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Father presence

- ***Religious engagement*** Actively religious teens more often reserve sexual activity for adulthood or long-term relationships (Hull et al., 2011; Schmitt & Fuller, 2015; Štulhofer et al., 2011)
- ***Father presence*** In studies that followed hundreds of New Zealand and U.S. girls from age 5 to 18, having Dad in the household has reduced the risk of teen pregnancy and of sexual activity before age 16 (Ellis et al., 2003). These associations held even after adjusting for other influences, such as poverty. Close family attachments—as in families that spend time together and where parents know their teens' activities and friends—also predict later sexual initiation (Coley et al., 2008).
- ***Comprehensive sex education*** Irish teens who received comprehensive sex education at school (including discussion of feelings, relationships, safe sex, and sexual orientation), compared with those who did not, were more likely to delay having sex until they were older (Bourke et al., 2014).
- ***Service learning participation*** U.S. teens who volunteered as tutors or teachers' aides, or participated in community projects, had lower pregnancy rates than did comparable teens randomly assigned to control conditions (Kirby, 2002; O'Donnell et al., 2002). Researchers are unsure why. Does service learning promote a sense of personal competence, control, and responsibility? Does it encourage more future-oriented thinking? Or does it simply reduce opportunities for unprotected sex? (After-school activities and later school start times also reduced unplanned pregnancies [Bryan et al., 2016; Steinberg, 2015].)

ASK YOURSELF

What strategies could your community use to reduce teen pregnancy?

RETRIEVE IT

RI-4 Which *three* of the following five factors contribute to sexual risk taking among teens?

a. Alcohol use
b. Higher intelligence level
c. Father absence
d. Mass media
e. Participation in service learning programs

ANSWERS IN APPENDIX F

Sexual Orientation

LOQ 16-6 What do we know about sexual orientation?

We express the *direction* of our sexual interest in our **sexual orientation**—sexual attraction that may be female-male (*heterosexual* orientation) or to our own sex (*same-sex* orientation), to males and females (*bisexual* orientation), or to no one at all (*asexual* orientation). We experience such attractions in our interests and fantasies. (Who appears in your imagination?)

In one British survey of 18,876 people (and in other surveys since), about 1 percent identified themselves as asexual, having "never felt sexually attracted to anyone at all" (Bogaert, 2004, 2015). People with an asexual orientation are, however, nearly as likely as others to report masturbating, noting that it feels good, reduces anxiety, or "cleans out the plumbing." Those who are asexual may enjoy non-sexual aspects of relationships (emotional closeness, companionship); one in three reports being in a romantic relationship (Carvalho & Rodrigues, 2022).

Cultures vary in their attitudes toward same-sex attractions. Should society accept such? *Yes,* say 94 percent of Swedes and 7 percent of Nigerians. Acceptance, however, is increasing worldwide, with women and younger, educated adults being more accepting (Poushter & Kent, 2020). Yet whether a culture condemns or accepts same-sex unions, heterosexuality is most common and same-sex attraction and other variations exist. In the African countries in which same-sex relationships are illegal, the ratio of

sexual orientation the direction of our sexual attractions, as reflected in our longings and fantasies.

gay and bisexual people "is no different from other countries in the rest of the world," reports the Academy of Science of South Africa (2015). And in cultures in which same-sex behavior is expected of boys before marriage, most men nevertheless grow up to be heterosexual—or *straight*—adults (Hammack, 2005; Money, 1987). So, same-sex activity spans human history, and sexual behaviors need not indicate *orientation*.

How many people have exclusively same-sex attractions? According to more than a dozen national surveys in Europe and the United States, about 3 or 4 percent of men and 2 percent of women (Chandra et al., 2011; Copen et al., 2016; Savin-Williams et al., 2012). But the percentages vary somewhat over time, with the percentage who feel comfortable self-reporting as gay or bisexual gradually increasing with increased social acceptance. In 2021, 5.2 percent of Americans reported being gay or bisexual (Jones, 2021). Percentages are also slightly higher when reporting is anonymous (Copen et al., 2016). A larger number of Americans—17 percent of women and 6 percent of men—say they have had some same-sex sexual contact during their lives (Copen et al., 2016). Psychologists have only begun to research the experiences of those who are bisexual (Borgogna et al., 2019; Greaves et al., 2019 ; House et al., 2022; Torres, 2019).

