion of males can learn this. In the limited clinical literature, some males report always having had this ability, while others learned how to do this but typically learned later in life. Tantric sexual training is one system that claims to be able to train males to have multiple orgasms and to separate orgasm from ejaculation. This is distinct from retrograde ejaculation, in which ejaculation occurs but the bladder neck does not close off and so part or all of the ejaculate enters the bladder instead of the urethra (later revealed by cloudy urine). This condition is not inherently harmful but can result from other medical problems or as the side effects of some drugs, and it can obviously reduce fertility. Some males are able to induce retrograde ejaculation by applying pressure to the penis and pelvic floor muscles just prior to orgasm, but this is different from those who can experience an orgasm without ejaculation.



For both sexes, the psychological and social associations of a sexual experience can be more important in the subjective quality of the orgasm than the physical aspects of the orgasm itself, and the intensity of an orgasm can vary from barely noticeable to extremely intense (Mah & Binik, 2005).^[4] When asked to describe their orgasmic experiences, men and women use very similar language and written descriptions of orgasm by men and women are indistinguishable from one another. In both sexes, the extent of decrease in genital arousal during resolution also varies widely from time to time and person to person, with some people experiencing a complete decline in arousal and others remaining partly aroused. Both sexes may experience heightened

sensitivity (in males, of the penile glans, and in females, of the clitoral glans) that makes stimulation immediately after orgasm unpleasant (Humphries & Cioe, 2009).^[5]

The pattern of muscular contractions in orgasm varies from 10 to 15 contractions on average, altogether lasting between 7 and 21 seconds on average, with considerable individual variation. The same muscles are contracting in both males and females, and at a rate of 0.8 seconds. The strength of these contractions also varies widely, and in both sexes, only the strongest contractions (often the earliest) are consciously perceived. Among males, semen is typically ejaculated only in the first 5 to 10 contractions. The ejaculation may be relatively weak, with semen gently seeping out of the penis, or semen may spurt multiple times.

Female Ejaculation

Female ejaculation was first identified by Aristotle in 300 BCE, and it has been studied under laboratory conditions, using small samples of females who ejaculate (Korda, Goldstein, & Sommer, 2010).^[6] By using urethral catheters and collecting secreted fluid, it appears that there are two types of female ejaculate. One is a few milliliters (approximately a teaspoon) of a cloudy, alkaline, gel-like substance that is expelled from the urethra and oozes from the vagina during orgasm, which appears to be produced by Skene's glands that surround the female urethra—tissue that is homologous to the male prostate gland (Cartwright, Elvy, & Cardozo, 2007; Wimpissinger, Stifter, Grin, & Stackl, 2007).^[7]^[8] Estimates vary widely, with different studies finding between 10% and 69% of females experiencing this at least once and fewer females routinely experiencing a noticeable ejaculate. This type is considered a “true” female ejaculate, analogous to a male ejaculate. The other is a substantially larger amount of predominantly clear liquid forcibly ejected from the vagina during orgasm (which can range from a few milliliters to more than 100 milliliters of liquid, which is enough to soak through clothing or bed sheets; Rubio-Casillas & Jannini, 2011).^[9] These larger ejaculate volumes may be principally the same fluid as true female ejaculate but often include at least some urine, expelled by force from the bladder, usually diluted due to mixing with true ejaculate. It is not considered to be incontinence, as females who experience this do not otherwise have problems with urinary incontinence, and the experience is often pleasurable for the female and her partner. Thus both types of female ejaculate are a normal occurrence for females who experience this. In either case, as with males, the ejaculate may seep from the vagina or may be forcibly expelled. The latter is referred to as gushing or squirting. Distances of more than 2 m (more than 6 feet) have been recorded, but as with males, no laboratory data exist on what is typical.

Lifespan Changes

Specific data on sexual activity at different ages is provided in [Chapter 7 "Sexual Behavior Across Cultures"](#), but here we note that there is wide individual variation in addition to reliable patterns across age cohorts. Although sexual activity is more frequent in young adulthood than during adolescence or later adulthood, many more older adults are sexually active than young adults. Changes for individuals also vary, as some individuals become more sexually active as they age, and others, less so. Many males report some increase in the time for their arousal cycle and refractory period as they age, and many females report an increase in the interval between resolution and next arousal as they age. With older age, many people also report a lessening in the strength of genital arousal, a reduction in vaginal lubrication, a lessening in the intensity of ejaculation and the muscular contractions associated with orgasm, and a faster decline in arousal after orgasm. However, these are largely based on anecdotal evidence; for example, on the topic of postejaculatory refractory period, virtually no published scientific data exist in humans that studies the same individuals across a period of time or cross-sectionally compares various age cohorts (Levin, 2009). ^[10] The extent to which these changes occur is highly variable, and research on the prevalence of disorders relates strongly to overall health, particularly circulatory system health, with heart disease, obesity, smoking cigarettes, and lack of exercise having particularly pronounced effects on reducing arousal levels. Some aspects of typical age-related changes are perceived as positive, such as greater control of orgasms and greater comfort with sexuality, which may lead to increases in satisfaction with sexual activity. Although intensity of muscular contractions and ejaculation usually decrease, the intensity of perceived orgasm may decrease, remain the same, or increase, as pelvic floor muscular contractions are only one component of the subjective experience of orgasm.

KEY TAKEAWAYS

- The physiological mechanisms of genital arousal have similarities and differences in both sexes.
- Some average sex differences exist in the frequency of different types of dysfunction experienced with the response cycle. In females, disorders of desire and delayed orgasm are more common, while in males, disorders of arousal and too-rapid orgasm are more common. However, differences between individuals are so great that knowing whether someone is female or male is not particularly predictive of an individual's experience.
- Orgasm involves a sequence of events both in the pelvic floor muscles and in the brain, with many similarities between the sexes. Some differences between the sexes are that most males do not experience multiple orgasms whereas many females do and that females have a higher incidence of difficulty achieving orgasm than males do.
- An unknown percentage of males are able to experience multiple orgasms without a refractory period.
- An unknown but likely small percentage of females are able to experience ejaculation during orgasm.

- Sexual arousal response cycles tend to lengthen and decrease in intensity over the lifespan—more so in the case of poor health. Little data exist on the precise rates of change. Some people become more sexually active as they age, and others, less.

3.4 Sexual Attraction

LEARNING OBJECTIVES

1. Describe the role of facial symmetry, skin smoothness, masculinization/feminization, body weight, and body shape in influencing sexual attraction.
2. Identify the role of pheromones in attraction and how they relate to sex hormones.
3. Describe results of research that shows that fertility and ovulation affect whom females are attracted to as well as how attractive females are, and identify how oral contraceptives may affect this.
4. Identify the role of familiarity in attraction.
5. Describe socially learned aspects of attraction and how these sometimes reflect gender roles.

Facial Symmetry

Who is more attractive? Donald Trump or Johnny Depp? Oprah Winfrey or Tyra Banks? Queen Elizabeth II of England or Angelina Jolie? Regardless of your sex or sexual orientation, more people would pick the latter of each pair than the former. A few moments spent looking at today's advertising for clothing, perfume, cologne, or most consumer items shows a fairly narrow range of body types and ages of actors and models, who are attractive for most viewers; people in advertising who look quite different from the norm for attractiveness often have a comic role. [Figure 3.2 "Hot or Not?"](#) shows some images from various cultures and historical eras showing that, taking a broader view, there is substantial cultural variation in what is considered attractive. However, certain patterns emerge across cultures in many studies, suggesting that there is also a biological basis to attraction that transcends culture, which is not surprising given that sexual selection is a force in the evolutionary history of any species that reproduces sexually. Those adaptations that promote survival tend to be selected, and those traits that lead to reproduction will be passed on to the next generation. A more in-depth exploration of evolution and sexual selection was provided in [\(Reference ty_1.0-ch02 not found in Book\)](#), where we also explored the fact that most psychology and sexology research is conducted on populations of relatively affluent, educated participants from industrialized and often democratic societies. These societies share many common cultural aspects, including having developed from agricultural patriarchies, so claims of “universality” in the following research should be qualified. Of course, even indigenous peoples living in nonagricultural tribal









societies have some contact with other cultures, and so no cross-cultural research can truly assess humans in cultural contexts equivalent to evolutionary ancestral environments.

Figure 3.2 *Hot or Not?* ^[1]



Beauty ideals show considerable cultural and historical variation and have, at times, included modifications causing functional impairments. Such modifications are shown in the first two images, from left to right: foot binding of girls in China (banned after the Communist revolution), and a Surma woman's lip modified with a lip plate. The other images show shifts in ideals of male body fat: 16th century King Henry VIII, and 21st century pop star Justin Bieber.

One variable that has emerged from cross-cultural research on attractiveness is that facial symmetry is a strong indicator of attractiveness (Fink, Neave, Manning, & Grammer, 2006), ^[2] which is something that is also found in non-Western, affluent industrialized countries such as Japan (Rhodes et al., 2001). ^[3] Interestingly, the magnitude of the preference appears to vary with being reminded about disease. For women, the magnitude of the effect tends to vary with where they are in their menstrual cycle. There is a logical reason as to why this preference is adaptive and would have been selected by evolution: a single genetic program codes for the left and right half of the human body, and fluctuations between the left and right halves are more common in people with genetically linked disorders as well as in those who have been affected by infectious disease or atypical hormonal events in utero. In addition, developmental events such as injury often lead to asymmetries, and injuries are more common in people who might not be as fit in an evolutionary sense (e.g., weak eyesight, poor coordination, slow reaction time). Thus being preferentially attracted to those with facial symmetry would indirectly select for stronger genes, and both natural selection and direct sexual selection would lead to individuals with greater symmetry (as well as the preference for it) having more surviving offspring.

	Most attractive	Least attractive	Most attractive	Least attractive
Man				
Woman				

We find more attractive those faces that are balanced and symmetrical.

Humans also have a preference for smooth skin and clean appearance. Again, this is hypothesized to relate indirectly to detection of disease resistance. The greater the prevalence of pathogens in a social environment, the more importance people place on physical attractiveness (Gangestad & Buss, 1993). ^[4] The preference for both facial symmetry and clear skin is an excellent illustration of how cognitive mechanisms can be the result of evolutionary forces and can work largely or entirely beyond conscious perception in humans, interacting with our unconscious experiences as well as our conscious thoughts and influencing our feelings, sexual behavior, and attraction.

Femininity/Masculinity

Another significant aspect of attraction is femininity/masculinity. The width of the chin, position of the cheekbones, and size of the nose differ between the sexes as a result of androgen exposure during adolescence. This is particularly noticeable when comparing individuals from a similar racial and ethnic background. An individual who has a face that is more clearly masculine or more clearly feminine (in accordance with his or her sex) is judged as being more attractive. Researchers have used photo-editing software to manipulate images so as to objectively control the degree of masculinization/feminization of a face, presenting more masculinized or feminized versions of the same face to different participants in an experiment (Little, Jones, DeBruine, & Feinberg, 2008). ^[5] The preference for masculine faces is stronger in heterosexual females who are at a fertile point in their menstrual cycle (Gangestad & Thornhill, 2003). ^[6] Although heterosexual people of both sexes prefer more strongly sex-typed faces, the effect is stronger in females, perhaps relating to the higher cost of reproduction for females. This may also explain why a subset of individuals attracted to the same sex like “straight-looking” partners (the attraction to males or to females is oriented toward typical manifestations of that sex, regardless of one’s sexual orientation).

Other Aspects of the Body: Weight and the Hourglass/Triangle

If one looks at historical paintings from Europe in the 1600s, American movie icons of the 1950s, and contemporary film stars, one can see obvious changes in ideal body weight. This has shifted from obesity to a body fat percentage in males that requires hours of physical training each day and, in females, borders on anorexia. Clearly an attractive body weight varies by culture and historical era. It can even vary by current context; for example, males who are feeling hungry or who are poor prefer heavier females.

While body weight and body fat have different ideals, consistent across historical eras is the fact that females are often portrayed with an “hourglass” figure, with a substantially larger bosom, smaller waist, and wider hips, and that males are often portrayed with a “triangular” figure, with broad shoulders and a waist that is only slightly smaller than their hips. Researchers have consistently found these patterns, regardless of body weight, with heterosexual females preferring a 0.9 waist-to-hip ratio (WHR) in males and heterosexual males preferring a 0.7 to 0.8 WHR in males—even males who are blind (Connolly, Slaughter, & Mealey, 2004; Cashdan, 2008; Karremans, Frankenhuys, & Arons, 2010).^[7]^[8]^[9] Neural reward centers in heterosexual males are activated by images of females with the ideal WHR (Platek & Singh, 2010).^[10] The biological basis of this is presumed to be that women with a 0.7 WHR are more likely to have more offspring; however, most women have a higher WHR, which is associated with greater strength, representing an evolutionary trade-off, as both strength and number of offspring are adaptive traits (Cashdan, 2008).^[11] Some studies show more cultural variability, but the sex difference in WHR has been shown across a wide variety of cultures, including nonindustrialized peoples.

The baby-faced look in adults is also a characteristic that is deemed attractive. Ironically, this works in opposition to masculinization/feminization of faces, and it is likely due to an overall positive effect that babies’ faces produce in humans. This generalizes to baby-like characteristics in nonhuman animals such as puppies, kittens, and animated characters, involving a relatively round head, large eyes, large mouth, and small nose (Cunningham, Barbee, & Pike, 1990).^[12] This preference exists cross-culturally and is adaptive, as it encourages parents to treat their babies well, and it incidentally explains why Internet memes of cute kittens, puppies, and baby seals are equally appealing around the world.

Smell

Researchers disagree regarding the importance of smell in human sexual attraction. Pheromones are *signaling chemicals that affect behavior in animals*. Pheromones have clearly demonstrated importance in attraction in

many species, from insects to mammals, but most researchers believe that smell is a comparatively vestigial sense in humans and that pheromones play a reduced role in human sexual behavior. As we discuss in detail in [Chapter 9 "Fertility, Contraception, and Abortion"](#), concentrated exposure to pheromones can affect menstrual cycles; and as we discuss in what follows, smells that relate to fertility significantly affect attraction for females depending on where they are in their menstrual cycle. However, in terms of types of smell making individuals more or less attractive relative to one another, that research is inconsistent.

Hormones

As described earlier, sex hormones affect attractiveness in a permanent fashion in both sexes through masculinization or feminization of the face and body as well as in a transitory fashion in terms of sexual response, arousal, and desire. They also have a third mechanism of action: on attraction. This has been observed only in females, affecting whom a female is attracted to as well as how attractive a female is to others. For example, Miller, Tybur, and Jordan (2007) ^[13] surveyed erotic dancers, comparing self-reports of where they were in their menstrual cycle to their self-reports of tips. Tips went from \$185 per shift during menstruation (conception impossible) to \$260 across the luteal phase (conception possible), with a peak of \$335 at peak fertility (conception most likely). Lap dancers on oral contraceptives earned only \$193 per shift on average and showed no fluctuation across their menstrual cycle. More controlled lab studies also have showed that the perceived attractiveness of a female to heterosexual males varies according to the female's menstrual cycle, with peak attractiveness at peak fertility. This has been demonstrated in studies that have used smell, having males smell t-shirts worn by women at various stages of their cycle. In these studies, exposure to a female's smell when she was at peak fertility affected the following: attraction to the female, risk-taking behavior, and general mental accessibility of sexual concepts (Miller & Maner, 2011). ^[14] Other researchers have found that the sound of a female's voice and her style of walking vary according to where she is in her menstrual cycle, and there are also visual and auditory cues of fertility. Even though these biological cues of fertility affect attraction in measurable ways, humans have concealed ovulation, meaning that neither sex is consciously aware of the exact time of peak fertility. This is in contrast to most mammals and primates, where sexual behavior is timed to female ovulation and there are behavioral and visible cues of female fertility (such as brightly colored genital swellings in female chimpanzees).

