

Who's Gay? Does It Matter?

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ABSTRACT—*To answer the question “Who’s gay?”—and its logical follow-up, “Does it matter?”—researchers usually define homosexuality with reference to one of three components or expressions of sexual orientation: sexual/romantic attraction or arousal, sexual behavior, and sexual identity. Yet, the three components are imperfectly correlated and inconsistently predictive of each other, resulting in dissimilar conclusions regarding the number and nature of homosexual populations. Depending on which component is assessed, the prevalence rate of homosexuality in the general population ranges from 1 to 21%. When investigators define the homosexual population based on same-sex behavior or identity, they enhance the possibility of finding a biological basis for homosexuality and a compromised mental health (suicidality).*

KEYWORDS—*gay; sexual orientation; sexual behavior; sexual identity; sexual/romantic attraction*

Calculating the number and characteristics of homosexual individuals has become a frequent scientific enterprise, with political, clinical, and scientific ramifications. Historically considered a rare phenomenon and a type of mental and moral deviance, homosexuality presents a unique opportunity for modern investigators to broadly explore biological, clinical, and social influences on developmental aspects of sexuality and gender. The ensuing research, however, has generally ignored one fundamental issue—how homosexuality is defined can determine empirical findings. Here I focus on three possible consequences: the prevalence of homosexuality in the general population, the biological basis of homosexuality, and clinical characteristics attributed to homosexual individuals.

SEXUAL-ORIENTATION COMPONENTS

The question of who belongs in which sexual population group, and on what basis, is central for any viable paradigm for research on sexual orientation (Diamond, 2003a; Savin-Williams, 2005).

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Yet, few definitive answers regarding the appropriate theoretical basis or empirical means of defining sexual orientation have been provided, resulting in little consensus about what constitutes “a homosexual” and, consequently, reservations about the generalizability of past research findings. Three components or expressions of sexual orientation have been proposed: sexual/romantic attraction, sexual behavior, and sexual identity (see Table 1 for definitions and measures).

When researchers assess the number or characteristics of homosexual individuals, they base their findings on a single sexual-orientation component—usually identity. This approach, however, excludes many same-sex-oriented individuals and misidentifies some heterosexuals as homosexual. Those who self-ascribe a gay/lesbian label are neither exhaustive nor representative of those with a same-sex orientation. If homosexual is assessed by same-sex attraction, there is no consensus about what proportion of an individual’s attractions must be directed toward same-sex others, or how strong the attractions must be, in order to count as homosexual. If homosexual is defined by same-sex behavior, gay virgins are omitted, heterosexuals engaging in same-sex behavior for reasons other than preferred sexual arousal are miscounted, and those with same-sex attraction who only have opposite-sex relations are excluded. If, however, homosexual is defined by an identity label, those who experience same-sex arousal or engage in same-sex behavior but who do not identify as gay or lesbian are omitted.

In the biological and health sciences, sexual orientation is usually inferred based on sexual behavior during the past year or since puberty. A single instance of same-sex behavior places an individual in the homosexual category—with little regard for the sexual context, what constitutes sex, the desirability or enjoyment of sex, or the frequency of sex. By contrast, in the psychological and social sciences, sexual orientation is usually determined by sexual identity (gay, lesbian, bisexual, heterosexual). What these terms mean or whether the identity label reflects sexual arousal, behavior, or attraction is seldom explored.

Research findings provide few answers regarding which component is most essential to determine sexual orientation, in part because empirical distinctions among them are seldom made. Consumers of research are left uncertain as to whether components are measuring the same or different constructs and whether these distinctions matter.

TABLE 1
Components of Sexual Orientation and Example Questions for Assessment*

Component	Definition	Questions
Sexual/romantic attraction	Attraction toward one sex or the desire to have sexual relations or to be in a primary loving, sexual relationship with one or both sexes	“On a scale of 1 to 4, where 1 is very appealing and 4 is not at all appealing, how would you rate each of these activities: . . . having sex with someone of the same sex?” (Laumann, Gagnon, Michael, & Michaels, 1994, p. 293) “Have you ever had a romantic attraction to a male? Have you ever had a romantic attraction to a female?” (Udry & Chantala, 2005, p. 484)
Sexual behavior	“Any mutually voluntary activity with another person that involves genital contact and sexual excitement or arousal, that is, feeling really turned on, even if intercourse or orgasm did not occur” (Laumann et al., 1994, p. 67)	“Have you ever had a relationship with someone of your own sex which resulted in sexual orgasm?” (Eskin, Kaynak-Demir, & Demir, 2005, p. 188)
Sexual identity	Personally selected, socially and historically bound labels attached to the perceptions and meanings individuals have about their sexuality	“Pick from these six options: gay or lesbian; bisexual, but mostly gay or lesbian; bisexual, equally gay/lesbian and heterosexual; bisexual, but mostly heterosexual; heterosexual; and uncertain, don’t know for sure.” (D’Augelli, Hershberger, & Pilkington, 2001, p. 252) “Do you think of yourself as heterosexual, homosexual, bisexual, or something else?” (Laumann et al., 1994, p. 293)

Note. *Sexual Orientation is the preponderance of erotic arousals, feelings, fantasies, and behaviors one has for males, females, or both.