In less tolerant places, people are more likely to hide their sexual orientation. About 3 percent of California men express same-sex preferences on Facebook, for example, as do only about 1 percent in Mississippi. Yet about 5 percent of Google pornography searches in both states are for gay porn. And online ads for men seeking "casual encounters" with other men tend to be at least as common in less tolerant states, where there are also more Google searches for "gay sex" and "Is my husband gay?" (MacInnis & Hodson, 2015; Stephens-Davidowitz, 2013).

What would it be like to be straight in a majority same-sex culture? If you are straight, imagine that you have found "the one"—your perfect other-sex partner. How would you feel if you weren't sure who you could trust with knowing you had these feelings? How would you react if you overheard people telling crude jokes about straight people, or if most movies, TV shows, and advertisements showed only same-sex relationships? And how would you feel if children's organizations and adoption agencies thought you might not be safe or trustworthy because you are attracted to people of another sex?

Facing such reactions, some people with same-sex attractions may at first try to ignore or deny their desires, hoping they will go away. But they don't. And these people may—particularly if they live in a region or a country that condemns same-sex attractions—conceal their orientation, which can harm their mental health (Pachankis et al., 2020). Especially during adolescence or when feeling rejected by their parents or peers, people may struggle against same-sex attractions. Some people may wish to change their orientation, but the feelings are typically as enduring as those of straight people—who are similarly unable to change who they are (Haldeman, 1994, 2002; Myers & Scanzoni, 2005).

In surveys of U.S. high schoolers, gay youth have been twice as likely as straight youth to report being bullied, feeling unsafe, and experiencing violence. They have also been 3.6 times more likely to report persistent feelings of sadness or hopelessness in the past 12 months, and 4.5 times more likely to have "seriously considered attempting suicide" (CDC, 2020). When including a wider range of sexual orientations (gay, lesbian, bisexual, queer, questioning, asexual), the risk for attempted suicide is even greater, with 20 percent of these teens having attempted suicide over the past year (Trevor Project, 2022).

Today's psychologists view sexual orientation as neither willfully chosen nor willfully changed. "Efforts to change sexual orientation are unlikely to be successful and involve some risk of harm," declared a 2009 American Psychological Association report. A consensus of British mental health organizations agreed that such attempts are "unethical and potentially harmful" (Gale et al., 2017). Recognizing this, some countries and U.S. states and cities have banned "conversion therapy," which aims to change people's sexual orientation, for minors.

"There is no sound scientific evidence that sexual orientation can be changed."
—UK Royal College of Psychiatrists, 2014

Sexual orientation in some ways is like handedness: Most people are one way, some the other. A smaller group experiences some form of ambidexterity. Regardless, the way we are endures, especially in men (Dickson et al., 2013; Norris et al., 2015). Women's sexual orientation tends to be less strongly felt than men's and, for some women, is more *fluid* and changing. For example, 1 in 10 straight U.S. women report having had at least

one same-sex sexual partner, which is five times greater than the rate among straight men (Silva, 2022). Straight women may experience genital arousal to either male or female sexual stimuli (Chivers, 2017). Transgender men (assigned a female sex at birth but identifying as male) similarly seem to experience genital arousal to both male and female sexual stimuli (Raines et al., 2021). But transgender women tend to show much stronger sexual arousal toward whatever gender they are attracted to, as is the case for cisgender men.

In general, men are sexually simpler. Across time, cultures, situations, and differing levels of education, religious observance, and peer influence, men's sexual drive and interests have been less flexible and varying than have women's. Women, for example, more often prefer to alternate periods of high sexual activity with periods of almost none (Mosher et al., 2005). Social psychologist Roy Baumeister (2000) calls this flexibility *erotic plasticity.*