For some females, fertility also changes whom a female is attracted to. Most of this research has focused only on heterosexual people. During peak fertility, straight females are more attracted to more-masculine males, and

there is a preference for less-masculine faces at other times (Penton-Voak et al., 1999; Johnston, Hagela, Franklinb, Finkc, & Grammer, 2001). ^[15] ^[16]

The hormone oxytocin *serves multiple roles in the brain and body, including effects on orgasm, attraction, and attachment*. Produced by the hypothalamus gland and stored in the pituitary gland, oxytocin has effects in the brain as well as elsewhere in the body (Squire, 2003). ^[17] In females, it stimulates uterine contractions during orgasm as well as during childbirth, and it is secreted at higher levels prior to breast-feeding in lactating females. Oxytocin administered in nasal sprays (compared to a placebo) has been shown to have a causal role in social liking as well as sexual arousal; however, correlational research in the real world shows a weak correlation between observed levels of oxytocin and helping behaviors, suggesting that social factors are more important in real-world interactions (Burria, Heinrichsa, Schedlowskib, & Kruger, 2008; Reyes & Mateo, 2008). ^[18] ^[19]

Context and Familiarity

General physiological arousal, such as being afraid, can heighten one's attraction to a nearby person. One of the most classic experiments in psychology of all time, which was conducted by Dutton and Aron (1974), ^[20] involved having a male or attractive female interviewer approach males in a Canadian park who had crossed either a wide, sturdy wooden bridge about 3 m above a stream (one floor high) or a very high, narrow, long, swaying suspension bridge more than 70 m above a rocky riverbed (about 20 floors high—an Indiana Jones-esque bridge). At the end of a psychological test that included asking the person to tell a story about an ambiguous illustration (a picture from the Thematic Apperception Test), the interviewer gave his or her phone number to the male participant. Those approached by a female after crossing a shaky bridge were about four times more likely to call than those approached by a female on the low bridge or by a male on either bridge and also had substantially more sexual content to their stories. As the authors noted, it is possible that people choosing to go on the high bridge were different from others, but recent research where arousal is more carefully manipulated independently of personality shows a similar relationship, with higher anxiety being associated with greater attraction. Schachter and Singer's two-factor theory of emotion suggests that context provides cues for cognitive labeling of generalized arousal, which would explain this effect (Schachter & Singer, 1962). ^[21]

Dutton & Aron (1974) Study

Schachter & Singer Two-Factor Theory of Emotion

Familiarity with stimuli generally produces a reduced response, known as habituation. This effect has also been demonstrated with sexual stimuli such as a photograph, where repeated presentations of the same erotic image were accompanied by reduced arousal. However, when paired with an erotic video, the same still image created a greater sexual response over time, also showing that the strengthening of a sexual response is an effect of classical conditioning (Lalumiere & Quinsey, 1998).^[22] Classical conditioning of increased sexual response to a stimulus has been shown in males in multiple studies (Hoffman, Janssen, & Turner, 2004).^[23] In females, genital arousal has been conditioned in the same manner as in males, but there is often no report of perceived arousal to the conditioned stimulus (Both, Brauer, & Laan, 2011; Hoffman, Janssen, & Turner, 2004).^[24]^[25] Familiarity can also produce liking. Another classic experiment in social psychology showed that the chances of becoming friends for people randomly assigned to a dorm residence increased as the distance between their rooms decreased (Newcomb, 1961).^[26] Replications of the experiment continue to show an effect that being near someone and having more frequent interactions increases nonsexual friendship, and it is parsimonious to assume similar effects on sexual attraction.

Culture-Specific Attraction

Take another look at [Figure 3.2 "Hot or Not?"](#). Lip plates, also called labrets or lip plugs, are rarely seen in industrialized countries but have arisen independently in indigenous peoples in Europe, the Asian/Pacific region, East Africa, and the Middle East (Keddie, 1989).^[27] Lip plates are considered a fairly common form of facial piercing by anthropologists (DeMello, 2007).^[28] In some tribes, both sexes have the piercings, while in others, only one sex has them—or neither sex. Sex-specific piercings of the earlobe are common in contemporary industrialized societies, with females having more piercings than males. In the 1950s in the United States, it was uncommon for males to have ear piercings but common for females to have them. In the 1980s in the United States, ear piercings became associated not only with sex but also with sexual orientation: some heterosexual males would have only their left ear pierced, while some gay-identified males would have only their right ear pierced or both ears pierced; this distinction is not so common in the 2000s. In the 2000s, the insertion of ear plates to stretch the earlobe has become fashionable in some young adults in industrialized countries—especially males. In many indigenous cultures in Africa, this custom is common in females. Clearly, body adornments and piercings are influenced by social expectations, environment, and learned culture, and

the trends in such piercings shift relatively rapidly, but an individual often feels like the decision to have an adornment is a free choice. In some cultures, the choice for adornment is to identify with the family and cultural traditions of one's parents, while in other cultures, such a choice is made in order to mark a break with the traditions of parents (and to establish a commonality with peers). Body adornments can become associated with sexual attraction for some people and aversion for others. Tattoos are another common example of a type of body adornment that varies across culture, historical era, and symbolic meaning or sex-role specificity, with some cultures shunning tattoos and considering them unattractive or a sign of criminal behavior and other cultures, such as the Māori of New Zealand, traditionally embracing body and/or facial tattoos. In the youth-oriented industrialized world, adolescent identity formation is often associated with breaking from parental traditions, and having a type of body adornment that is not typical for one's parents' generation may contribute to the rapidly shifting development of generation-specific adornments.

In many cultures, sex-specific body adornment or modification may also reflect as well as shape societal gender roles and has at times involved significant functional impairment. For example, in China, foot binding was practiced from at least the early 1000s, falling into and out of fashion across the ages and dynasties until finally being eliminated with the Communist Revolution in the late 1940s (Fairbank & Goldman, 2006).^[29] The practice involved only females. Mothers who could afford it would have a specialist take the feet of their daughters and, beginning in early childhood, systematically break their toes and then tightly bind the feet so as to prevent normal bone development. This would require frequent unwrapping of the bindings, cleaning the feet of decaying tissue, and rebinding, with occasional rebreaking of bones throughout childhood and adolescence. By adulthood, a female would have feet so small that it was impossible for her to walk or perform any work. This was primarily a marker of social status, as only very affluent women could survive in this manner, although from time to time between the early 1000s and the early 1900s, it became more widely practiced in the middle classes, falling into or out of favor depending on the era. It was also deemed highly attractive by men, as it indicated that a woman was from an affluent family. Foot binding reflected, in high-status women, the role of a woman in ancient patriarchal Chinese society as being entirely dependent on her husband's and male relatives' families, with a primary function being to bear (male) descendants. It also served to perpetuate this role, as it made it physically difficult for high-status women to do anything other than be served (Fairbank & Goldman, 2006).^[30] Infections are believed to have killed up to 10% of females who underwent foot binding, and in the early 2000s, there are still a small number of elderly women who remain

disabled from having had their feet bound as children prior to the Communist Revolution. It also, of course, caused immense physical pain.

Although it may not be so evident, bodily modifications that fall primarily on one sex and not the other frequently reflect and reinforce culturally learned gender roles. For example, in the United States, steroid abuse is relatively infrequent, with 1.4% of high school students overall using steroids, but it is much higher in males than in females and is higher in those participating in sports. Furthermore, almost half (49%) of all students, including the vast majority who are nonusers, believe that steroids improve athletic performance, and nearly as many (38%) believe that steroids improve appearance (Lorang, Callahan, Cummins, Achar, & Brown, 2011).^[51] While males may be predisposed to higher rates of substance abuse and risk-seeking behavior, the association of masculinity with muscles and athletic prowess may also factor into the greater likelihood of males abusing steroids, and it helps to reinforce the cultural ideal of males as highly muscled and females as less muscled (to a greater extent than the natural sex difference in musculature).

Females are much more likely than males to seek cosmetic surgery in the United States, with treatments to reduce the appearance of aging in the face and breast augmentation being commonly advertised procedures. We include research on cosmetic surgery in [Chapter 6 "Sexual Difficulties, Dysfunctions, and Treatments"](#) in the context of perceived inadequacies and the desire for enhancing function and appearance.

3.5 Sexual Orientations

LEARNING OBJECTIVES

1. Define sexual orientation, including the concepts of asexuality and sexual fluidity and the many different terms and identity labels associated with sexual orientation and gender identity.
2. Identify the various aspects of orientation that are measured by researchers, some common scales of measurement and the results of that research.
3. Define sexual fluidity and bisexuality with reference to whether sexual orientation can be changed.
4. Identify the possible role of evolution, brain differences, genetics, the Fraternal Birth Order Effect and gendered behavior differences in the development of homosexuality, with reference to the Darwinian Paradox.
5. Describe the possible role of prenatal hormones on the development of homosexuality.

An Orientation to Orientations

Because sexual orientation is one of the most asked-about topics, we explore it in two sections: one that focuses on the causes of orientation and another that focuses on laws and religious perspectives. For many individuals,

whether they are attracted to one sex or both sexes, the characteristics that differentiate biological sex are an important component of what turns them on in desire, fantasy, attraction, and arousal.

We begin with some vocabulary and assume that the reader has read [Chapter 2, Section 1 "What Is Female and Male? Definitions & Genetics"](#), which explains sex differentiation and details the difference between sex (i.e., biological sex), gender identity, and gender role conformity. In this text, we use sexual orientation to refer to *the typical biological sex and gender identity of the people to whom someone is sexually attracted, including aspects of physical attraction, emotional and romantic attraction, and sexual behavior, as well as aspects of self-identity related to the pattern of one's sexual attractions*. We then explore in detail how some definitions and measures of sexual orientation have focused only on one component of orientation (such as behavior or self-identification). We consider and define self-identity labels and see how they don't always relate to behavior. We then explore research on what contributes or causes sexual orientation and whether it is a flexible or fixed characteristic. Lastly, we explore what research has to say about those who self-identify other aspects of sexual attraction as an "orientation" that are not related to sex or gender (such as age or an activity).

We also note that many sexuality textbooks devote a chapter to sexual orientation and may actually focus on nonheterosexual orientations, sometimes referred to as sexual minorities. Rather than doing this, here we focus on sexual orientation itself (for all orientations), and we cover applied aspects of sexual orientation (for all orientations) across multiple chapters, as sexual orientation is just one of many dimensions of sexuality. We cover research on gay and lesbian parents in [Chapter 10 "Pregnancy, Childbirth, and Parenthood"](#), which is the same chapter where we consider parenting for heterosexual individuals and research on same-sex couples, and in [Chapter 5 "Sexual Relationships, Love, and Communication"](#), which is the same chapter where we address relationships with other-sex couples. We do this because research shows that people of all sexual orientations face many of the same issues, and where specific research exists for different sexual orientations, it's more useful to consider it the broader context of the topic.

To summarize, in this section we focus on those aspects of sexual orientation that relate to arousal and attraction (the main focus of this chapter) and on the origins of sexual orientation for all orientations. For many people, if you are deeply attracted to someone, that person's gender and biological sex is one of several important parts of what makes that person attractive. Because sexual orientation and attempts to regulate it exist in the contemporary world and closely relate to the presumed origins of sexual orientation, we also address these political and religious issues in [Chapter 3, Section 6 "Sexual Minorities, Religion, and Law"](#).

Asexuality

Asexuality is a newly emerging classification of sexual orientation. It refers to people who do not experience any significant sexual attraction to either sex. People who are asexual appear to represent about 1% of the population and form a diverse group with no single self-identity or single pattern to asexuality (Bogaert, 2004).^[1] Some asexual individuals do enjoy masturbation but have no attraction to others and no interest in forming anything beyond friendships with other people. Some, however, have no interest in sex but feel an attraction that, while not physical, goes beyond friendship, and they desire an emotionally intimate relationship that may include marriage (this nonsexual attraction can be to the other sex, to the same sex, or to both sexes). Asexuality is a relatively recently identified concept in research, so, beyond estimates of prevalence, little additional research exists, and people's self-identification frequently shifts or may mean quite different things for different people (DeLuzio, 2011).^[2] Asexuality is distinct from individuals who have in the past been interested in sex but experience a decline in sexual desire, arousal, or interest and wish to return to their prior level of interest; in such cases, the absence of desire would be considered a sexual dysfunction by most clinicians. It is also distinct from people who have sexual interest but with arousal directed toward nonhuman targets.

Some people who self-identify as asexual feel that it is helpful to consider asexuality as a unique category of sexual orientation, and it is a part of their self-identity and self-experience, just as other types of orientation are for most others. Other people who self-identify as asexual feel that their asexuality is the absence of a sexual orientation. Others experience it as a variation in level of sexual interest: if level of sexual interest is a normally distributed trait varying continuously, some people are very high, most are average, and some will naturally be very low or, for practical purposes, have no interest in sex. Regardless, as most people have some interest in sex, having a self-identity as asexual can be helpful conceptually, as this is one of many variations in human sexuality. Individuals who are asexual but desire relationships and companionship may want to let prospective partners know this and consider a sexually nonexclusive relationship with their nonasexual partners, or they may want to date within asexually identified communities. Many people who are not asexual may feel unfulfilled in an intimate relationship that is companionate but not sexual.

Orientations: What to Call Them—LGBTQQI2SAAPSGLHS?

Although asexuality is a somewhat new term, it is perhaps the easiest to define: it is the absence of sexual interest. But how should we characterize other orientations? For example, if someone is attracted to people of

the other sex, the dictionary term that is used by many sexologists is heterosexual, and the colloquial term is straight. But what about people who are primarily attracted to those of the other sex but who occasionally feel romantic but not sexual attractions for people of the same sex? Or who feel sexual but not romantic attractions to one sex but experience both types of attraction to the other sex? Or some other combination? Would one call them bisexual or heteroflexible or say they have a variable orientation? Or does bisexual only apply if there are both romantic and sexual attractions for at least some people of both sexes and/or gender identities? How would one define the sexual orientation of a person such as George Rekers? Rekers identifies as straight/heterosexual, spent decades married to a female, and was one of the original founders of the conservative Family Research Council, which has spent millions lobbying against same-sex marriage. Rekers was also a lead organizer of an organization known as the National Association for Research and Therapy of Homosexuality (NARTH), which published dozens of studies arguing that same-sex orientation is a choice, is morally wrong, and can be changed, and he even began his career as a psychologist attempting to use behavior therapy to make gender-nonconforming boys act in stereotypically masculine ways. Rekers's public career for changing orientation ended somewhat abruptly late in his life, when he was identified as having hired a male prostitute to carry his luggage and provide him with naked massages on a European vacation (Rich, 2010). ^[3] He denied that the massages were naked but acknowledged that they occurred, and he said he was unaware that the young man was a sex worker. Would one use the term *heterosexual, bisexual, or gay but in denial (or dishonest)* to characterize Rekers?

