

Updated January 2016 for a special issue of Scientific American on the sexual brain.  
The author's sexual orientation test can be taken at <http://MySexualOrientation.com>.



STRAIGHT

A neon sign with the word "STRAIGHT" in red, block letters. Below the text is a blue neon arrow pointing to the left. The sign is mounted on a dark surface, and the background is dark with some faint, blurry lights.



THE  
SEXUAL  
BRAIN

3/6

LEARNINGS

# DO GAYS HAVE A CHOICE?

Science offers a clear and surprising answer to a controversial question

BY Robert Epstein

# ON A TYPICAL SUMMER SATURDAY MORNING

Matt Avery and his wife, Sheila (not their real names), cook breakfast with their two sons, ages five and eight. Then they get organized with towels, goggles and water wings and load the family into the car for an afternoon at the pool. “Weekends are all about family time,” Matt says.

Matt and Sheila have been happily married for 11 years. “She’s my soul mate,” Matt says. “I wouldn’t trade my life for the world.”

But some people would claim that Matt’s life is based on an illusion—that he could not possibly be a dedicated husband and father. Why? Because Matt used to be gay.

According to the National Gay and Lesbian Task Force and at least a few experts, gays do not have a choice about their sexual orientation. If a man or a woman is born gay, he or she will always be gay. Because Matt was gay for most of his young adulthood (ages 17 to 24), the thinking goes, he must *still* be gay today. Pressured by a homophobic society—a society that dislikes and shuns gays—Matt has simply run back inside the closet. Gay activists favor this perspective at least in part because survey data show that people are more sympathetic to gay causes if they believe that sexual orientation is immutable.

Does this perspective have merit? Or are religious conservatives correct in asserting that homosexuality is entirely a matter of choice? A wealth of scientific evidence provides clear answers. It turns out that sexual orientation is almost never a black-and-white matter. Rather it exists on a continuum, with both genes and environment determining where people end up, how much flexibility people have in expressing their sexual orientation, and even the extent to which sexual orientation might change over time.

## Biblical Proportions

It is difficult for most people to think objectively about homosexuality, in large part because biases against it are literally of biblical proportions. According to the book of Leviticus, homosexuality—at least when practiced by males—is prohibited, punishable by death. Thousands of American pulpits to this day repeat the old biblical injunctions, which fuel discomfort with homosexuality at every layer of our society.

Until recent decades, prejudice against homosexuality has persisted even in the mental health professions. In the 1970s most therapists still held that homosexuality was a psychological disorder, akin to a disease. In the 1968 edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*—the indispensable diagnostic tool used by therapists—homosexuality appeared

### FAST FACTS

#### SEXUAL ORIENTATION

- 1 Some people who once considered themselves homosexuals are able to live happily as heterosexuals.
- 2 Sexual orientation falls along a continuum: some are exclusively attracted to members of the opposite sex; others, to the same sex; and many are somewhere in the middle.
- 3 Social pressure can push those in the middle toward heterosexuality. But because genes play a role, people with strong same-sex attractions probably cannot change their orientation.



The Stonewall Riots in Greenwich Village in 1969 initiated a shift toward greater cultural acceptance of homosexuality.

in the section on sexual deviations as an instance of an aberration in which sexual interests are “directed primarily toward objects other than people of the opposite sex.”

It was largely gays themselves—understandably tired of being viewed as freaks of nature—who began to assert that their orientation was not pathological. A defining moment came on June 27, 1969, after a police raid on a gay bar in Greenwich Village in New York City provoked a riot. Crowds continued to gather at the site for another five days, protesting discrimination and preaching gay rights. Now called the Stonewall Riots (named after the Stonewall Inn, which was at the center of the melee), they galvanized the modern gay-rights movement in America and initiated a shift toward greater cultural acceptance of homosexuality.

A mere four years later, in 1973, the nomenclature committee of the American Psychiatric Association (APA) set about reassessing the profession’s dark characterization of homosexuality. Leading the charge was the late psychi-

atrist Robert L. Spitzer of Columbia University [see box on page 61]. As a result of his committee’s recommendation, the term “homosexuality” disappeared from the next edition of the *DSM*. That hardly settled the matter, however. More than a third of psychiatrists were opposed to the change when it was made, and subsequent editions of the *DSM* have recognized that people might seek help from a therapist for “marked distress” or “conflicts” about sexual orientation.