Origins of Sexual Orientation

So, if we do not choose our sexual orientation and (especially for men) cannot change it, where do these feelings come from? In an early search for possible environmental influences on sexual orientation, Kinsey Institute investigators in the 1980s interviewed nearly 1000 gay and 500 heterosexual people. They assessed nearly every imaginable psychological "cause" of same-sex attraction—parental relationships, childhood sexual experiences, peer relationships, and dating experiences (Bell et al., 1981; Hammersmith, 1982). Their findings: Gay people were no more likely than straight people to have been smothered by maternal love or neglected by their father. And consider this: If "distant fathers" were more likely to produce gay sons, then shouldn't boys growing up in father-absent homes more often be gay? (They are not.) And shouldn't the rising number of such homes have led to a noticeable increase in the gay population? (It did not.) Most children raised by gay or lesbian parents display gender-typical behavior and are heterosexual (Farr et al., 2018; Gartrell & Bos, 2010). And they grow up with health and emotional well-being similar to children with straight parents (Bos et al., 2016; Farr, 2017).

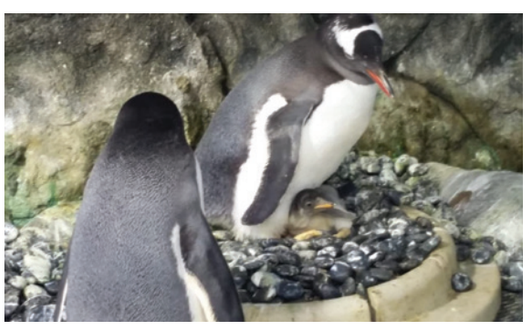
Environment likely contributes to sexual orientation—nature and nurture work together—but the inability to pin down specific environmental influences has led researchers to explore several lines of biological evidence. These include same-sex attraction in other species, brain differences, and genetic and prenatal influences.

SAME-SEX ATTRACTION IN OTHER SPECIES In Boston's Public Garden, caretakers solved the mystery of why a much-loved swan couple's eggs never hatched. Both swans were female. In New York City's Central Park Zoo, penguins Silo and Roy spent several years as devoted same-sex partners. Same-sex sexual behaviors have been observed in several hundred other species, including grizzlies, gorillas, giraffes, monkeys, flamingos, and owls (Bagemihl, 1999). Among rams, for example, some 7 to 10 percent display same-sex attraction by shunning ewes and seeking to mount other males (Perkins & Fitzgerald, 1997). Same-sex sexual behavior seems a natural part of the animal world.

BRAIN DIFFERENCES Might the structure and function of gay and straight brains differ? Neuroscientist Simon LeVay (1991) studied sections of the hypothalamus taken from deceased gay and straight people. He found a cell cluster that was indeed reliably larger in straight men than in straight women and gay men.

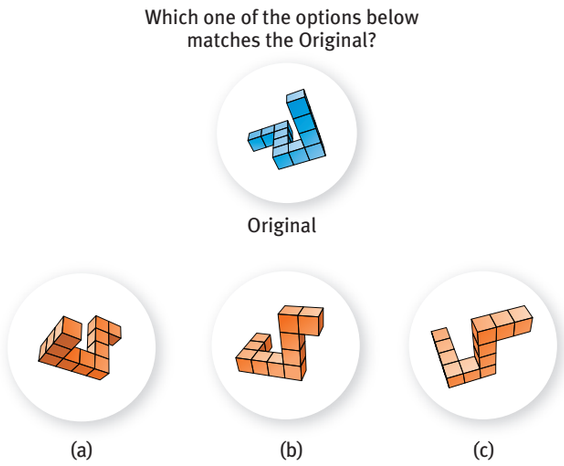
It should not surprise us that brains differ with sexual orientation. Remember: *Everything psychological is simultaneously biological.* But when did the brain difference begin? At conception? During childhood or adolescence? Did experience produce the difference? Or was it genes or prenatal hormones (or genes activating prenatal hormones)?

LeVay does not view the hypothalamus cell network as a sexual orientation center. Rather, he sees it as an important part of a brain pathway linked to sexual behavior. He acknowledges that sexual behavior patterns could influence the brain's anatomy. In fish, birds, rats, and humans, brain structures vary with experience—including sexual experience (Breedlove, 1997). But LeVay believes it more likely that brain anatomy influences sexual orientation. His hunch seems confirmed by the discovery of a similar hypothalamic difference between male sheep that do and don't display same-sex attraction (Larkin et al., 2002; Roselli et al., 2002, 2004). Moreover, such differences seem to develop soon after birth, and perhaps even before birth (Rahman & Wilson, 2003).