Separate from the dimensions to sexual orientation are the words for different patterns that have been observed. The American Psychological Association (APA) style guide encourages people to use the terms heterosexual(s), bisexual(s), gay male (gay man or gay men), and lesbian(s) for common sexual orientation categories based on self-identification, and transgender for *gender identity different from apparent outward biological sex*, all of which are the terms we primarily use in this text. Thus, by these terms, *heterosexual* is defined as *an attraction to people of the other biological sex and/or gender identity, or female-male attraction* (colloquially “straight”); *bisexual* involves an *attraction to both sexes* (“bi”); *gay males* refers to *males who are attracted to males*; and *lesbians* refers to *females who are attracted to females*. The APA encourages writers to use the terms *same gender* and *other gender* for referring to behavior, rather than saying *same sex* or *other sex*. They do this to avoid confusion for the reader between biological sex and sexual behavior; however, we do not do that here, because sexology research often differentiates between biological sex and gender, and by now we hope that the reader is

aware of the distinctions between (biological) sex, gender in its several aspects, and sexual behavior. Many studies that focus on attraction and orientation study visible cues of biological sex (as seen in [Chapter 3, Section 4.1 "Facial Symmetry"](#) on facial attraction), so when we use the term *sex*, it's with the understanding that we are referring to biological aspects of sexual differentiation, and when we use the term *gender*, we are referring to social, cultural, and self-identity-related aspects of masculinity and femininity.

The APA also encourages writers to avoid heterosexual bias by not *assuming that people are a particular sexual orientation*, both in research and in professional writing. Making fewer assumptions that may later require corrections is also a good idea in casual conversation; if someone mentions that he or she is married or in a relationship, it would be biased to assume that the person's partner is of the other sex. Using gender-neutral language and language that makes fewer assumptions can sometimes be slightly cumbersome, but it avoids putting a burden on someone else to have to correct any inaccurate assumptions you made, and it makes that person feel welcome to express his or her identity.

Many sexologists involved in research continue to use terms that the APA discourages—*heterosexual*, *bisexual*, and *homosexual* for orientation categories—so we refer to those terms as well when describing a study that used those terms. All these terms face a limitation when researching individuals who are transgender; most transgender individuals prefer orientation terms referring to their identity, but many researchers use terms related to biological sex at birth. For people who do not like a binary identification of gender and for some people who are intersex (disorders of sex development), orientation terms also do not readily map to experience. Because of this, a few researchers use the terms *androphilic* (attracted to males) or *gynephilic* (attracted to females) for those who have an attraction to just one sex (monosexual) and *ambiphilic* for those who experience attractions to either sex. Individuals who identify as genderqueer may use the term *pansexual* to refer to orientation (although this, too, can be a gender identity for some).

Another issue for researchers is that a significant percentage of people's sexual arousal and behavior does not align with their self-identity label (we consider the exact percentages shortly). Researchers disagree about whether orientation should apply to self-identification, sexual behavior, or physical arousal or if it should reflect a combination of all three as well as emotional attractions. Other self-identification terms for nonheterosexuality include *queer* (which may be offensive if used by a heterosexual person but for some nonheterosexual people represents a retaking of a historically pejorative term), *questioning* (for those who may be uncertain of their attraction), *same-gender loving* (popular in some African American communities), *allies* (for

a heterosexual person who is very supportive of nonheterosexuals), *pansexual* (for a person who experiences attraction primarily to personality characteristics and not on the basis of someone's sex, which is a variation of bisexual), and *two-spirited* (as discussed in [Chapter 2 "Gender Identity and Sexual Development"](#), a term used by some Native American Indian peoples to capture a variety of gender identities and sexual orientations; common equivalents exist in many other indigenous cultures). This leads to an “alphabet soup” of initials, to sum up all that we’ve covered so far: LGBTQI2SAAPSGHLHSC (lesbian, gay, bisexual, transgender, questioning, queer, intersex, two-spirited, asexual, allies, pansexual, same-gender loving, heterosexual, straight, and cisgender). (*Cisgender* refers to someone who is not transgender, meaning gender identity and outward sex are concordant.)

Most psychology research simply refers to LGBT to cover all variations of sexual minorities, but in earlier decades, research referred to only LGB, and even earlier, it just referred to GL or LG, reflecting an increasing complexity in our understanding of sexuality and identity as well as the desire to be increasingly inclusive of the spectrum of diversity that has always existed but may not have been recognized. Many medical researchers who focus on disease transmission prefer to use *MSM* and *WSW* for males who have sex with males and for females who have sex with females, respectively, as certain populations may have specific health issues, and identity-based labels may overlook some at-risk individuals. For example, in the United States, women who only have sex with women and identify as WSW are less likely to be tested for sexually transmitted infections (STIs) due to a mistaken belief that STIs affect only heterosexual men and women or gay men (Bauer & Welles, 2000).^[4] Some populations of men who have sex with men identify as straight—not gay or bisexual—and so health campaigns targeted to reduce HIV infection (higher in MSM populations in the United States) are more effective if they refer to MSM behavior rather than if they identify terms such as *gay* or *bisexual*. Most research on sexual orientation refers to lesbian, gay, or bisexual populations.

Human Sexuality - It's Complicated

Multiple Meanings and Measures of Orientation

There is no agreement on the best way to measure orientation, even confining oneself to the LGB categories. This is true after more than 100 years of scientific efforts to develop measures for sexual orientation. The 19th-century German researcher and physician Magnus Hirschfeld suggested that all individuals have varying degrees of both masculinity and femininity and that attraction exists on a continuum to both sexes, varying for

an individual, so someone may have low attraction to both sexes, higher to one sex than the other, or high to both sexes. Hirschfeld suggested that a 10-point scale be used for attraction to females and attraction to males (Brennan & Hegarty, 2007). ^[5]

In the 1940s, U.S. biologist and sexologist Alfred Kinsey and his colleagues developed a seven-point scale of orientation on a single dimension rather than on two, which is now referred to as the Kinsey Scale and is numbered from zero to six. A Kinsey zero signifies complete attraction to people of the other sex, and a Kinsey six signifies complete attraction to people of the same sex, with gradations in between. Kinsey based his scale on people's self-reported sexual histories, with researchers assigning a score based on an analysis of the person's psychosocial history of attractions, including a history of sexual behavior. The strengths of Kinsey's scale are that it recognizes that there are variable degrees of attraction to either sex, and that it more closely aligns with typical experience (e.g., most people who are highly attracted to the other sex tend to have little attraction to the same sex). Weaknesses of the scale include that it does not differentiate between attraction, fantasy, or behavior but puts them all together under a subjective judgment and that the construction of the scale suggests a one-dimensional continuum with a trade-off between other-sex and same-sex attraction, which does not characterize every person's experience. As Sell (1997) ^[6] noted, there is also considerable difficulty in distinguishing between a Kinsey two, three, and four (all of which include fairly significant amounts of sexual behavior with both sexes), and it's virtually impossible to define an exactly equal Kinsey three; for people with some attraction or experience with both sexes, a rating by Kinsey's scale as "more heterosexual" or "more homosexual" may depend on the accuracy of a person's recall and may also be affected by his or her current identity. Whether orientation is categorical or has one dimension or several dimensions is something that should be answered by research, and an ideal scale would permit measurements of all these possibilities rather than presuming the nature of orientation to be a single continuum and only measuring it in one way.

Heterosexual and homosexual experience						
0	1	2	3	4	5	6
Exclusively heterosexual	Incidental homosexual	More than incidental homosexual	Equally hetero- and homosexual	More than incidental heterosexual	Incidental heterosexual	Exclusively homosexual

Kinsey Scale

Fritz Klein (Klein, Sepekoff, & Wolf, 1985) ^[7] developed a more nuanced scale referred to as the Klein Sexual Orientation Grid (KSOG), which is composed of three rankings (past, present, ideal) on seven separate variables: sexual attraction, sexual behavior, sexual fantasies, emotional preference (for which sex one feels love), social preference (which sex one likes to spend time with for friendship), heterosexual/homosexual lifestyle (what the self-identified sexual identity of one's friends are), and one's own self-identification. Each of these 21 items (the past, present, and ideal rankings for each of the seven variables) is ranked on a one-to-seven scale: *other sex only*, *other sex mostly*, *other sex somewhat more*, *both sexes*, *same sex somewhat more*, *same sex mostly*, *same sex only for the first five items*, and *sex is replaced by heterosexual or gay/lesbian for the last two items* (that refer to identity labels). The benefits of the KSOG are that it recognizes that some people change over their lifespan and also that it recognizes that, for many people, sexual behavior, fantasy, friendship, and love do not always align in the same direction all the time. The disadvantage is that the meanings of some of these items are easily misunderstood. For example, some heterosexual females particularly like to have gay male friends to have a male friendship that is nonsexual, which would be captured by the KSOG lifestyle question, yet many respondents may misunderstand this. Importantly, the scale is quite complex and time consuming to administer. Although it is often used, its psychometric properties appear inconsistent depending on the study, meaning that the discrete dimensions the test assesses may not actually map commonly identified orientations (Sager, 2006). ^[8]

Klein Sexual Orientation Grid						
Variable	Past		Present		Ideal	
A. Sexual Attraction						
B. Sexual Behavior						
C. Sexual Fantasies						
D. Emotional Preference						
E. Social Preference						
F. Self-Identification						
G. Straight/Gay Lifestyle						
1	2	3	4	5	6	7
Other sex only	Other sex mostly	Other sex somewhat more	Both sexes equally	Same sex somewhat more	Same sex mostly	Same sex only

Klein Sexual Orientation Grid

Ritch Savin-Williams, a researcher in the field of sexual orientation in adolescents and young adults, along with his colleagues found that adolescents do not place the same importance on sexual behavior and fantasy as researchers have typically done but instead found the most important elements of attraction to be whether they have a physiological response (arousal) and whether they have a cognitive response (Friedman et al., 2004).^[9] They also found that for adolescents and younger adults, orientation identity labels are less likely to be important. They suggested that a better measure of orientation would be to ask people the frequency of recent physical and emotional attractions to females and to males and use self-reports of the intensity of these feelings toward the person for whom they have felt the strongest attraction. Using a particularly large population-based sample of adolescent health—a dataset of more than 12,000 participants—Savin-Williams and Ream (2007)^[10] found that behavior, attraction, and self-identification are usually but not always aligned. Furthermore, they are not necessarily consistent across time. They suggested that categorical identities of heterosexual, lesbian, gay, and bisexual miss much of the variation in attraction that exists, as many people experience some degree of physical or emotional attraction at least occasionally to people of both sexes, and the heterosexual, lesbian, gay, and bisexual categories fail to capture the wide range of diversity that exists in individual experience, as people tend to collapse experience and identify with their primary attractions. So, for example, three people may identify as heterosexual, but for one, that is an exclusive orientation; for another, it predominantly but not completely characterizes his or her attraction and arousal; and for another, it characterizes his or her arousal only but not his or her emotional attractions. The social constructionism perspective on sexual orientation suggests that our cultural and individual identity labels affect our ways of being and of perceiving the world and influence the types of experiences we are open to having (i.e., our

attractions can influence the labels we choose to use, but the labels we choose to use can also influence our attractions).

Yet another way researchers measure sexual orientation is to look objectively at physiological arousal rather than to use self-report. This typically involves measuring blood flow to the genitalia using the penile or vaginal/clitoral plethysmograph described in detail in (Reference ty_1.0-ch02 not found in Book). Alternative measures include pupil dilation and amount of time spent looking at stimuli (both of which obviously require that stimuli be at least partially visual in nature). Advocates of biological measures of arousal focus on the unreliability of self-report, both in terms of deliberate misrepresentation and in terms of unwittingly misinterpreting rating scales. Physiological measures give concrete data not influenced by subjectivity (and, empirically speaking, correlate highly with self-reports of categorical orientation identity). Critics of these studies note that physiological arousal ignores the romantic and emotional components of attraction. In addition, physiological arousal studies usually use an experimental paradigm with auditory or visual stimuli, and not all people experience sexual response to such stimuli in the same way they experience sexual attraction to an actual person. Brain imaging has also been utilized to assess orientation, but this requires much more expensive equipment, and so sample sizes tend to be small and have limited ability to detect weaker effects. Additionally, the relationship of brain activation to sexual arousal is highly complex and not entirely understood (LeVay, 2010), ^[11] with no single area or region of the brain signaling arousal, attraction, or orientation. Rather, many different patterns of activation in the brain are found to vary with biological sex and self-reported sexual orientation. Such activation in the brain includes the auditory system reacting to the biological sex of a speaker, the visual system reacting to faces, and brain centers associated with genital arousal reacting when viewing erotic material (LeVay, 2010). ^[12] Studies of brain imaging are more useful for understanding the biological basis of orientation by looking at group differences between the sexes or between different self-reported categories of sexual orientation (discussed subsequently) than for “determining” a particular individual’s orientation.

How Common Are Various Sexual Orientations?

A quick perusal of the Internet will show figures for heterosexuality ranging from 80% of people to 99.5% of people! This is a remarkably imprecise range for something that is of interest to many scientists and has been studied for more than 100 years. As explored earlier, in large part this is because of the multiple definitions of sexual orientation. So to expand more precisely on the “it depends,” we arrive at different statistics according to

different measures of orientation. We do this in a text format rather than a table so that we can discuss what the different results mean and attempt to place them in a cross-cultural and cross-historical context.

On the basis of self-reported identity categories, a national probability sample of the United States (Herbenick et al., 2010) ^[13] showed that for males, 96.1% of adolescents and 92.2% of adults identified as heterosexual, and for females, 90.5% of adolescents and 93.1% of adults identified as heterosexual. The percentage of bisexual identification was 1.5% of adolescent males and 2.6% of adult males and was 8.4% of adolescent females and 3.6% of adult females. The percentage of gay/lesbian identification was 1.8% of adolescent males and 4.2% of adult males and was 0.2% of adolescent females and 0.9% of adult females. (“Other” was also a possible answer, which is why the numbers don’t add up to 100% perfectly). These differences would suggest a different trajectory for males and females for the development of sexual orientation identity and/or for the experience of sexual attraction itself, with more males experiencing or acknowledging same-sex attraction as they age, and females being more flexible in adolescence. Of course, cultural factors may also affect such self-identification. While the percentage of heterosexuality was largely similar in older adult males and females in this study (respectively 92% and 93%, rounding), a substantially different pattern exists between the sexes for the 7% to 8% who identify as other than heterosexual, with nonheterosexual males being more likely to identify as gay than bisexual but nonheterosexual females being more likely to identify as bisexual than lesbian. These patterns are largely consistent with other recent surveys from the United States, which used smaller sample sizes as well as surveys on behavior from other countries such as Norway.