### Changing “Truths”

Matt Avery had no doubt about his orientation when he first became sexually active in his teens. During college in the early 1980s, he worked at a gay bar and had hundreds of sexual partners. He also had a four-year relationship with a man. Matt considered himself “feminine.” “I was 140 pounds, had long fingernails, a blond ponytail

and wore an earring,” he reminisces. “I was a sight to be seen.”

But when he was 24, his partner returned from a weekend retreat with some incredible news. Being gay, his partner said, “wasn’t a truth” for him. Matt was distraught. “My whole life,” he says, “was defined by whomever I was with—whomever I could use to make up for my own faults.” After their sexual relationship ended, they stayed roommates and friends. But then, Matt says, “he started dating this *woman*.” “One day,” he recalls, “I decided homosexuality might not be a truth for me either, and I went on a date with a woman. It was pretty good.”

Within two or three years he found himself involved exclusively with women. He made the shift without therapy and without the influence of religious groups. He was supported, he says, by friends who helped him deal with “issues involving my father.” They helped him learn to be comfortable with his masculinity. Matt got to the point where even his sexual fantasies about men disappeared. In that respect, he probably became straighter than many heterosexuals. Although Matt made the switch without professional assistance, others—sometimes under tremendous social pressure from family members or religious groups—seek out “reparative” therapists to help them become straight.

Floyd Godfrey—himself formerly gay—has been a reparative therapist in Arizona for more than 15 years. His office has 12 clinicians, and many of their clients over the years have been men struggling to overcome homosexual tendencies. Godfrey says they come because they are depressed, anxious and unhappy. “They feel out of place,” he says. “They don’t feel like one of the guys. When people feel like they don’t fit in, that can produce depression.”

Some, he says, are young men whose fathers were abusive or neglectful. “Their dad was never available for them to bond with. Or sometimes mom was controlling or overprotective. The bottom line,” Godfrey says, “is that there

was a disruption during childhood of the bond that normally develops between father and son.” Deficient upbringing, Godfrey claims, can sometimes lead to same-sex attractions.

Let us set aside the obvious question for the moment—whether the therapy works—and consider a more basic issue. Why is it called “reparative”? Doesn’t this term presume that homosexuality is somehow invalid—that gays are like broken washing machines that need to be repaired? In other words, isn’t this therapy a retrenchment to the old disease model of homosexuality that Spitzer and his colleagues dispatched more than 30 years ago?

It seems so. Those deeply entrenched notions affect even the way we talk about homosexuality. Even the common term “sexual preference” reflects bias,

suggesting that orientation is entirely a matter of choice. As for the claim made by Godfrey and others that homosexuality is the result of poor parenting, there is simply no legitimate scientific evidence to support it. Whereas it is true that some homosexuals had poor relationships with their fathers when they were growing up, it is impossible to say whether those fathers produced homosexual tendencies in their sons by rejecting them or, instead, whether some fathers simply tend to shun boys who are effeminate at the outset.

As for the effectiveness of reparative therapy, in a landmark study published in the *Archives of Sexual Behavior* in October 2003, Spitzer interviewed 200 men and women who once considered themselves homosexuals but who had lived their lives as heterosexuals for at

least five years. Most of his subjects not only reported living long-term (more than 10 years) as heterosexuals, they also declared they had experienced “changes in sexual attraction, fantasy and desire” consistent with heterosexuality. The changes were clear for both men and women.