SEA LIFE Sydney Aquarium

Dad and Dad At Sydney's SEA LIFE Aquarium, Sphen and Magic, a bonded same-sex penguin pair, successfully raised a foster chick (appropriately named "Sphengic").



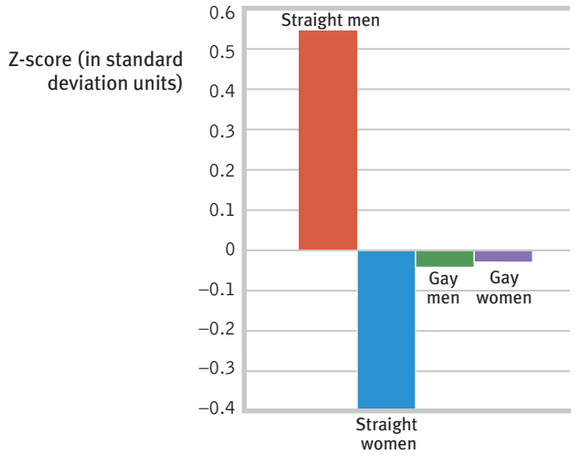


FIGURE 16.2
Spatial abilities and sexual orientation
Which of the three figures can be rotated to match the Original figure? Straight men tend to find this type of mental rotation task easier than do straight women, with gay men and gay women's scores falling in between (refer to graph) (Rahman et al., 2004). *[ANSWER: Figure (c).]*

Since LeVay's brain *structure* discovery, other researchers have reported differences in how gay and straight brains *function*. One is an area of the hypothalamus that governs sexual arousal (Savic et al., 2005). This brain area became active when straight women were given a whiff of a scent derived from men's sweat. Gay men's brains responded similarly to the men's scent. Straight men's brains showed the arousal response only to a female hormone sample. In a similar study, gay women's responses differed from those of straight women (Kranz & Ishai, 2006; Martins et al., 2005). Researcher Qazi Rahman (2015) sums it up: Compared with straight men and women, "gay men appear, on average, more 'female typical' in brain pattern responses and [gay] women are somewhat more 'male typical.'"

On several traits, the average gay man and gay woman fall midway between the average straight man and straight women. Consider the gay-straight difference in spatial abilities. On mental rotation tasks such as the one in **FIGURE 16.2**, straight men tend to outscore straight women, and gay men's scores fall in between (Xu et al., 2020). But straight women and gay men have both outperformed straight men at remembering objects' spatial locations in memory game tasks (Hassan & Rahman, 2007).

GENETIC INFLUENCES Studies indicate that "about a third of variation in sexual orientation is attributable to genetic influences" (Bailey et al., 2016). A same-sex orientation does tend to run in families. And identical twins are somewhat more likely than fraternal twins to share a same-sex orientation (Alanko et al., 2010; Långström et al., 2010). But because sexual orientations differ in many identical twin pairs, especially female twins, we know that other factors besides genes are also at work—including, it appears, *epigenetic marks* that help distinguish gay and straight twins (Balter, 2015; Gavrilets et al., 2018).

By altering a single gene in fruit flies, experimenters have changed the flies' sexual orientation and behavior (Dickson, 2005). In search of genes that influence human sexual orientation, researchers have analyzed the genomes of 409 pairs of gay brothers, and of 1231 straight men and 1077 gay men. They found links between sexual orientation and two genes on chromosomes 13 and 14. The first of those chromosome regions influences a brain area that varies in size with sexual orientation. The second influences thyroid function, which has also been associated with sexual orientation (Sanders et al., 2015, 2017). But we should also recall a familiar lesson: Human traits are *polygenic*—influenced by *many genes having small effects*. Indeed, a giant study of nearly 500,000 peoples' genes confirmed that "Same-sex behavior is influenced by not one or a few genes but many" (Ganna et al., 2019).