In contemporary society, it may also be that same-sex behavior or exploration can occur in females without affecting whether a person is perceived (either by self or friends) as lesbian or bisexual, whereas same-sex behavior in males is more likely to receive the label of gay or bisexual. One such study in Norway that reached this conclusion looked specifically at young males and females between the ages of 17 and 18 and found that same-sex genital experience occurred in 4.6% of females and 2.7% of males and that all same-sex experiences, including kissing, occurred in 27.4% of females and 6.5% of males (Hegna & Larsen, 2007). ^[14] These authors concluded that same-sex experiences may be part of heterosexual exploration for females (hence higher rates of less intense behavior such as kissing than of more intense behavior such as genital contact) but are more likely only to occur as part of a strong same-sex attraction in males (hence closer rates between kissing and genital contact, although relatively low in both cases). Other researchers have found that same-sex sexual behavior among heterosexual males is more common in cultures with less stigma associated with male homosexuality,

where a higher percentage of self-identification as homosexual or bisexual occurs for both sexes, such as Thailand, with 9% of adolescent males and 11.2% of adolescent females identifying as homosexual or bisexual (Van Griensven, et al., 2004).^[15] These figures are substantially higher than the figures shown in data from Thailand a decade earlier (Sittitrai, Phanuphak, Barry, & Brown, 1994),^[16] suggesting that fairly rapid change can occur in terms of population behaviors and identification.

Anderson, Adams, and Rivers (2012)^[17] found that same-sex kissing has become normative for heterosexually identified college-aged athletes in the United Kingdom, with one sample showing 90% of heterosexually identified students as having kissed other males (higher for male athletes—95%—than for nonathletes). They noted that heterosexually identified males expressing affection in same-sex friendships through kissing was quite rare in earlier decades and is still rare in older heterosexual males in the United Kingdom, again reflecting the role of culture in shaping normative displays of nonsexual affection as well as sexual affection and behavior. In terms of the frequency of sexual orientation defined strictly by sexual behavior, in the United States, in a national probability sample, Herbenick et al. (2010)^[18] reported that the age cohort with the highest lifetime same-sex experience was in males between the ages of 50 and 59, with 14.9% having had some male-male sexual contact experience, whereas in females, the age cohort with the highest lifetime same-sex experience consisted of 20- to 24-year-olds, with 16.8% of females having had female-female sexual experience. The authors only reported data on a limited subset of more intense sexual behaviors for same-sex experience (oral sex for females and oral sex or anal sex for males but not same-sex partnered masturbation or kissing) and did not report cumulative frequencies for people making multiple responses, so it is possible that the percentage of people with same-sex experiences of other types was higher, as other studies have found higher rates of same-sex behavior if kissing and masturbation are included. Nevertheless, this is consistent with other research that shows that the percentage of people who are exclusively heterosexual in lifetime sexual behavior (about 85%) is quite a bit lower than the percentage who identify as heterosexual (between approximately 90% and 96%). The percentage who identify as heterosexual is closer to the percentage of those who are predominantly but not exclusively heterosexual in most of their attractions.

The data on recent and lifetime behavior and self-identity also suggest that for some people, sexual experience occasionally departs from their predominant sexual orientation. This is also observed for people who are predominantly gay or lesbian in identity, who may experience sexual behavior with the other sex either as part of following a normative script or as exploring their sexuality, or who may at times experience attraction to

someone of the other sex even though they are predominantly attracted to the same sex. Likewise, in many countries, people who are more educated, are younger, and live in cities are more likely to report some same-sex behaviors, even though the percentage of people who are predominantly heterosexual is likely the same around the world. All types of sexual behavior are affected by culture, with more variation experienced and/or reported among those who have higher income levels; for example, low rates of masturbation are reported in rural China, and higher rates are reported in educated, urban areas (Das, Parish, & Laumann, 2009). ^[19] Lisa Diamond (2009) ^[20] has found considerable variation in sexual identity and behavior for younger females in the United States, with some women experiencing a change in their self-identification between orientation categories as they find themselves attracted to individuals of both sexes and other women experiencing strong attractions to people of a sex different from that of their past attractions.

Among males, bisexual identity appears to be accompanied by a distinct arousal pattern to both sexes that is different from that shown by males who identify as gay or heterosexual (Rosenthal, Sylva, Safron, & Bailey, 2011). ^[21] However, this finding only emerges if one maintains stringent criteria for bisexual identification, limiting it to those males who have reported significant relationships with people of both sexes rather than just males who use the term *bisexual*. Earlier research showing that bisexually identified males respond to either males or females but not both used less-stringent self-identification criteria and may have included people who had bisexual behavioral experience but not bisexual romantic attractions.

We next consider *situational homosexuality*. This has been documented in prison populations, where partners of the preferred sex are not available. It also has been documented in cultures such as India among adolescents, where females are discouraged from being sexually active until after marriage, and male-male sexual contact is more likely to occur in heterosexually oriented males as a substitute for unavailable heterosexual contact (Bhugra, Mehra, Silva, & Bhintade, 2007). ^[22] This male-male sex in heterosexual adolescent males was also common in earlier decades in the United States, before contraceptives were widely available, when heterosexual adolescent males and females were less likely to have sexual relationships (Jannini, Blanchard, Camperio-Ciani, & Bancroft, 2010). ^[23] Another possibility these authors offer for higher rates of male same-sex behavior in the past than in present in the United States is that in the past, few gay males openly identified as such, and same-sex attraction was little discussed, so males may have been more willing to experiment, as this would not carry a label; in more recent times, although discrimination against gay males is much less common than in the past, same-sex behavior is more likely to be labeled as being gay, and so primarily straight males may be less willing

to experiment with other males (Jannini, Blanchard, Camperio-Ciani, & Bancroft, 2010).^[24] Regardless, the changes demonstrate the complex interrelationships between culture, historical era, identity, and behavior as well as show the somewhat-flexible nature of sexual behavior and identity for people of both sexes.

We have also not considered the complexity of individual sexuality, such as individuals who regularly have sexual experiences with people of a sex/gender other than that of their primary sexual orientation but do not consider this as altering their orientation—or people whose primary orientation identity changes significantly across the lifespan. To pick a single example to illustrate the complexity of individual sexuality, consider Pat Califia (Califia, 1999).^[25] In 1999, Pat identified as a lesbian, was primarily attracted to women in emotionally and sexually intimate relationships, and reported regularly enjoying “topping” a small number of gay-identified males in BDSM (i.e., bondage, domination/submission, sadism/masochism; see [Chapter 11, Section 1 "Sexual Diversity: Kinks and Fetishes"](#)) play involving anal penetration with a strap-on dildo (and her male partners continued to identify as gay). Later, Pat identified as Patrick, a bisexual trans(gender) man. Bisexuality as an identity means different things to different individuals. For some, it describes individuals who have emotional and erotic (physical) attractions to people of both sexes, and for others, it describes having one of these attractions for one sex and the other or both for the other sex (such as someone who is emotionally attracted to people of the same sex but occasionally has sex with people of the other sex, or vice versa). Some individuals exclusively attracted to the same sex use the term *bisexual* based on their history (e.g., younger experimentation) or as a “stage” in disclosing what ultimately is revealed as an exclusive same-sex attraction. To summarize, sexual behavior, whether with someone of the same sex or other sex, may occur as part of friendship, physical attraction, emotional attraction, sexual exploration, general arousal, specific sexual interest, or response to situational constraints. Whether orientation includes some or all of these components depends on the scale of measurement and definition of orientation being used.

Sources of Sexual Orientation and Its Relationship to Gender and Biological Sex

The research on the causes of sexual orientation is so complex and involves so many different aspects of biology and culture that we address each major line of research in a subsection before pulling them together into the “big picture.” These subsections include comparison with other animals, brain differences, differences that relate to fetal androgen exposure, the relationship between gendered behavior and orientation, genetic evidence, and cultural and environmental influences. We include what causes attraction to the other sex as well as to the same sex.

Evolution and Sexual Behavior in Other Animals

The origins of sexual orientation of course include studying heterosexuality and its development, and in evolutionary terms, the selection of other-sex attraction is easy to explain, as it results in reproduction and thus would be highly selected for. The exceptions (same-sex behavior) can help shed light on other-sex attraction. Biologists in the past often overlooked same-sex sexual behavior and same-sex social pairbonding (Bagemihl, 1999; Poiani & Dixon, 2010), ^[26] ^[27] either not reporting it when observing it or labeling it in misleading ways. For example, in bonobo chimpanzees, researchers continue to refer to male-male genital rubbing as *penis fencing*, which suggests an aggressive/dominance behavior, even though the behavior appears similar to female bonobo *GG rubbing* (genital-genital rubbing). In both sexes, this appears to happen for largely pleasurable reasons or reasons relating to forming social bonds (when male chimpanzees are aggressive, they hit, bite, and scratch one another; male genital rubbing is not seen between individuals engaging in these behaviors). Same-sex mating behavior and social pair-bonding are observed in many species of birds, mammals, and reptiles (Poiani & Dixon, 2010). ^[28] Among highly social mammals such as dolphins and the bonobo chimpanzee, the behavior occurs in the context of social interaction and play and at a higher frequency than observed in most human populations. A wide variety of long-term couplings have been observed, including female-female and male-male couplings, such as in penguins, with nesting behaviors typical of male-female pairings raising offspring (Driscoll, 2009). ^[29] Theories for the evolutionary basis of same-sex behavior and pair-bonding vary by species. In some species, same-sex behavior appears to be related to a general increase in sexual behavior (including other-sex behavior) and may be selected for with genes that cause increased total fecundity (more offspring total, because the individual has more sex overall). In other species, it appears primarily as a function of social dominance; in others, it appears as a function of social bonding or diffusion of aggression; and in others still, same-sex behavior has no apparent evolutionary benefit and possibly exists as a result of random variation or anomalous fetal development. This may include potential environmental endocrine disruptors, some of which are natural and some of which are a by-product of industrial pollution (Poiani & Dixon, 2010). ^[30] They noted that exclusive homosexuality is observed in nonhuman species and that same-sex behavior—particularly bisexual behavior—is quite common among highly social species, suggesting a possible adaptive benefit in terms of social relations and/or facilitating the survival of offspring of related individuals.

Sexual Orientation and the (Human) Brain

Simon LeVay made headlines worldwide with a 1991 study reporting neurological differences in the brains of gay men (LeVay, 1991).^[31] Many popular articles reported the study as proving a genetic basis for same-sex attraction or supporting the idea that people are born gay. As we covered in the chapter on research methods, media reports often greatly sensationalize and oversimplify medical and sexology research, and this case was no different (as LeVay himself has repeatedly noted). What LeVay had found was that, based on a postmortem analysis of the INAH-3 area of the hypothalamus from 6 heterosexual women, 19 gay-identified men, and 16 presumed-heterosexual male controls, the size of the INAH-3 region in gay males was similar to its size in heterosexual females and smaller for both groups than its size in heterosexual males. The study has been critiqued because of the small sample sizes, the possibility that the gay males (who had died of acquired immune deficiency syndrome [AIDS]) were not representative of gay males without HIV infection, the questions regarding how to measure the INAH-3 region, and the possibility that behavior changed brain structure (e.g., as opposed to brain structure changing behavior, unrelated research has shown that regions of the hippocampus, a brain region associated with memory, grew in size when people spent a lot of time memorizing complex tasks; Maguire et al., 2000).^[32] In support of the study, although there was a wide range of INAH-3 sizes in all groups, the average difference in volume between groups was large: two to three times (200% to 300%), which is a difference that is exceptionally unlikely by chance. In humans, HIV status affects 8% of the volume of INAH-1 but not of INAH-3 (Byne et al., 2001),^[33] so this would not have accounted for the effects.

Subsequently, many of the critiques of the 1991 study have been addressed by other researchers, mostly replicating the original results or finding a similar trend and underscoring the connections between neural anatomy and both sexual orientation and sexual differentiation. For example, in rats, the effects of sex differentiation in the brain and fetal androgen exposure are more clear; the female/male size difference in the preoptic area is sufficiently large, to the point that this part of the rat brain is called the sexually dimorphic nucleus (SDN); and controlled experimental manipulation of androgen exposure during fetal development strongly relates to both adult rat sexual partner preference (female/male) and the extent of the size difference of the SDN (LeVay, 2010).^[34] More recent studies continue to show a relationship between biological (genetic) sex, exposure to androgen levels during development, and the organization of brain structures, with significant correlations between biological sex, gender-typical behavior, and sexual orientation. For example, Savic, Berglund, and Lindström (2005)^[35] found distinct brain activation patterns, with gay males and heterosexual

females responding similarly to male pheromones and differently from the brain responses of heterosexual males.

Sexual Orientation and Gendered Behavior

Although the research is somewhat mixed on how strongly markers of fetal androgen exposure predict gendered behavior, the connection between actual observed gender-typical behavior in childhood and adult sexual orientation is stronger and has been found more consistently. We want to be careful not to reify the idea that gender-conforming individuals are heterosexual (or, the converse, that gender-nonconforming individuals are gay or lesbian). The reification of a concept means to take something abstract and make it concrete or real. When we examine the empirical basis of a stereotype about a group, there is a danger in doing this. Sometimes people reading quickly misapply research from groups to individuals: even where strong correlations exist at the group level, there are many individual exceptions that are just as interesting from a scientific point of view.

The association between gender role nonconformity and nonheterosexual orientation was observed in the 1800s by Magnus Hirschfeld, who suggested that a gender inversion in some individuals (but not all) was accompanied by same-sex attraction. This “inversion” was observable in outward expression of masculinity/femininity, including appearance and clothing interests, and Hirschfeld suggested that it was also an “inner” inversion. For a time in the 19th and 20th centuries, the most visible nonheterosexual individuals were indeed those who were highly gender nonconforming, and although many individuals who were more typically gender role conforming also had same-sex relationships, they were less likely to identify as being attracted to the same sex and were also unlikely to be labeled as such by others (Katz, 1992; Katz, 2001; Gross & Woods, 1999). ^[36] ^[37] ^[38]

The correlation between gender role nonconformity in childhood and same-sex orientation in adulthood has been documented in several studies. Green, Roberts, Williams, Goodman, and Mixon (1987) ^[39] studied 79 males between the ages of 13 and 23 who were nonconforming in childhood and found that approximately 75% of highly gender role–atypical (feminine) boys developed a gay or bisexual orientation, in contrast to a smaller group of males who were gender role conforming in childhood, all of whom grew up as heterosexual. Their 1987 data was based on children originally assessed as early as the 1960s and involved highly gender-nonconforming boys. Given the overall prevalence of same-sex orientation, the control group of conforming boys was too small to expect more than, at most, one nonheterosexual male; so while the study shows a higher prevalence of same-sex orientation in highly gender role–nonconforming boys, it does not necessarily indicate a lower prevalence

in conforming boys. Drummond, Peterson-Badali, Bradley, and Zucker (2008) ^[40] found that among girls with a diagnosis of a gender dysphoria, most did not have GD in adulthood but did have substantially higher rates of bisexual and same-sex attraction or fantasy than control populations (about one-third of the sample of girls with GD in childhood).