PREVALENCE OF HOMOSEXUALITY

Across multiple cultures, age groups, and sexes, rates of homosexuality vary based on which sexual-orientation component is assessed (Table 2). In general, requesting information about attraction elicits the greatest prevalence of homosexuality, occasionally doubling or tripling the proportion of individuals that report same-sex behavior or identify as gay/lesbian/bisexual. In turn, reports of same-sex behavior usually exceed those of homosexual identification. The majority of individuals attracted to their own sex or engaging in same-sex sexual behavior do

not identify as homosexual (Laumann, Gagnon, Michael, & Michaels, 1994).

This dissimilarity in prevalence rates is further reflected in people’s inconsistent responses to the different components within a study and the instability of their responses over time. Several studies assessed more than one dimension; the resulting correlations ranged from extremely low (0.10) to high (0.79; e.g., Eskin, Kaynak-Demir, & Demir, 2005). Among U.S. adults, just 20% of those who were homosexual on one dimension were homosexual on the other two dimensions; 70% responded in a manner consistent with homosexuality on only one of the three

TABLE 2
Prevalence of Homosexuality Among Females and Males in Four Countries, Separated by Sexual-Orientation Component

Country	Attraction		Behavior		Identity	
	Female	Male	Female	Male	Female	Male
United States:						
Youth ^a	6%	3%	11%	5%	8%	3%
Young adults ^b	13%	5%	4%	3%	4%	3%
Adults ^c	8%	8%	4%	9%	1%	2%
Australia: Adults ^d	17%	15%	8%	16%	4%	7%
Turkey: Young adults ^e	7%	6%	4%	5%	2%	2%
Norway: Adolescents ^f	21%	9%	7%	6%	5%	5%

Note. ^aMosher, Chandra, & Jones, 2005; ^bSavin-Williams, 2005; ^cLaumann, Gagnon, Michael, & Michaels, 1994; ^dDunne, Bailey, Kirk, & Martin, 2000; ^eEskin, Kaynak-Demir, & Demir, 2005; ^fWichstrøm & Hegna, 2003

dimensions (Laumann et al., 1994). Diamond's (2003b) research highlights the instability problem. Over 7 years, nearly two thirds of women changed their sexual identity at least once, often because the label did not adequately capture the diversity of their sexual and romantic feelings. In the data set of the longitudinal Add Health study, of the Wave I boys who indicated that they had exclusive same-sex romantic attraction, only 11% reported exclusive same-sex attraction 1 year later; 48% reported only opposite-sex attraction, 35% reported no attraction to either sex, and 6% reported attraction to both sexes (Udry & Chantala, 2005).

Thus, individuals classified as homosexual in one study might not be so designated in another, giving rise to the possibility of discrepant findings across investigations, including divergent conclusions about the biological basis of homosexuality.

BIOLOGY OF HOMOSEXUALITY

Biological theories of homosexuality frequently note its association with gender-atypical behavioral and personality characteristics—"sissy boys" and "tomboy girls." In particular, neuroendocrine theories posit that homosexuality is due to the atypical gendering of relevant brain structures in utero and that prenatal hormones affect the direction both of one's sexuality and of one's gender expression. In their review, Bailey and Zucker (1995) concluded that the association (effect size) between homosexuality and gender nonconformity is one of the largest found in the psychological literature (less so among females). "Sissy boys" are nearly always gay and "tomboy girls" are disproportionately lesbian. Though the potential confounding factors in the association between homosexuality and gender nonconformity (reporting expectations, psychometric properties of gender-atypical scales) were discussed, not considered was whether gender expression varied based on the sexual-orientation dimension assessed.