Researchers have speculated about possible reasons why same-sex attraction persists, given that it involves a "reproductive cost" (because same-sex couples cannot naturally reproduce) (Apostolou, 2022). One possible answer is *kin selection*. Evolutionary psychologists remind us that many of our genes also reside in our biological relatives. Perhaps, then, gay people's genes live on by supporting their relatives' survival

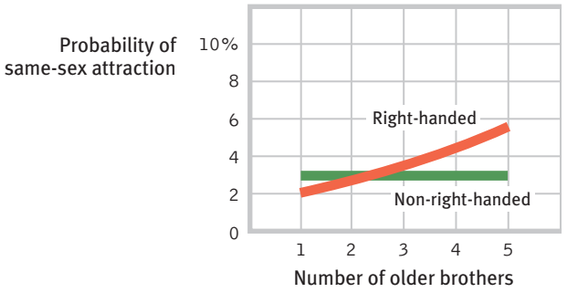
"Modern scientific research indicates that sexual orientation is … partly determined by genetics, but more specifically by hormonal activity in the womb." —Glenn Wilson and Qazi Rahman, *Born Gay: The Psychobiology of Sex Orientation,* 2005

William Haefeli/Cartoon Stock

"Thanks, but I'm in the midst of a lesbian phase that started the day I was born."

Note that the scientific question is not "What causes same-sex orientation?" (or "What causes heterosexual orientation?") but "What causes differing sexual orientations?" In pursuit of answers, psychological science compares the backgrounds and physiology of people whose sexual orientations *differ.*

FIGURE 16.3
The older-brother effect These approximate curves depict a man's likelihood of same-sex attraction as a function of the number of biological (not adopted) older brothers he has (Blanchard, 2008; Bogaert, 2006). This correlation has been found in several studies, but only among right-handed men (as about 9 in 10 men are). A similar, though weaker, effect occurs among men with older sisters.



and reproduction. Another possible answer comes from a study that analyzed the entire genome of 360,000 participants, who also reported their same-sex and other-sex sexual behavior (Zietsch et al., 2021). The results were striking: The same genetic patterns that predispose some people to be gay are also found in some straight people who tend to have more sexual partners, thus leading to more offspring.

A *fertile females theory* suggests that maternal genetics may also be at work (Bocklandt et al., 2006). Around the world, gay men tend to have more gay relatives on their mother's side than on their father's (Camperio-Ciani et al., 2004, 2009, 2012; VanderLaan et al., 2012; VanderLaan & Vasey, 2011). And the relatives on the mother's side also produce more offspring than do the maternal relatives of straight men. Perhaps the genes that dispose some women to conceive more children with men also dispose some men to be attracted to men (LeVay, 2011). Thus, the decreased reproduction by gay men appears to be offset by the increased reproduction by their maternal extended family.

PRENATAL INFLUENCES Recall that in the womb, sex hormones direct our male and female development. Two sets of findings indicate that the prenatal environment matters.

First, in humans, a critical period for fetal brain development seems to be the second trimester (Ellis & Ames, 1987; Garcia-Falgueras & Swaab, 2010; Meyer-Bahlburg, 1995). Exposure to the hormone levels typically experienced by female fetuses during this period may predispose females later to become attracted to males (Tasos, 2022). And female fetuses most exposed to testosterone appear most likely later to exhibit gender-atypical traits and to experience same-sex desires. "Prenatal sex hormones control the sexual differentiation of brain centers involved in sexual behaviors," noted Simon LeVay (2011, p. 216). When pregnant sheep were injected with testosterone during a similar critical period, their female offspring later showed same-sex sexual behavior (Money, 1987).

Second, the mother's immune system may play a role in determining the sexual orientation of the fetus. In a curious but amazingly reliable finding of 35 of 36 samples studied, men with older brothers have been somewhat more likely to be gay, reports Ray Blanchard (2004, 2018, 2019)—about one-third more likely for each additional older brother (Bogaert, 2003). A similar, though weaker, effect is found among men with older sisters (Blanchard & Skorska, 2022). The odds of same-sex attraction are roughly 2 percent among first sons, and they rise to about 2.6 percent among second sons, 3.5 percent for third sons, and so on for each additional older brother (Bailey et al., 2016). This is called the *older-brother effect* or the *fraternal birth-order effect* (**FIGURE 16.3**).