Studies based on adults' memories of their childhood as well as their expressions of masculinity and femininity in adulthood also find a correlation between gender role nonconformity and same-sex orientation. Rieger used home videos of adult participants from when they were children and also found a large difference in childhood gender role conformity between adults attracted to the same sex and those attracted to the other sex (Rieger, Linsenmeier, Gygax, Garcia, & Bailey, 2010). ^[41] It is also possible for people of all sexual orientations to correctly identify, at a rate better than merely chance, the sexual orientation of people from viewing brief video clips of them, which serves as experimental support for what is known colloquially as gaydar (Rieger, Linsenmeier, Gygax, Garcia, & Bailey, 2010). ^[42] There are cross-cultural dimensions to gaydar and also culture-specific cues to sexual orientation (Valentova, Rieger, Havlicek, Linsenmeier, & Bailey, 2011). ^[43]

Relationships also exist between adult sex differences and personality, with gay men being shifted more in a female-typical direction, lesbians being shifted more in a male-typical direction, and bisexual people scoring in between, particularly for occupational choices and self-descriptions of masculinity/femininity (Lippa, 2008). ^[44] Furthermore, sex-typed behavior, including sports preferences, relate to sexual orientation (at least in males) across cultures as diverse as Brazil, Turkey, and Thailand (Cardoso, 2007). ^[45]

Much of this research assumes a single dimension to masculinity/femininity, where an individual is necessarily low in one if high in the other and where, by virtue of the experimental design, people cannot be high in both, even though research shows that some individuals may be high in both stereotypically masculine and feminine traits. These folks are exhibiting androgyny (Bem, 1986). ^[46] In addition, there may be multidimensional aspects to children's responses to culturally varying pressures to gender role conformity (Hegarty, 2009), ^[47] which the aforementioned studies ignore, creating a false impression of the strength of innate biological difference in gendered behavior relating to sexual orientation. Somewhat gender role–nonconforming children may more readily conform strictly if a culture requires it, increasing the observed gap between conforming and nonconforming children.

A misunderstanding of the relationship between gendered behavior in childhood and sexual orientation in adulthood is that it can be altered in childhood with specific behavior interventions or that it is due to the

masculine or feminine role models that a child has or the behavior a child engages in. We address this specifically because there are books, such as Nicolosi and Nicolosi's (2002),^[48] that claim that a parent can "prevent" homosexuality in a child by targeting nonconforming behaviors and eliminating them. These books draw a psychological-sounding argument, employing early psychodynamic theories of Freud, who suggested that sexual orientation was formed in mid-childhood by a child's identification with the parent who was the same sex (thus developing a typical other-sex attraction) as a way to resolve unconscious anxiety from the Oedipal conflict. Freud's theory never received empirical support, and indeed, Freud himself did not regard same-sex orientation as pathological or changeable, but 21st-century manuals on preventing homosexuality urge fathers to play football with gender-nonconforming boys and mothers to bake cakes with gender-nonconforming girls. There is no empirical research to suggest that this works, and as Yarhouse (2003)^[49] noted, even the authors of the book do not present evidence of effectiveness—only "snapshots" of how to utilize their "treatment."

In the past, it was suggested that child sexual abuse or sexual experiences may affect sexual orientation, but studies suggest that this is not the case. For example, in same-sex boarding schools, male-male sexual behavior used to be quite common (often coerced), but rates of male same-sex attraction in adulthood were no different in those who did not go to boarding schools than in those who did (Wellings, 1994).^[50] Although no broad trends on sexual orientation can be found, experiences in childhood and adolescence may have an influence on the development of specific sexual interests that people form—particularly males—which is discussed in the context of kinks and fetishes in.

Genes and Other Biological Factors

Studies are inconsistent on the role that genes and other biological factors serve in sexual orientation, with more evidence of a genetic component for gay males than for lesbians and multiple "lines" of evidence of different biological factors playing some role (for a comprehensive and compact summary of dozens of studies, see Jannini, Blanchard, Camperio-Ciani, & Bancroft, 2010).^[51] These include genes and the higher-than-expected presence of an allele known as Xq28 in gay brothers as compared to nongay brothers. The role for genes alone is, however, "capped" by recent research that has shown a 52% concordance rate for monozygotic twins for male homosexuality, meaning that when one has a gay identical twin brother, both twins are gay about half the time (this is far higher than the 2% to 5% population rate and higher than the 22% of dizygotic

twins and 11% of adoptive brothers, which rules out environmental factors as exclusively causing same-sex orientation—but also ruling out genetics as entirely causing same-sex orientation).

Other biological factors include a possible immunological role, which has been introduced to explain a strong birth-order effect that exists in males but not in females (Bogaert & Skorska, 2011).^[52] Males born to mothers who have had previous male children are more likely to be gay, and the odds increase with an increase in the number of older male siblings, increasing approximately 33% with each additional older male brother (Cantor, Blanchard, Paterson, & Bogaert, 2002).^[53] The presumed mechanism is that the mother's body supplies more antibodies in response to a male fetus than to a female fetus, and a male fetus being exposed to higher levels of these antibodies results in changes to the way that the brain sexually differentiates during fetal development. Thus there is a stronger immune response to the third male child than to the second, stronger to the fourth than to the third, and so on. This may account for the orientation of 1 in 7 gay males (Cantor et al., 2002).^[54] This can be partly but not entirely explained by the total number of children, representing a fecundity effect (the more children a woman has, the more likely it is that some of them will be gay; VanderLaan & Vasey, 2011).^[55] Some studies have shown that boys who experience sexual attraction earlier are more likely to be attracted to the same sex (Jannini et al., 2010),^[56] which may be related to the biology of sexual orientation or show male sexual attraction as being somewhat shaped by environmental input in adolescence, as children often socialize with same-sex peers in childhood, meaning that those experiencing attraction earlier would be more likely to experience that toward same-sex peers (Jannini et al., 2010).^[57]

Cultural and Nonbiological Environmental Influences: Putting It All Together

Bancroft (in Jannini, Blanchard, Camperio-Ciana, & Bancroft, 2010)^[58] noted that the prevalence of same-sex behavior in male adolescents ranges from 100% in the Sambia of Papua New Guinea, who believe that ingesting semen is required to grow into men, to 37% in Kinsey's mid-20th-century American samples, where adolescent males had few opportunities for other-sex contacts, to much lower percentages in modern U.S. and German samples, where adolescents have multiple opportunities for other-sex sexual exploration. He suggested that there are three separate aspects to sexual development: first, gender identity (the sense of being male or female); second, the capacity for forming relationships with others; and third, the direction of sexual responsiveness. He noted that gender identity and the direction of sexual responsiveness have been well studied. Biology plays a primary role in gender identity, and it appears to play a primary role in the direction of sexual attraction in males—but less so in females. Hence most males are attracted to females as adults,

regardless of their early experiences, even among the Sambia, but females in many cultures experience a wider range of attractions. Bancroft also noted that the capacity for forming relations with others (technically dyadic relationships) has been little studied and is likely strongly influenced by culture, as shown in the high variability of friendships and sexual contact for both sexes between various cultures. He also suggested that these three elements interact with one another in the development of sexuality and the formation of sexual identity, with culture playing a significant role in the emergence of particular identities. Thus someone who is attracted to the same sex may develop an identity as a gay man in Germany, a Fa'afine in Samoa, or a closeted individual who identifies as straight yet has sex with men on the "down low" in North America (these are our examples, applying Bancroft's ideas). We also note that in cultures where a gay or lesbian identity is primarily associated with gender role nonconformity, those who are attracted to the same sex but who are also gender typical may not identify as gay or lesbian, even though their attraction and arousal patterns (sexual orientation) may be entirely same-sex focused.

To return to our earlier discussion, researchers such as Eric Anderson, Ritch Savin-Williams, and Lisa Diamond have all separately noted that for younger adults, many of these orientation/identity categories have less meaning in the 2010s and less clearly predict behavior and physically and emotionally intimate relationships. This further supports the idea that, for both sexes, identity is complex and multidimensional, originating in biology yet embedded in a cultural context.

To summarize, if one reads extensively in gender studies and biology, one will find some researchers who claim evidence that sexual orientation has a principally biological basis and others who claim evidence that orientation is largely a socially constructed identity construct—sometimes even in the same journal (e.g., a 2010 special issue of the *Journal of Sexual Medicine* that addressed male homosexuality). In reviewing the research presented earlier, our opinion is consistent with that expressed by Jannini et al. (2010) ^[59]—that both positions are reasonable and have some support from a review of research. That is to say, there is evidence of both biological and cultural contributions to sexual orientation, with strong and multiple lines of evidence that support multiple biological roots as being connected to sexual orientation, particularly in males and if one measures arousal. There are also significant amounts of data that show an influence of social environment and culture on how orientation is expressed, particularly in terms of how identity is constructed, as well as the ease with which people express natural variations in both attractions and gendered behavior.

Is There an Orientation to Age? To Automobiles?

We consider this question with some care. Most sexologists only regard sexual orientation with respect to the sex or sexes and gender identity or identities of people an individual finds attractive and with whom they want to have sexual relations. Some people have narrowly focused sexual interests or activities that are known as kinks and fetishes, but they want to engage in those with males, with females, or with both, and so this focus of sexual interest exists separately from sexual orientation. However, a minority of individuals with kinks report that for them, a specific sexual activity is as meaningful or more meaningful than whom they are attracted to: they associate their “orientation” with a particular kink. There is no research to suggest that this is equivalent to sexual orientation, but there is little understanding of kinks and fetishes, so perhaps this is possible. An even smaller percentage of people find themselves sexually attracted to inanimate objects, such as automobiles or bicycles, or to certain species of animals and report no sexual arousal toward people. For example, in the United Kingdom, a man claimed to be erotically attracted only to automobiles and to have had sex with more than 1,000 cars. He also said that he had experienced deep romantic attraction to several vehicles—but never to people (The Telegraph, 2008).[] Functionally, for these individuals, their attraction is as if it were an orientation, though in the present nomenclature, it is not considered as such; rather, it is considered a paraphilia. We explore this more in Chapter 11 "Variations in Sexual Behavior: Kinks, Fetishes, and Paraphilias". While most adults experience a range of attractions to people of varying ages across the lifespan, there are also people who, from an early age, are only sexually attracted to the very elderly, which is known as gerontophilia. There is little empirical research on this.

An area of research on age and orientation that has attracted significant research is attraction to children, which is known as pedophilia. Some adults who are sexually attracted to children report that their interest in children is experienced as an orientation, and the empirical research suggests that this is indeed the case, as they appear to experience little sexual arousal to adults. Blanchard et al. (2009)[] studied males attracted to adults, those attracted to early adolescents, and those attracted to children. All three groups were males referred to a clinic for treatment for sexual issues, and the latter two groups consisted of males convicted of criminal sexual contact. Some of the adult-attracted males in the first group had committed sex-related crimes, while some had not. As expected, the males showed the strongest genital arousal to the age and sex that they indicated they were attracted to. People with pedophilia (attraction to children), however, showed less sex-differentiated difference (more arousal to both boys and girls), consistent with the greater similarity in physical appearance between the sexes in young children. A more recent study by Blanchard et al. (2012)[] provides data

that specifically suggests that there is a single dimension for sexual orientation in males, which includes age “fused” with target sex; at either end of the orientation scale are adults (with attraction possible to adults of either sex), but for those attracted to young children, arousal is significant regardless of the child’s sex (those attracted to young adolescents are at an intermediate point). Functionally, this means that people were attracted to particular age categories and that the sex and age of the person were fused as an inseparable gestalt. This would also indicate that the terms heterosexual and homosexual don’t really apply for pedophiles who offend against girls and/or boys, as their orientation is specifically to young children and not to adults. It would be more accurate to use the terms same-sex pedophilia or other-sex pedophilia. We consider sexual abuse of children in Chapter 12 “Sexual Aggression and Coercion”, as not all adults who have sexual contact with children have pedophilia.

Is There an Orientation to Age? To Automobiles?

How Fluid Is Sexual Orientation?

Here we consider evidence that sexual orientation may change by itself as well as evidence for whether or not it can be changed deliberately. These are two different questions: the first refers to whether change naturally occurs across the lifespan, and the second refers to whether directed efforts for a change in a particular direction are effective. Briefly, the evidence suggests that the answer to the first is “yes” (for some females) and that the answer to the second is “no.”

For some females, sexual orientation appears to be fluid and affected by present relationships. Physiological responses suggest that most females experience genital arousal to a wide variety of sexually explicit stimuli, even though they do not report conscious arousal, and that female sexuality may have a nonspecific component for many women (particularly heterosexual women) that results in same-sex attractions developing in the context of emotionally intimate friendships (Chivers, Seto, & Blanchard, 2007).^[60] Sexual orientation identity also appears to be fluid for a significant subset of females across time, with many women changing labels in a variety of patterns, including from straight to bisexual or lesbian, bisexual to straight or lesbian, and lesbian to bisexual or straight (Diamond, 2009).^[61] The experience of change may be least for those who experience a particularly strong orientation from an early age, such as those who have always identified as lesbians, than for other women. Diamond also suggested that sexual fluidity is different from bisexuality and represents not

confusion or the emergence of identity over time but an *actual change in patterns of desire and attraction, which occurs in only some people and partly as a result of experiences.*

Although Diamond's work only involved female participants, most of which identified as nonheterosexual, sexual fluidity was notable in studying women over a span of 10 years—much longer than most studies, which take only a snapshot of present identity at one time. More than two-thirds of Diamond's nonheterosexual participants changed self-identity labels at least once, and at least half of her lesbian-identified participants had some form of sexual contact with males, even though they were less likely to change self-identity. Other research that we already discussed suggests that bisexual behavior is more common in females than in males. Interestingly, exclusive same-sex attraction is more common in males than in females. Much research has shown specificity of arousal in males, so while orientation fluidity may occur in some males, it appears more rarely. As we detail in [Chapter 11 "Variations in Sexual Behavior: Kinks, Fetishes, and Paraphilias"](#), unchanging patterns of sexual arousal to very narrowly defined stimuli are more common in males than in females and may reflect a narrow window of plasticity for male sexuality during adolescence, where environmental input shapes arousal patterns that later become fixed across the male lifespan.