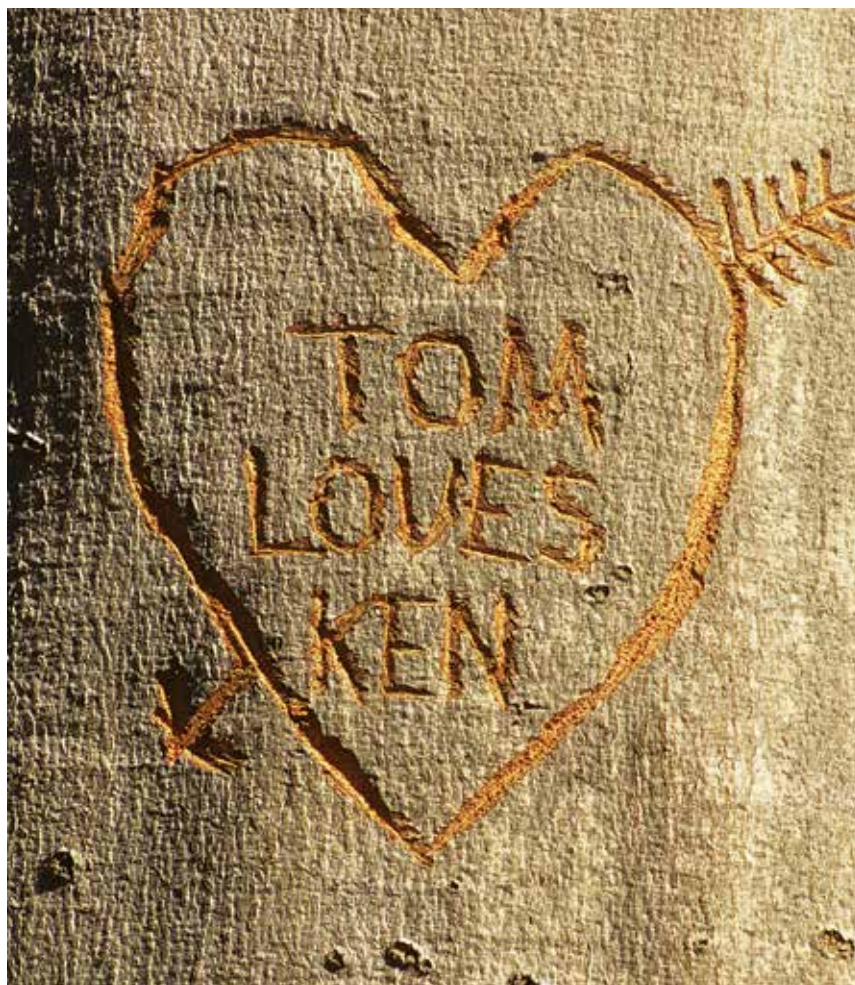
Once again, though, this study hardly settled the matter. In a brief article published in 2012, Spitzer retracted his 2003 findings, saying “there was no way to determine if the participants’ accounts of the change [in their sexual orientation] were valid.” Since then, the APA and other organiza-

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tions have issued formal statements expressing doubts about the effectiveness and safety of reparative therapy, and both California and New Jersey have banned the practice (at least for licensed therapists).

### Continuity Rules

At the heart of the controversy about homosexuality are some microscopically small objects: the strands of proteins that make up our genes. Two genetic issues are relevant to our understanding of homosexuality. First, do genes play any role in sexual orientation? And second, if genes do help determine orientation, do they actually create two distinct types of orientation—gay and straight, as most people



# SWITCHING SIDES?

The late Robert L. Spitzer was an ardent Trotskyite in his youth, and his father was a Maoist. At one point, he was even the vice president of the NAACP chapter at Cornell University. Maybe his background explains why, in 1972, when the psychiatrist first witnessed a gay protest at a psychology convention, it was he who approached the protesters, not the other way around. He saw social injustice, and he wanted to help.

He told the protesters he was a member of the nomenclature committee revising the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* for the American Psychiatric Association and that he would ask its members to allow gay activists to present their views. Ultimate-

ly, the committee recommended that the term “homosexuality” be eliminated from the *DSM*.

Before his death in December 2015 at 83 years old, Spitzer, who had retired from his professorship at Columbia University, told me that neither



he nor his committee ever meant to suggest that homosexuality was normal or healthy; such a conclusion would be “very wrong.” “Just

because something is not a mental disorder doesn’t mean it’s normal,” Spitzer explained.

What is more, Spitzer said, the committee was careful to preserve a category of dysfunction that allowed unhappy gays to seek change. “Distress” over one’s sexual orientation was still listed as a disorder.

In 1999 Spitzer entered the sexuality fray again—this time approaching a group of self-proclaimed ex-gays who were protesting at a convention. That event led to his controversial 2003 study that suggested that some homosexuals can turn straight—a study that he eventually retracted, saying it was the only professional regret of his life [see *main text*]. In a 2012 letter to the editor of the journal where his study had appeared nine years earlier, Spitzer wrote that his study design made it impossi-

ble to determine whether reparative therapy could enable individuals to change their sexual orientation from homosexual to heterosexual. “I believe I owe the gay community an apology for my study making unproven claims of the efficacy of reparative therapy,” he wrote. “I also apologize to any gay person who wasted time and energy undergoing some form of reparative therapy because they believed that I had proven that reparative therapy works with some ‘highly motivated’ individuals.”

Formerly a hero to gays, for a decade Spitzer became the reluctant darling of the Christian right. Spitzer saw no contradictions in his actions. As he told me before his death, “I think of myself as a guy who loves controversy, loves to be where the action is—and I did some courageous things.” —R.E.

believe—or do they create a continuum of orientation?