A recent study of more than 9 million Dutch people born between 1940 and 1990—60,000+ of whom had same-sex marriages—strongly confirmed the older-brother effect (Ablaza et al., 2022). The more older brothers, the more likely a same-sex marriage. (Curiously, in this study, women with older brothers were also more likely to enter a same-sex marriage.) Although the older-brother effect is but one of several biological contributions to sexual orientation, it is no longer a mere hypothesis; it is an established fact.

The reason for this older-brother effect is unclear. But the explanation does seem biological. The effect does not occur among adopted brothers (Bogaert, 2006). Blanchard and his colleagues (2021) offer a *maternal immune hypothesis:* Male fetuses may stimulate the mother's immune system to produce antibodies. With each pregnancy with a male fetus, the maternal antibodies may become stronger and may prevent a subsequent male fetus' brain from developing in a male-typical pattern (Bogaert et al., 2018).

The point to remember: Taken together, neurological, genetic, and prenatal findings offer strong support for a biological explanation of sexual orientation, especially for men (LeVay, 2011; Rahman & Koerting, 2008). Women's greater sexual fluidity suggests biopsychosocial influences as well (Diamond et al., 2017).

* * *

Those who believe sexual orientation is a lifestyle choice often oppose equal rights for gay people. For example, in signing a 2014 bill that made

some same-sex sexual acts punishable by life in prison, Uganda's president denied that same-sex attraction is inborn, declaring it rather a matter of "choice" (Balter, 2014; Landau et al., 2014). Those who instead understand sexual orientation as inborn—as shaped by biological and prenatal influences—more often favor "equal rights" for gay, lesbian, and bisexual people (Bailey et al., 2016).

Our discussion of concepts such as nonbinary gender identity may challenge your understanding. Some may feel that acceptance of diverse sexual orientations and gender identities challenges their personal beliefs (Wilkins et al., 2022). Do these new terms indicate that people have changed? Actually, today's scientists believe that gender identity and sexual orientation have always varied. In all places and times, some people have not fit neatly into binary male/female or gay/straight categories.

ASK YOURSELF

How has learning more about what contributes to sexual orientation influenced your views? How might your learning from this module influence your interactions with people whose sexual orientation differs from yours?

RETRIEVE IT

RI-5 Which *three* of the following five factors have researchers found to have an effect on sexual orientation?

a. An over-involved mother
b. The size of a certain cell cluster in the hypothalamus
c. Prenatal hormone exposure
d. A distant or ineffectual father
e. Having multiple older biological brothers

ANSWERS IN APPENDIX F

An Evolutionary Explanation of Human Sexuality

LOQ 16-7 How might an evolutionary psychologist explain male-female differences in sexuality and mating preferences?

Having faced many similar challenges throughout history, all genders have adapted in similar ways: We eat the same foods, avoid the same dangers, and perceive, learn, and remember similarly. When looking for a mate, we all prize many of the same traits—kindness, honesty, and intelligence—and we avoid our close genetic relatives (Dandine-Roulland et al., 2019). It is only in those domains where we have faced differing adaptive challenges—most obviously in behaviors related to reproduction—that we differ, say evolutionary psychologists.

Male-Female Differences in Sexuality

And differ we do. Consider sex drives. Men and women are sexually motivated, some women more so than many men. Yet on average, who thinks more about sex? Hooks up more often? Masturbates more often? Views more pornography? The answers worldwide: *men, men, men,* and *men* (Baumeister et al., 2001; Hall et al., 2017; Lippa, 2009; Petersen & Hyde, 2010). Even among 65- to 80-year-old Americans, 12 percent of women and 50 percent of men reported being "very" or "extremely" interested in sex (Malani et al., 2018).

Many gender similarities and differences transcend sexual orientation. Compared with gay women, gay men (like straight men) report more responsiveness to visual sexual stimuli, and more concern with their partner's physical attractiveness (Bailey et al., 1994; Doyle, 2005; Schmitt, 2007; Sprecher et al., 2013). Gay male couples also report having sex more often than do gay female couples (Peplau & Fingerhut, 2007). And men, regardless of sexual orientation, report more interest in uncommitted sex than do women (Schmitt, 2003).