Although there is little research on changing future orientation in children, there are multiple studies of attempts to change sexual orientation in adults, using everything from aversive therapy (ranging from electroconvulsive shock to unpleasant odors) to systematic cognitive behavior therapy that models new ways of interacting with same-sex friends and attempts to shift sexual arousal to people of the other sex. These experiments always involve attempts to change orientation from homosexual to heterosexual, usually based on requests from males who are attracted to the same sex and whose religious beliefs indicate that same-sex attraction is sinful. It is often called reparative therapy by those who market such programs (this suggests that something needs repairing, a position with which the American Psychiatric Association and the American Psychological Association disagree). The research is starkly clear that these approaches to modify sexual orientation are ineffective in terms of changing underlying orientation. Some participants report a shift in identification, and some participants have reported an increase in bisexual behavior or heterosexual behavior, but most fail to experience a cessation of same-sex attraction, and many regret entering into such treatment (Jones & Yarhouse, 2011; Spitzer, 2003; Spitzer, 2012). ^[62] ^[63] ^[64] For example, the study that finds the highest percentage of “success” (Jones & Yarhouse, 2011) ^[65] reported a 53% rate of success and actually had 98 participants, out of which only 61 completed the study. Of these 61, the 53% success rate included 30% who

reported chastity (abstaining from sex) and 23% who reported conversion to heterosexual functioning (which is only 14% of the original sample). Focusing on this 14% of the original sample, many reported a decrease in homosexual attraction but only a “smaller, less substantial” increase in heterosexual attraction (Jones & Yarhouse, 2011).^[66] Thus, even among extremely highly motivated participants, and in that small subset that claimed change, none actually “changed” orientation by typical empirical definitions. Rather, a small percentage changed their behavior. Many authors have noted that attempts to change orientation are accompanied by an acceptance of belief systems that cause people considerable guilt, shame, and distress and that gay-affirmative psychotherapy provides an alternative that helps people to find faith-based communities that are accepting of their sexual orientation and to deal with potential rejection by family members (for multiple examples of such commentaries, see Drescher & Zucker, 2006).^[67]

Key Takeaways

KEY TAKEAWAYS

- *Sexual orientation* refers to the biological sex and gender identity (or sexes and identities) that one is typically attracted to. Sexual orientation identity is related to this pattern of attraction but is distinct from it and refers to one’s self-identification.
- Asexuality is defined differently by different people. It typically includes an absence of sexual arousal and is thought of, by some, as an absence of an orientation and, by others, as a distinct orientation identity. Some people who are asexual have an interest in nonsexual intimate emotional relationships, while others do not.
- Many different terms have been identified to describe the spectrum of gender identities and sexual orientations that exist. Common ones in psychology include *heterosexual* (or *straight*), *gay male*, *lesbian*, and *bisexual*.
- Sexual orientation includes multiple dimensions and definitions: self-identification, identification by others, sexual behavior, fantasy, emotional attraction, and sexual arousal. Emotional attraction and sexual arousal appear from research to be the two aspects that differ separately from one another. Identification and behavior are more strongly affected by cultural values and are more different between cultures and historical eras than are the cognitive and physical components of orientation.
- No single widely used scale exists to measure sexual orientation; different scales focus on different aspects of orientation and have differing strengths and weaknesses.
- Many species, particularly social species, show a variety of sexual behavior, including same-sex behavior and nonprocreative sexual activity.
- Sexual orientation has been found to relate to differences in brain structure in mammals (including humans), with broad connections to fetal development, androgen levels, and the sexual differentiation between females and males. Other biological influences include birth order effects and possibly genetics.
- Cultural factors also influence the expression of sexual orientation and identity, and environmental inputs may have some influence on orientation itself, with a different pattern existing for males than for females. Males are more likely to experience lifetime arousal patterns, which become fixed in adolescence, and females are more likely to experience shifts in arousal patterns across the lifespan.

- Some people innately experience changes in orientation across time, which is referred to as fluidity. However, deliberate efforts to change orientation appear at most to modify behavior—not orientation.
- Functionally, age may be as important a characteristic as biological sex and gender in terms of sexual arousal and orientation toward someone, and research suggests that age and gender/sex may be perceived as a single entity in terms of arousal patterns in males. People attracted to adults (of either sex) show much less arousal to children than do people attracted to children, so referring to people with pedophilia who are attracted to children of the same sex or other sex as *gay or straight* is misleading.

3.6 Sexual Minorities, Religion, and Law

LEARNING OBJECTIVES

1. Describe the history of thinking about sexual orientation.
2. Describe religious traditions pertaining to sexual orientation.
3. Trace the history of the role of psychiatry in pathologizing certain sexual orientations.
4. Describe the highlights of the history of antigay laws and modern gay rights movements.
5. Summarize the media portrayals of sexual minorities since the 1990s and the role of homophobia.
6. Describe the ways in which sexual minorities face special issues with family acceptance.

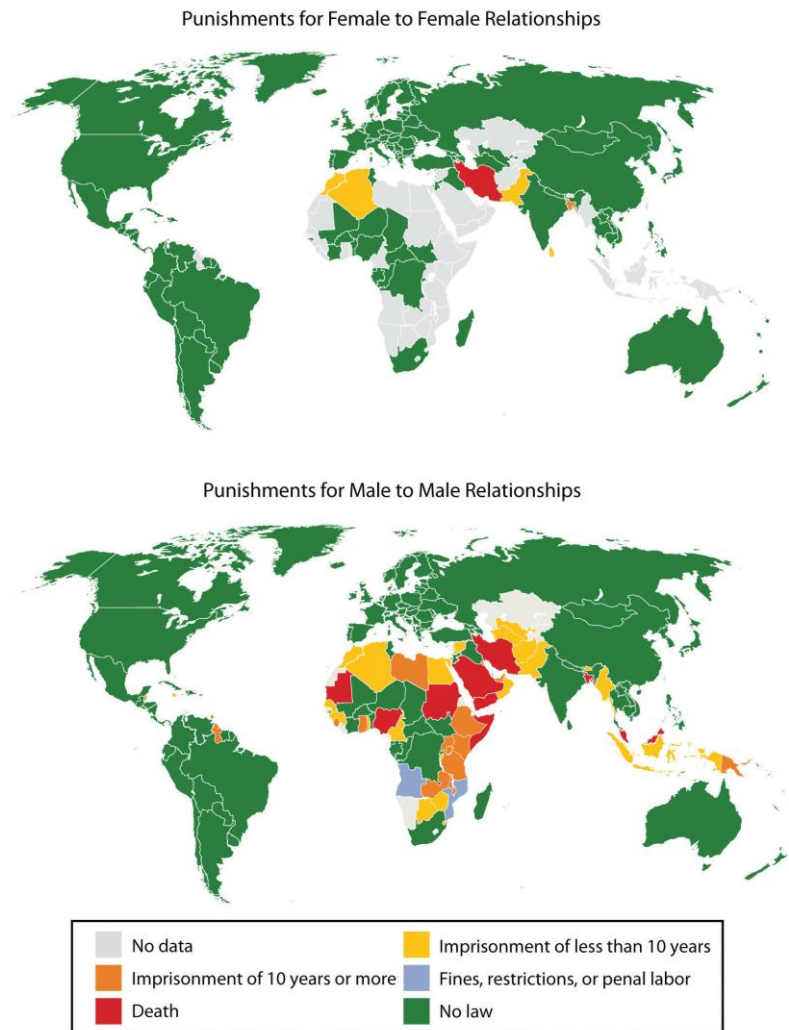
Overview

In the previous section ([Chapter 3, Section 5 "Sexual Orientations "](#)), we reviewed research that shows that most people experience a sexual orientation consisting of a pattern of emotional and physical attraction to the other sex, the same sex, or both sexes and that for both sexes this pattern is largely resistant to deliberate change (although it may undergo natural shifts over time in some people). We also explored how the underlying contributions to the physical and emotional attractions that form orientation have very strong and complicated biological roots that are related, in part, to gender identity and biological sexual differentiation of the brain. Yet we saw how sexual behavior and orientation identity have varied widely across cultures and history. Here we devote a section to considering the political, religious, historical, and cultural dimensions of sexual orientation equality. There are several reasons for doing this. As noted earlier, sexual orientation is one of the most asked-about aspects of sexuality; it is an important part of sexuality for most people; and, as can be seen in [Figure 3.3 "Widely Differing Laws on Sexual Orientation"](#), there is a startlingly wide range of legal responses by different countries in the modern world to sexual orientation, including, in some countries, killing people for expressing same-sex behavior. In some countries, the law does not discriminate against individuals on the basis of orientation, but in many countries, the law preferentially treats those with heterosexual orientations, reserving many financial and other benefits for only those who are heterosexual. In the modern world, one can think of a

few human behaviors that are entirely legal in some countries yet result in a death sentence in others.

Understanding how there can be such wide differences, as well as understanding the controversy about sexual orientation in the United States, requires a thorough examination of history as well as religion.

Figure 3.3 Widely Differing Laws on Sexual Orientation ^[1]



This figure shows a map of world countries and their laws on sexual orientation. Countries in orange have criminalized male-male and/or female-female sexual relationships; countries in red have the death penalty for such relationships; countries in green have almost equal legal treatment for people, regardless of sexual orientation, including, for same-sex couples, treatment that is similar to that of heterosexual married couples in terms of rights and benefits (e.g., marriage or civil unions with similar legal rights); and countries in gray have less-than-equal treatment for nonheterosexual individuals/couples or have no data available.

Historical Views on Sexual Orientation

Ancient Greek mythology suggested that people were formed with four legs, four arms, and a combination of male and female body parts and that the god Zeus, fearing the power of this combination, split all such people apart at birth. Thus we are born with a half a soul and seek union with someone of the other sex (a soul mate). The Greeks also believed that some people's souls start with two male halves or two females halves, allowing for what we would refer to today as gay or lesbian attraction. It is interesting to note that in ancient Greece, it was also quite common for adult males who had a female wife to also have a sexual and emotional relationship with an adolescent male whom they were mentoring. This was also observed among warriors in such city-states as Sparta, where such relationships were common among the soldiers—and even expected (Pickett, 2011).^[2] Many cultures have a “third gender” or “third sex” category for individuals who may be atypical in sexual anatomy, nonconforming in gendered behavior, different in gender identity than in anatomical sex, and/or same-sex attracted (Fausto-Sterling, 2000; Herdt, 1990).^{[3] [4]} Same-sex attractions have also been recognized in classical literature of other high-population civilizations, such as Japan (Pickett, 2009).^[5] As noted earlier in the chapter, low-population tribal societies show greater variation, with some not having concepts that relate to variations in sexual orientation and some, such as the Sambia, having ritualized expectations of same-sex behavior without the concept of same-sex attraction. Among societies that have recognized multiple orientations, views of these have varied widely. In some cultures, heterosexuality and nonheterosexuality were viewed as neutral or equally permissible; in others, nonheterosexuality was expected and encouraged. Pickett (2011)^[6] noted that in ancient Greece, being attracted to young men was a symbol of masculinity and was highly valued—but only if there was a significant age difference between the men and the relationship did not continue as the adolescent or younger man aged. The *hijra* in India are a third-gender category, but historically, people would not necessarily be happy to have a son who became a hijra, as there was some stigma associated with this (Reddy, 2005).^[7] In contrast, in Samoa, no stigma is traditionally associated with a son being a fa'afafine. It is difficult, however, to know how much the stigma observed in India today reflects the influence of European colonial activity of the 1800s and early 1900s.

Religious Traditions on Sexual Orientation

Depending on the tribe or nation, Native American Indian, Canadian First Nations People, and other indigenous peoples around the world often are either value-neutral or value-positive with regard to variations in sexual orientation. It is difficult to reliably estimate what percentage of native peoples have had such categories, as many indigenous populations suffered in the 17th through 20th centuries from colonial rule by

Western countries and from efforts to eradicate indigenous cultures, ranging from forced removal of children to boarding schools thousands of miles from home—and even to outright genocide (Moses, 2008).^[8] Detailed written histories of indigenous cultures, both from within and from outsiders, date to the modern era, after many aspects of these cultures had been changed. Shaw (2005)^[9] suggested that among those tribes with *two-spirit* people, the meaning varied significantly. Some tribes had two-spirit concepts for both sexes, and some had them only for those who were anatomically male. Shaw also noted that people who were not two spirited would engage in same-sex behavior in some North American native traditions and that being two spirited was not necessarily associated with sexual orientation or attraction patterns, which is in contrast to the third-gender category in some other indigenous cultures, where it was associated with same-sex attraction.

Indigenous and folk religions account today for perhaps 400 million people out of a world population of 7 billion—up to 800 million if one includes the traditional Chinese folk religions. By number of believers, the other major world religious traditions are as follows: Christianity (more than 1 billion), Islam (more than 1 billion), Hinduism (around 1 billion), and Buddhism (around 400 million) (Bowker, 2000).^[10] A significant portion of people are nonreligious/secular/agnostic/atheist—at least several hundred million. Of the religions with fewer followers, we only discuss Judaism (14 million) here, as it is considered the first of the three Abrahamic religions, with Christianity and Islam being the other two. The Old Testament is an important influence on these two very widespread religious traditions.

In the Old Testament, there are two apparent references prohibiting male-male relations, both of which are in the book of Leviticus. A common translation is as follows: “Do not lie with a man as one lies with a woman; that is an abomination” (Leviticus 18:22); “if a man lies with a male as those who lie with a woman, both of them have committed an abomination and they shall surely be put to death” (Leviticus 20:13). The Hebrew word that is often translated as *abomination* in these two verses is *toevah*, which, in other parts of Leviticus, is also used to refer to men who shave their beards and to anyone who eats lobster or shellfish, and it also condemns tattoos. The contextual translation is taken by biblical scholars not to mean the modern usage of *abomination* but, rather, to refer to something that is ritually unclean. It appears to relate to one of many ritual ways in which early Jewish peoples separated themselves from behaviors that were common in non-Jewish people of the era in order to assert an identity. In Ancient Rome, male-male sexual behavior was common, as it was in Greece, although there was a negative association with being penetrated by a male, suggesting that perhaps only penetrative male-male sexual behavior was being referenced (Simon & Brooks, 2009).^[11]

The early Christian traditions pertaining to same-sex behavior are not clearly documented but are likely built upon the Old Testament prohibitions. The evidence for this is that shortly after Rome converted to Christianity, a law was passed in 390 that banned male-male love and sexual behavior, making it punishable by death (Simon & Brooks, 2009), ^[12]which is a much stronger prohibition than in ancient Jewish tradition, where it is believed that death was rarely used in such cases. There are, of course, many Old Testament instructions that even the most traditional adherent of the Abrahamic religions no longer follows; for example, the Old Testament also indicates the death penalty for adultery as well the death penalty for a wife who turns out to not be a virgin on her wedding day, and it has numerous references to the treatment of slaves without condemning slavery. Most Jews, Christians, and Muslims (even those who take scripture as literal truth) interpret these passages on slavery and killing women in a manner consistent with modern values, and so it is easy to apply the same logic to homosexuality.