A variety of studies suggest that genes play at least some role in homosexuality. Although no one study is entirely conclusive, studies of twins raised together, twins raised apart and family trees suggest—at least for males—that the more genes one shares with a homosexual relative, the more likely it is that one will be homosexual—the hallmark of a genetic characteristic. But more interesting for our purposes is the question of a continuum. Sometimes, as with eye color, genes create discrete characteristics. But with many attributes, such as height and head width, genes create continuities. Whereas most people believe that

“straight” and “gay” are discrete categories, there is strong evidence that they are not—and this fact has important implications for the way we understand the various controversies surrounding homosexuality.

Ever since the late 1940s, when biologist Alfred Kinsey published his extensive reports on sexual practices

in the U.S., it has been clear, as Kinsey put it, that people “do not represent two discrete populations, heterosexual and homosexual.... The living world is a continuum in each and every one of its aspects.” A position statement by the APA, the American Academy of Pediatrics and eight other national organizations agrees that “sexual orienta-

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tion falls along a continuum.” In other words, sexual attraction is simply not a black-and-white matter, and the labels “straight” and “gay” do not capture the complexities.

For obvious evolutionary reasons, many people prefer opposite-sex partners, because such relationships produce children who continue the human race. But some—perhaps between 3 and 7 percent of the population—are exclusively attracted to members of the same sex, and many are in the middle. If a person’s genes place him or her toward one end of what I call the Sexual Orientation Continuum, he or she almost certainly can never become homosexual [see illustration on opposite page]. If the genes place the person at the other end of the curve, he or she almost certainly cannot become straight—or at least not a happy straight. But if an individual is somewhere in between, environment can be a major influence, especially when the person is young. Because society strongly favors the straight life, in the vast majority of cases the shift will be toward heterosexuality.

In an extensive study published in 2012, with more than 17,000 participants from 48 countries, my colleagues and I confirmed that sexual orientation lies smoothly on a continuum, just as Kinsey said. We also found an extensive mismatch between the labels many people use to describe their sexual orientation—gay, straight and bisexual—and their actual sexual attractions, fantasies and behavior. Moreover, just as people differ on where they fall on the Sexual Orientation Continuum, we found that they also differ in their “sexual orientation range”—how much flexibility they have in expressing their sexual inclinations.

Psychologist Lisa Diamond of the University of Utah and other researchers have also shown that sexual orientation is fluid to some extent. That is, it can change over the years. This is especially true for women.

The way sexuality plays out is similar in some respects to the process by

# HOW GAY ARE YOU?

To see where you fall on the Sexual Orientation Continuum, take this simple quiz, which is designed to produce a statistically correct distribution along the lines of the continuum shown in the illustration on the opposite page. For a more accurate picture of your sexual orientation, including an estimate of how much flexibility you have in expressing your orientation, take the author’s full test at <http://MySexualOrientation.com>

**How strongly are you attracted to members of the opposite sex?**

- 0 = Very strongly
- 1 = Moderately
- 2 = Not at all

**Have you ever felt sexually attracted to a member of the same sex?**

- 0 = No
- 1 = Yes

**Have you ever had a dream about a sexual encounter with a member of the same sex?**

- 0 = No
- 1 = Yes

**Have you ever had a waking fantasy about a sexual encounter with a member of the same sex?**

- 0 = No
- 1 = Yes

**Have you ever voluntarily had sexual contact (such as kissing or petting) with a member of the same sex?**

- 0 = No
- 1 = Yes

**How frequent are your same-sex fantasies or dreams?**

- 0 = Never had them
- 1 = Rare or occasional
- 2 = Frequent

**Have you ever felt sexually aroused when you’ve had any exposure to two people of your same sex having a sexual encounter (through gossip, a video or some other means)?**