The extent to which male-male sexual behavior was punished in what came to be Catholicism varied depending on the century, area, and the individual's wealth and status. Several popes are believed to have had male lovers. However, for both powerful and nonpowerful individuals, the possibility of punishment undoubtedly created what in modern terms is referred to as the closet (to be closeted), which refers to *the need to conceal same-sex attraction* in order to avoid social stigma, punishment, or other negative consequences. This also decreased the visibility of nonheterosexual individuals, particularly those who were otherwise gender typical. Although the prohibition against same-sex sexuality was primarily regarding male-male sexual relations, it came to include female-female sexual relations by the 19th century, and same-sex relations were prohibited in many Western countries by laws passed in the 1800s. In the German penal code, Paragraph 175 prohibited homosexuality. This law was used by Hitler to imprison and execute gay males in concentration camps in World War II (Simon & Brooks, 2009). ^[13]Today, the Catholic Church continues to teach that same-sex sexual behavior is sinful, as do some but not all types of Christianity that split from Catholicism, such as some branches of Protestantism (Evangelical Christians in particular) and the Church of Jesus Christ of the Latter Day Saints (the Mormon faith). The Anglican Church, a branch of Protestantism, has split on this issue. In Judaism, Orthodox Judaism condemns same-sex sexuality, Conservative Judaism varies (e.g., some rabbis perform same-sex marriages and some don't), and Reform Judaism typically has no concerns (Simon & Brooks, 2009). ^[14]

Many branches of contemporary Islam hold very negative views on homosexuality, reflecting the common roots of the Abrahamic religions. However, this may also reflect European colonization of many Islamic countries in

the 1800s. Many Islamic societies have been tolerant of same-sex attraction. The Ummayyad caliphate in the late 600s and early 700s gave high status to gender-nonconforming males, who were permitted relationships with other males (Haggerty, 2000).^[15] In 2003 in Iran, while homosexuality in males was (and continues to be) punishable by death, transgendered male-to-female individuals had no legal punishments, and indeed sex-reassignment surgery may be paid for by the Iranian government (Gilreath, 2011).^[16] Other Islamic societies have shifted rapidly. In Iraq in the 1990s, gay men were rarely punished, provided they remain closeted, but after the U.S. overthrow of Saddam Hussein in 2003, Iraqi death squads hunted down gay men and killed them (Habib, 2010).^[17] Although not exactly equivalent to a 21st-century gay/lesbian identity, in multiple Islamic societies, same-sex attractions and sexual behavior (both male-male and female-female) were at times quite common—even celebrated—in classic Islamic poetry (Murray & Roscoe, 1997).^[18] Today, in many predominantly Islamic countries where homosexuality is technically prohibited and an individual with an “out” identity risks severe punishment, same-sex relations are not uncommon in secret.

The status of same-sex attractions in historical and contemporary Hinduism is much more accepting than in the Abrahamic traditions. Hinduism is polytheistic, and there are multiple gods that undergo changes of gender, with an acceptance (at least among upper-caste individuals) of multiple aspects to sex and sexuality (Simon & Brooks, 2009).^[19] Many ancient Hindu temples contain portrayals of sexual behavior, and the evidence suggests that sexuality overall was not viewed negatively, with no specific prohibitions against same-sex sexuality. However, British colonial rule in the Victorian era of the 1800s introduced laws criminalizing same-sex behavior, which remained after India became independent in 1947. These laws went unchanged for more than half a century. In Delhi in 2009, consensual sexual acts of adults in private were decriminalized (the original law dated to 1860; Mitta & Singh, 2009).^[20] Buddhism, which originated in India, also has relatively neutral or ambiguous views historically on same-sex sexuality. This has ranged from acceptance in countries such as Thailand to comparative disapproval in Buddhist countries that were more strongly influenced by Confucian Chinese principles, such as Korea. Although traditional Confucian beliefs did not criminalize homosexuality, Confucianism places particular importance on filial piety and males marrying and on having male offspring in order to continue family lines. An exclusively same-sex orientation breaks this tradition. This translates in modern Northeast Asia not only to legal acceptance of homosexuality but also, for many individuals, to family pressure toward heterosexuality.

Of course, the aforementioned characterizations simplify traditions and do not describe all the nuances of a culture or religious tradition. Contemporary atheists, agnostics, and secular humanists generally have quite liberal attitudes toward sex and sexuality, including same-sex relationships. As detailed in [Chapter 3 "Attraction, Arousal, Response, and Sexual Orientation"](#), people's sexual activities are quite similar, regardless of religion or the absence of religion; belief appears to affect only how people feel about their sexuality and their identity, not what that sexuality is or how they act.

Laws, Psychiatry, and Sexual Orientation From the 19th to the 21st Centuries

Our students sometimes ask why gay-rights activists seek “special” rights. Starting in the 1800s, one can find that Western democracies enacted numerous laws that criminalized same-sex behavior and served to discriminate against people with same-sex attractions. Most of the gay-rights movement does not actually seek special rights but is aimed at repealing such laws and seeking equal treatment as well as extending protections against discrimination to ensure that unfair treatment does not occur because of one's sexual orientation. In this section, we trace that history of gay rights movements (there have been several) as well as look at the future of law as it affects sexual orientation in today's world.

As noted earlier, laws criminalizing same-sex behavior date to Christian Roman times. Although same-sex behavior was at times punished in both Christian and Islamic traditions, the 1800s saw an expansion and codification of criminal codes regulating sexual behavior in most European countries and the United States as well as countries occupied by European colonial governments. These specific laws often criminalized all sexual activity other than male-female penile-vaginal intercourse (PVI), classifying everything else *assodomy*. The same sections or paragraphs of law were used to punish adult-child sexual contact, human-animal sexual contact, and male-female sexual activity other than PVI (although such laws were rarely applied to male-female contact).

In the 1800s, Krafft-Ebing suggested in his text *Psychopathia Sexualis* that same-sex attraction, which was already illegal in Germany, was a mental illness rather than a crime (he referred to it as *contrary sexuality* or as being an *urning*). Interestingly, Krafft-Ebing also included in an 1892 version of his text a lengthy letter from an anonymous gay male (to use modern language) of high position, arguing that the principal causes of emotional distress from being gay were social discrimination, the difficulty of finding a partner, and the constant fear of blackmail and punishment if one did have a partner and was discovered (Krafft-Ebing & Chaddock, 1892, pp. 410–412). ^[21] Krafft-Ebing is regarded by some as having created the idea that homosexuality and many other

types of sexual behavior are signs of mental illness; by others, he is regarded as someone who merely described the attitudes of his time as they already existed and who introduced some of the first compelling arguments for separating moral judgments from sexuality (Oosterhuis, 2000).^[22] Prior to Krafft-Ebing's work, pamphlets were published anonymously by gay men such as Karl Heinrich Ulrichs, arguing that same-sex attraction was a natural variation and should not be criminalized (Haeberle, 1998).^[23]

Other contemporaries of Krafft-Ebing, such as Magnus Hirschfield, made strong cases for decriminalizing same-sex attraction. Hirschfield, himself gay and one of the earliest out physicians, founded the first gay rights association of modern times in Germany (Haeberle, 1998).^[24] Karl-Maria Kertbeny invented the terms *homosexual* and, later, *heterosexual*, thus creating categories for discussing sexuality. Haeberle (1998)^[25] noted that this moved the focus from behavior (referenced in law) to an inner characteristic, creating the modern idea of sexual orientation as an identity reflecting an inner reality, for both heterosexuals and those with same-sex attractions. Freud, perhaps the most influential psychiatrist in the first decades of the 20th century, disagreed with Krafft-Ebing's pathologization of same-sex attraction, suggesting that it was neither an illness nor unnatural, but he also rejected a biological explanation, suggesting that sexual orientation resulted from psychosocial development in early childhood (Drescher & Merlino, 2007).^[26] This was consistent with Freud's positions on early childhood shaping the unconscious mind (although Freud's views have not been supported by research).

The 19th-century justifications in British and American law for sexual behavior other than heterosexuality being criminal fell into three broad areas that shifted in emphasis depending on the author and decade and, at times, contradicted each other. Some argued that such behavior was unnatural (never seen in animals); others argued that it was natural (seen in animals) but that humans should control our base impulses. Still others argued that it was a sign of pathology—a type of mental or physical illness to be pitied and treated (Eskridge, 2002).^[27] Similar arguments were made against masturbation. The increasing size of cities in industrializing Europe and the United States enabled people with strong same-sex attractions to find one another—particularly males who were highly gender nonconforming. By the mid-1800s, there were neighborhoods in most major cities that had reputations as being places where men with same-sex attractions could seek sexual partners, and there were places where such men could socialize (often bars welcoming such customers). Same-sex female partnerships were documented in the 1800s, but they were less likely to be recognized at the time by others as

being sexual in nature and were more likely to be perceived by others as close friendship. An urban lesbian subculture did not emerge until the early 20th century.

The following is not intended to be an exhaustive history but to illustrate a few historical events that show the progression of laws and attitudes on sexual orientation. As soon as an urban gay culture had emerged, gay males were often subject to police harassment and imprisonment. Gay bars in the 1800s and 1900s were frequently raided. Notable people such as Oscar Wilde had careers destroyed by their outing (to use modern language) after arrest for consensual same-sex sexual behavior. Even the allegation of same-sex attraction resulted in significant consequences in the 1800s. For example, in Toronto, the heart of the modern “gay village” was known as Molly Wood’s Bush in the mid-1800s (Warkentin, 2009).^[28] Alexander Wood was a prominent Toronto resident who investigated an alleged rape in 1810 in which the woman said she scratched the accuser’s penis, so Wood, who was magistrate, examined the penises of young males who might have been the perpetrator. He had a reputation of having a sexual interest in men, and sexual assaults were rarely prosecuted, so the combination of his innovative investigative technique and dedication to catching the perpetrator led to public outrage, and he had to flee for several years, although he later returned. *Molly* was a 19th-century slur for a gender-nonconforming or gay male (*bush* simply referred to the fact that the area was heavily wooded at the time, even though now it’s in the heart of a major city). A statue now commemorates this incident, which demonstrates that the idea of homosexuality as an innate (and disapproved of) construct appears quite early in colonial North America.

By the 1930s in Berlin, there was a particularly active gay culture and a strong movement to decriminalize what had become Paragraph 175 of the German penal code, although this was abruptly halted with Hitler’s rise to power. In the United States, an early gay rights society called the Society for Human Rights was formed in Chicago in 1924, but it dissolved shortly after the arrest of many of its members. In the post–World War II period, sexual attitudes changed with studies such as Kinsey’s in the United States, including attitudes about same-sex sexuality, although legal prosecution of adults for same-sex behavior continued until the early 2000s.

In 1950, one of the earliest gay rights societies was formed in the United States: the Mattachine Society (Katz, 1992).^[29] The modern gay rights movement thus had many initiators, often those with same-sex attractions who risked their careers and freedom by revealing their orientation, as well as heterosexual individuals, such as psychologist Evelyn Hooker, who also risked their careers at a time when to be associated with advocating for gay rights was frowned upon. In the late 1950s and 1960s, Hooker conducted extensive empirical research on

self-identified heterosexual and homosexual people and found that orientation was not necessarily related to rates of mental illness, contrary to the view held at the time by medical professionals that same-sex attraction was pathological and necessarily associated with multiple psychological disorders. She also demonstrated that ill effects, when found, were largely the results of victimization (Hooker, 1993).^[30] Hooker began her career in an era when women were rarely able to receive academic appointments and was a pioneer in multiple respects (Goodchilds, 1997).^[31] In the decades since, empirical research has also contradicted many other myths about same-sex attraction. For example, in France, the slang for *gay* was once *PD*, which was short for *pédéraste* (one who sexually abuses children), reflecting an idea widely held in Western countries in the mid-20th century that gay men sexually abuse children. In reality, those with sexual attractions to adults of the same sex show no greater arousal to children than those with sexual attractions to adults of the other sex. These myths about pedophilia were once used to prevent out gay men from being teachers. Empirical research has also shown positive psychological outcomes in children raised from birth by gay and lesbian couples that are similar or superior to those of other-sex couples (see the American Psychological Association policy statement for a summary of many such studies; Paige, 2005).^[32] Despite this, the myth that having two parents of the same sex will adversely affect a child continues, and in many countries, including most of the United States, private adoption agencies were allowed to place restrictions on same-sex couples becoming parents, and in some countries and U.S. states, there are also legal restrictions on foster parenting and/or adoption for same-sex couples that are not faced by other-sex couples. It remains to be clear how the June 26, 2015 ruling by the Supreme Court on the status of same-sex marriage will impact these state laws.

Probably the most well-known event in gay equality was the Stonewall riots, which is now celebrated in contemporary gay pride festivals that happen worldwide in the summer months. The commemoration dates to a police raid on a gay bar called the Stonewall Inn in New York City on June 28, 1969. For more than a century, such raids had taken place and been part of a common practice of police harassment and arrests, both at places where men met for sex with other men, such as bathhouses, and at social venues, such as bars. Whereas in the past many gay men had complied with arrest, on that occasion, the bar's patrons resisted arrest and fought the police. Many of them were the most marginalized of their era, shunned at the time by others with same-sex attractions: highly gender-nonconforming gay men, sex workers, and drag queens. Other protests and demonstrations followed, and the Stonewall riots led to a renewed focus among gay men and lesbians in New York City on organizing to demand equality and fair treatment—movements that quickly spread to other cities

in the United States and elsewhere. The first gay pride marches took place 2 years later on June 28 in Los Angeles, Chicago, and New York City. In many cities, pride festivals have changed in meaning; although they often take place in the summer around the same time, they are no longer a call for justice but a major tourist attraction for people of all sexual orientations—and an opportunity to celebrate. The pride festival in the Netherlands, for example, is one of the largest parade-type festivals of the year, as popular as the Macy's Thanksgiving Day Parade is in the United States. In other countries, such as Russia, gay pride festivals continue to be small events focused primarily on advocating for greater equality, as was the case in the United States in the 1970s. Frequently, those who march are harassed by the public or subject to physical attacks by police. In 2012, a Russian court in Moscow upheld a 100-year ban on applying to gay pride rallies and upheld the arrest of those who had attempted to march earlier in the year (Peralta, 2012).^[33]

Individuals who participated in early gay rights movements in the United States (and those who do so today in countries where homosexuality is illegal) were (and are) subject not only to arrest but also to losing their jobs and careers. In the past, U.S. laws have prevented openly gay people from serving in the U.S. military, holding federal jobs, or teaching. Being open about sexual attractions other than heterosexuality would result in professional suicide. The term *closeted* dates to this earlier era. In the United States, this term encompasses the idea that by pretending to be heterosexual, nonheterosexual people were not only reacting to prejudice in society but were maintaining it. In 1972, a gay male psychiatrist, Dr. Anonymous, famously appeared wearing a mask before his colleagues at a national meeting of psychiatrists, making a case for homosexuality to be removed from the American Psychiatric Association's list of mental disorders. This was passed in 1973 (Dr. Anonymous later was identified as John E. Fryer, and the American Psychiatric Association now gives an award in his honor). Just as people with other-sex attractions rarely try to hide that they are in a relationship, in the 1970s and 1980s, an increasing number of previously closeted adults started to "come out" as gay, lesbian, and bisexual. Coming out has now come to refer both to self-acceptance and to a way of reducing societal prejudice and now frequently occurs at the age when people first realize their same-sex attraction as opposed to later in life. In the opinion of many historians, coming out has served as an important step in changing attitudes about sexual orientation, as people realize that many of their friends, family, and coworkers are not heterosexual and that there is no difference between them and the people they know who are heterosexual.

This process has been an uneven path in many countries, continuing into the current time. For example, the English parliament acted on the recommendation of the Wolfenden report in 1967, decriminalizing homosexual

behavior through a change in legislation by elected politicians. In the United States, sodomy laws continued to be supported by many states until very recently and were only eliminated nationally by a decision of the U.S. Supreme Court in 2003 (*Lawrence v. Texas*, 2003).^[34] In Canada, same-sex behavior was decriminalized by Parliament in 1969, but raids such as the Stonewall riots continued as late as 1981—much later than in the United States. Other changes in Canada came through the court system, including admitting gay men and lesbians to serve in its military in 1992 and allowing same-sex marriage in 2005. The United States accepted gay and lesbian people serving openly in the military in 2011, under a presidential directive by President Obama. The infamous “Don’t Ask Don’t Tell” policy, instituted by President Clinton in 1993, required people attracted to the same sex to conceal their orientation or face discharge, and thousands of military personnel were discharged in the nearly 20 years before the repeal of the policy (it was repealed in 2010, with an effective date of September 2011). Interestingly, opponents of the repeal predicted dire consequences for the military, but in late November 2011, the commander of the marines called the repeal “a nonevent” (Burns, 2011).^[35] We provide such detail because similar prohibitions continue in many other countries, with arguments being made against equality that are similar to those that were made in the United States.

Some countries, such as France, have avoided the religious associations that some people attribute to the word *marriage* by creating national civil unions that have largely the same rights and responsibilities as marriage and are open to all couples regardless of sex or sexual orientation. On June 26, 2015, the Supreme Court of the United States ruled that state laws prohibiting same-sex marriage were unconstitutional.

Media and Changing Attitudes

In the United States, early portrayals of people with same-sex attraction were absent in film and television, were negative, or portrayed highly gender-nonconforming individuals for comic effect. Newspapers such as the *New York Times* would refer to *homosexuals* long after this term had become pejorative in general usage and had been replaced by *gay man* or *lesbian*. While sexual minorities appeared as guests on talk shows from the 1960s, visibility in positive roles in popular television and film dates to the 1990s, with such films as *Philadelphia* (1993), which starred heterosexual and highly popular actor Tom Hanks as gay male who is HIV positive. The occurrence of HIV and AIDS (acquired immune deficiency syndrome) in gay males in the 1980s also served to spur both activism and increased visibility to sexual minorities. Isolated but popular television programs in the 1990s came to feature central characters who were a sexual minority, for whom orientation was merely one component of their character. This both reflected changing attitudes and also may have shaped

attitude change, particularly in a younger generation growing up with such models. This trend accelerated in the United States in the 2000s with many very popular television programs, both fictional and reality based, including out gay and lesbian individuals into the normal framework of entertainment. While one can only make statements about correlation and not causation, this was certainly correlated with significant changes in attitudes about sexual minorities. Similar trends have been observed in many industrialized countries, with very high-grossing and popular films and television programs about LGBT (lesbian, gay, bisexual, or transgender) characters in the United Kingdom, South Korea, and other countries since 2000, paralleling significant shifts in cultural attitudes toward sexual orientation. Marked declines have occurred in the percentage of people saying homosexual behavior is “always wrong” and increases in those who say it is “not wrong at all” (Smith, 2011).^[36] In most (but not all) countries, people who live in urban areas, people who are more educated (especially college educated), and people who are younger are more likely to hold positive views. The range around the world is quite large, with a high of 70% of people in the Netherlands saying that same-gender sexual behavior is “not wrong at all” to, on the other end of the spectrum and a high of 90.8% of people in Turkey saying it is “always wrong.”

Homophobia and School Bullying

Whether the changes in media portrayals have helped change attitudes or merely reflect changing attitudes is a matter of debate, as correlation does not imply causation. Certainly homophobia continues to exist in many countries. This is a term that refers to *prejudice against sexual minorities*. It is not simply a fear of sexual minorities but rather an aversion toward them and prejudice against them. While, strictly speaking, it refers to people who are gay or lesbian, in much research, it includes prejudices against bisexual individuals and those who are transgender. Research suggests that homophobia affects not only LGBT individuals but also heterosexual individuals who are gender role nonconforming, as the targets of homophobia are often people who, regardless of sexual orientation, appear gender nonconforming. Homophobia in contemporary usage also refers to the active support of legislation that discriminates against sexual minorities and to the opposition to laws that would ensure equal treatment.

Some research suggests that homophobia may in part be driven by distress at same-sex attraction that homophobic individuals themselves experience—what a Freudian psychologist would refer to as an unconscious ego defense known as *reaction formation*. One such study (Adams, Wright, & Lohr, 1996)^[37] showed that among self-identified heterosexual college-aged males, the ones scoring highest in homophobia showed greater erectile

response to gay pornography than males scoring low in homophobia. One critique of the study is that general arousal (such as from fear or anger) can result in partial erection, and other empirical research has shown that anger and fear are common responses to gay erotica in heterosexually identified males who are homophobic (Zeichner & Reidy, 2009).^[38]

A more recent study (DeHaan, Przybylski, Legate & Ryan, 2012) suggested that homophobia might be associated with parenting styles. They found that those subjects who experienced authoritarian parenting were more likely to express homophobia. That is, those people who expected rejection from their parents related to their sexual orientation might experience significant repression of their identity which could lead to defensive responding along the lines of reaction formation.

Discrimination also exists within sexual minority communities. *Biphobia* and *transphobia* refer specifically to negative attitudes and prejudice toward bisexual and transgender individuals, which can come from both heterosexual nontransgender populations and, at times, lesbian and gay individuals. People of color in the United States who are attracted to the same sex sometimes report that they feel they are a double minority and that the mainstream gay rights movements of the United States are dominated by Caucasian individuals who are relatively insensitive to issues of race and ethnicity. Some gay African Americans report experiencing the sense from within minority communities that being gay is a “white” phenomenon, even though many well-known African American figures have been gay (Boykin, 1996).^[39]

Check out this recent article in The Daily Beast regarding

biphobia: <http://www.thedailybeast.com/articles/2016/01/03/are-bisexuals-shut-out-of-the-lgbt-club.html?via=desktop&source=twitter>.

In the late 1990s and 2000s, several prominent U.S. public figures who were leaders in organizations lobbying against gay equality were discovered as having secret same-sex behavior (some later came out as gay and others as bisexual, while others continued to deny being attracted to the same sex, even after being arrested for soliciting gay sex from a policeman in a public bathroom). Such figures advocating antigay policies included the following individuals: the one-time leader of America’s Evangelical Christians, Ted Haggard, whom U.S. president George W. Bush had consulted weekly by telephone until it was revealed that Haggard had engaged in gay sex with a male prostitute; former U.S. senator Larry Craig, who opposed employment nondiscrimination laws, was “outed” when he was arrested for soliciting sex with a man in an airport bathroom; and, as discussed

earlier, George Rekers, a founder of one of the largest antiequality organizations and a leader of the movement to change sexual orientation.

Another drive behind homophobia and homonegative comments can be seen in general sex roles that emphasize masculinity. Carnaghi, Maass, and Fasoli (2011) ^[40] found that individuals' heterosexual identity was emphasized by exposure to homophobic epithets. This occurs even with unconscious priming (subliminal activation of homophobic thoughts) and can also occur at a conscious level to deliberately assert gender role conformity. Homophobia and homonegativity affect heterosexual people in terms of expectations for role conformity. The special role of homophobia in physical attacks on LGBT people has led to hate crimes legislation, including legislation against attacks on the basis of sexual orientation or gender identity. Homophobia and homonegativity, including using epithets such as "that's gay" to describe something negative, contribute to internalized homophobia (negative feelings about being gay or lesbian in gay or lesbian people themselves). This is a stress factor in sexual minorities and has been associated with higher rates of mental health problems and suicides in a subset of LGBT populations who experience discrimination—particularly adolescents. Rates of bullying and harassment of all types are as high as 65% in some national surveys, with appearance being the most common basis of bullying, and 33% say that they have been harassed on the basis of perceived sexual orientation (Cook, 2005). ^[41] Among LGBT middle- and high-school students, a much higher percentage say they have been harassed verbally (84.6%) or physically (40.1%) (Kosciw, Greytak, Diaz, & Bartkiewicz, 2009). ^[42] There is much disagreement in the literature as to how widespread such problems are. Savin-Williams (2006) ^[43] reports that most LGBT teens have positive experiences and that sexual minority stress is not the norm.

Nonprofit organizations and media campaigns exist to alleviate the psychosocial stressors that sexual minorities may experience as well as to combat homophobia. Many of these emphasize helping LGBT and gender-nonconforming adolescents, such as the It Gets Better Campaign, which was started in 2010 (ItGetsBetter.org, n.d.) ^[44] and the mental health outreach organization called The Trevor Project, which was started in 1998 (TheTrevorProject.org, n.d.). ^[45] Some countries, such as Norway, have worked for several decades on antibullying efforts in schools to stop all types of bullying (Stevens, De Bourdeaudhuij, & Van Oost, 2001), ^[46] but such a coordinated national effort against bullying does not yet exist in the United States and may be difficult given the independent nature of school districts in the United States. We explore additional research on bullying and how it relates to sexual aggression in [Chapter 12 "Sexual Aggression and Coercion"](#).

Special Issues Affecting Sexual Minorities

In addition to legal challenges and homophobia, as already described, which vary by geographic region and country, some sexual minority individuals face particular challenges related to rejection by their families and a conflict between religious beliefs and sexual orientation. Rejection by family members of sexual minority youth is believed to be a significant contributor to homeless and runaway teenagers in the United States, who may have also been at greater risk of having been physically and sexually abused by caretakers prior to running away (Whitbeck, Chen, Hoyt, Tyler, & Johnson, 2004; Corliss, Goodenow, Nichols, & Austin, 2011).^[47]^[48] Some adolescents are expelled from their homes by parents for being nonheterosexual, leading to high rates of mental health problems.

Check out this recent Rolling Stone story: <http://www.rollingstone.com/culture/features/the-forsaken-arising-number-of-homeless-gay-teens-are-being-cast-out-by-religious-families-20140903>.

It is important to note that while Hooker's research has been validated and same-sex attraction is not inherently or necessarily pathological, more recent research has found that some individuals attracted to the same sex are at greater risk for depression and substance abuse than heterosexual controls. Most authors attribute this to lingering societal prejudice, but Zietsch et al. (2012)^[49] suggested that differences in neural sexual differentiation correlating with sexual orientation may also affect the prevalence of psychological disorders. They note that in heterosexual populations, some psychological problems are clearly sex linked or gender linked; for example, depression is twice as common in females as in males, and substance abuse disorders are far more common in males than in females (both biological and sociocultural factors are believed to cause this). They suggested that the underlying brain organization that results in same-sex attraction may lead to some of the psychological risk factors that the other sex has, added on top of one's own sex's risk factors. This hypothesis is interesting and remains to be explored. They also note that genetic variations appear to explain 60% of the correlation between sexual orientation and depression (Zietsch et al. 2012).^[50]

Earlier, we addressed the origins of negative attitudes about sexual orientation and religion, but we did not address what it is like for an individual from one of these faith traditions to personally experience this conflict. The prevalence of various sexual orientations is largely unaffected by religious belief, and an individual's religious beliefs often is the same as that of his or her family of origin. Thus people who have same-sex attractions who are born into families with religious traditions that are highly negative about same-sex attractions often face a particularly difficult dilemma. For them, coming out may mean rejection by loved ones,

excommunication from a faith-based community, and a feeling that they have betrayed the values and teachings that are an important part of their spiritual beliefs and identity. Fortunately, gay-affirmative psychotherapy has been developed to help people come to realize that these can be reconciled to help individuals who wish to maintain their religious traditions. In many countries, alternative religious communities within the same general faith tradition can be found that do not discriminate on the basis of sexual orientation. Organizations in the United States such as Parents, Families, and Friends of Lesbians and Gays (PFLAG) also often match parents with other heterosexual parents who have also decided to change their values rather than reject a family member. However, it is sometimes the case that a person has to make the decision to risk rejection from family in order to be true to their orientation—a decision that is obviously easier for an adult who is living independently than for an adolescent dependent on parental support. As noted in a previous section, attempts to change sexual orientation are not supported by research, there are more “ex-ex-gays” than “ex-gays” in research samples of people who were highly motivated to change their sexual orientation, and nonacceptance can harm adolescent adjustment. These findings led California to prohibit licensed psychotherapists from attempting to change the sexual orientation of children or adolescents younger than 18 years old (American Psychiatric Association, 2012).^[51] In December 2012, a federal court blocked implementation of the law for three therapists who performed such practices, on the grounds that it limited rights of those therapists to free speech. However, the following day, another judge in the same federal court district upheld the law as an appropriate regulation of licensed mental health professionals, prohibiting an unproven practice that is potentially harmful (Olvera, 2012).^[52] Additional litigation is likely.

KEY TAKEAWAYS

- Laws about sexual orientation vary dramatically in the modern world, with some countries giving full equality to relationships regardless of the sex of the couple and other countries potentially giving the death penalty for even acknowledging same-sex attraction or behavior.
- Such differences today can be traced to both historical and religious roots, particularly in ancient Rome and the Abrahamic religions (Judaism, Christianity, and Islam).
- Religious traditions vary widely in their treatment of sexual orientation, both between and within major religious groups. Although the trend in secular society is toward greater tolerance, for many religious traditions, greater tolerance was shown in the past than in the present.
- Laws criminalizing same-sex behavior became common in the mid-1800s, which is about the time when a gay identity emerged among males as cities grew in size with industrialization. Lesbian identities and subcultures emerged somewhat later.
- The origins of movements for equal treatment for nonheterosexuals and heterosexuals, known as gay rights, dates to the late 1800s and had multiple starts in Germany and the United States before developing sustained

momentum in the late 1960s. The efforts continue today and after decades have led to the repeal of many discriminatory laws in some countries.

- Psychiatry in the 1800s and 1900s contributed to the pathologization of nonheterosexual orientations. This changed in the United States in 1973, building on research that started in the 1950s that disproved earlier myths about homosexuality causing mental illness.
- In most countries, the gay rights movement for equal treatment has progressed through both legislative efforts and civil rights efforts in the courts. In the United States and other countries, it has been characterized by legislative setbacks, including successful efforts to amend state constitutions to limit marriage to other-sex couples.
- Laws continue to discriminate on the basis of sexual orientation in many U.S. states and in countries around the world.
- Media portrayals of same-sex relationships and sexual minorities have increased since the 1990s in many industrialized countries, and this has been accompanied by significant shifts in attitudes, particularly among younger and more educated people. Whether media portrayals reflect or have caused changes, or both, is unclear.
- Homophobia has multiple and complex roots, which include religious beliefs and traditions as well as cultural conceptions of masculinity. Homophobia contributes to pressure in heterosexual people as well as in sexual minorities for gender role conformity, and it leads to physical and verbal assaults on sexual minorities. This includes bullying in primary and high-school populations of sexual minorities as well as adolescents perceived as being gender nonconforming. Estimates of the prevalence of such bullying vary widely.
- Some sexual-minority individuals face special challenges related to conflicts between their family of origin's beliefs and their sexual orientation. LGBT youth are believed to experience a much higher rate of homelessness as a result of mistreatment by families of origin.