- 0 = No
- 1 = Yes

**Would you be willing to have sexual relations with someone of the same sex?**

- 0 = No
- 1 = Maybe
- 2 = Yes

**How frequent are your same-sex encounters?**

- 0 = Never had them
- 1 = Rare or occasional
- 2 = Frequent

**Now add up the numbers and see where you stand:**

**0–1:**  
Exclusively heterosexual

**2–3:**  
Predominantly heterosexual

**4–5:**  
Predominantly heterosexual, with homosexual tendencies

**6–7:**  
Equally heterosexual and homosexual

**8–9:**  
Predominantly homosexual, with heterosexual tendencies

**10–11:**  
Predominantly homosexual

**12–13:**  
Exclusively homosexual

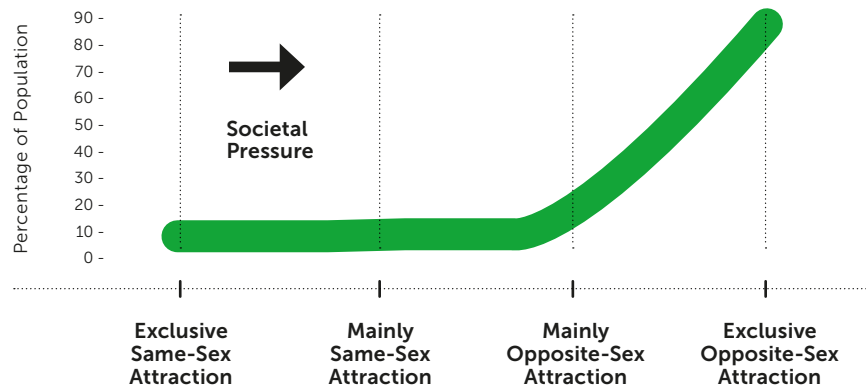
which people become left- or right-handed. It may sound contrary to common sense, but scientific studies suggest that genes play a relatively small role in handedness; its heritability—an estimate of what proportion of a trait’s variability can be accounted for by genes—is only about 0.25, compared with, say, 0.84 for height and 0.95 for head width. Then why is more than 90 percent of the population right-handed? It is because of that cultural “push” working again. Subtle and not so subtle influences make children favor their right hand, and the flexibility they probably had when they were young is simply lost as they grow up. Although they can still *use* the left hand, their handedness becomes so well established that they would find it difficult, if not impossible, to become left-handed.

Studies by psychiatrist Niklas Långström of the Karolinska Institute in Sweden and others suggest that the heritability of homosexuality is not much higher than that of handedness—perhaps in the range 0.25 to 0.50 or so for males and substantially lower for females. This finding raises an intriguing question: If people were raised in a truly orientation-neutral culture, what sexual orientation would they express? As shocking as this may seem, the large multinational studies my colleagues and I have been conducting in recent years suggest that without societal pressures to be straight, only a small percent of us would be exclusively heterosexual throughout our lives. Bisexuality was common among the ancient Greeks and Romans; have cultural and religious forces in recent times created the belief that same-sex attraction is a perversion?

### Matt’s Choice

As for Matt, it is likely that he, like most or all people who change sexual orientation, was not near an extreme end of the continuum to begin with. It is unreasonable to say that he has been returned to a “natural” state, however; with strong social support, he has simply chosen a new path for himself—one

## The Sexual Orientation Continuum



The author’s hypothetical curve, a theoretical extrapolation from statistical data, shows how sexual orientation is probably distributed across a large population. Sexual orientation lies on a continuum: it is not an all-or-nothing state.

that his genes made possible but that is almost certainly not possible for every gay person. Someday I suspect that psychobiological research will allow us to find precise physical correlates of sexual orientation: genes, neural structures or perhaps more subtle physical charac-

teristics. But no advances in science will ever completely resolve the moral and philosophical issues that Matt’s conversion raises.

Do gays have a choice? Because of the enormous pressures pushing all of us toward the straight end of the Sexual Orientation Continuum from the time we are very young, it is reasonable to assume that most of the people who currently live as homosexuals were probably close to the gay end of the continuum to begin with; in other words, they probably have strong genetic tendencies toward homosexuality. Even though some gays can apparently switch their sexual orientation, the vast majority probably cannot—or at least not comfortably. If you doubt that—and assuming that you are right-handed—try eating with your left hand for a day or two, and good luck with your soup. **M**

**If people were raised in a truly orientation-neutral culture, what sexual orientation would they express?**

### MORE TO EXPLORE

- **Queer Diagnoses: Parallels and Contrasts in the History of Homosexuality, Gender Variance, and the *Diagnostic and Statistical Manual*.** Jack Drescher in *Archives of Sexual Behavior*, Vol. 39, No. 2, pages 427–460; April 2010.
- **Support for a Fluid-Continuum Model of Sexual Orientation: A Large-Scale Internet Study.** Robert Epstein, Paul McKinney, Shannon Fox and Carlos Garcia in *Journal of Homosexuality*, Vol. 59, No. 10, pages 1356–1381; November 2012.
- **The Biology of Homosexuality.** Jacques Balthazart. Oxford University Press, 2012.
- **Philosophy and the Biology of Male Homosexuality.** Olivier Lemeire and Andreas De Block in *Philosophy Compass*, Vol. 10, No. 7, pages 479–488; July 2015.