A later study explicitly explored the relationship between homosexuality and gender nonconformity in a national sample of Australian twins (Dunne, Bailey, Kirk, & Martin, 2000). As expected, gender atypicality was highest among gay-identified individuals and lowest among individuals who identified as heterosexual. More interesting, among heterosexual-identified individuals, those who reported some degree of same-sex attraction were more gender atypical than those who reported engaging in occasional same-sex behavior, and those with both some same-sex attraction and some same-sex behavior were more gender atypical than were those who reported only one of these two. Because nearly all individuals who identified as gay also reported same-sex attraction and behavior, one implication is that these "true gays" have a neuroendocrine basis for their sexual orientation, which is manifested in their gender nonconformity. From this perspective, heterosexually identified individuals with same-sex attraction and/or behavior are not "false gays" but "less gay," occupying various points along the

homosexuality–heterosexuality spectrum. These individuals might be less likely to be biologically programmed in their sexuality (or feel same-sex attraction as strongly) than are those who are gay-identified. Alternatively, they may be equally homosexual but get there by a different route. For example, biological factors not involved in gender expression could affect their sexuality or biological factors directing homosexuality may miss the critical window of time necessary to affect gender expression. The association between homosexuality and gender nonconformity might also have a cultural component: Those who are most gender variant identify as gay because of cultural expectations that sissies and tomboys must be gay. Alternatively, such individuals are so biologically driven in their same-sex sexuality that culture is merely correctly reading the gender-expressive cues.

Thus, research linking homosexuality to biological influences might be stacking the deck by only recruiting gay-identifying or behaving subjects—those who are most likely to manifest high levels of gender atypicality (indicative of a biological cause). Which sexual-orientation component is assessed might also shape perceptions about the mental health status of homosexual individuals.

MENTAL HEALTH OF HOMOSEXUAL INDIVIDUALS

Investigators over the past 30 years have documented the considerable empirical support linking homosexual populations with clinical diagnoses such as depression, anxiety, substance abuse, and suicidality (Meyer, 2003). With suicidal-attempt rates that often triple those of heterosexuals, homosexual individuals purportedly experience a lifetime spiral of personal victimization, social discrimination, and cultural stigmatization without sources of support—all of which reach their critical developmental peak during adolescence. The result is "minority stress" and, ultimately, mental health problems. Although empirical support for this causal pathway is more circumstantial than conclusive, most investigators define their homosexual population based on gay identification or engagement in same-sex behavior. Because nearly all self-identified gays engage in same-sex behavior but most individuals who engage in same-sex behavior do not identify as gay, one hypothesis is that the critical risk factor driving the relationship between homosexuality and mental health is not sexual identification but sexual behavior—consistent with what is known about risk factors among heterosexual adolescents (Savin-Williams & Diamond, 2004). For example, among a representative sample of U.S. youth (Youth Risk Behavior Survey), high-risk sexual behavior (without regard for gender of partner: sex before age 14, at least four partners, unsafe sex) was a better predictor of suicide attempts than other factors such as violent behavior, drug use, disturbed eating, binge drinking, and tobacco smoking—with an odds ratio (5.0) double that of the next highest factor for medically treated suicide attempts (Miller & Taylor, 2005). The relationship

between psychopathology and the third component, sexual/romantic attraction and arousal, has generally been ignored.

Consistent with this portrayal of the risky nature of child/adolescent sexual behavior, it was found that in a representative sample of Norwegian youth, those who engaged in same-sex behavior were four times more likely than heterosexual youth to attempt suicide (15% vs. 4%). Adolescents with same-sex attraction and identity (9% each) were also more likely to attempt suicide, but less dramatically so. The correlation between attraction and identity was double the correlation between either and same-sex behavior, and when all three were used to predict suicide attempts, only sexual contact was significant (Wichstrøm & Hegna, 2003). Another study, however, demonstrated that it was not same-sex behavior per se that was related to elevated suicidality but an early age of sexual initiation, a large number of sex partners, and permissive attitudes or behaviors regarding unsafe sex (Savin-Williams & Ream, 2003). Although reasons for the risky nature of early, frequent, and unsafe same-sex activities remain speculative, they may be hazardous in the same way that sexual behavior is for heterosexuals: as an expression of a more general clinical syndrome characterized by acting-out behavior, rebellion, and impulsivity.

Thus, distinguishing among sexual-orientation components offers an alternative perspective to the position that homosexuality is inherently pathological or that society's reaction to same-sex sexuality drives young gays and lesbians to attempt suicide. Previous investigators likely oversampled those youth who were most at risk—adolescents engaging in hazardous same-sex behavior.

IMPLICATIONS

Depending on which sexual-orientation component is referenced, different conclusions can be drawn about the prevalence rate, etiology, and mental health profile of homosexual populations. The prevalence rate for homosexuality varies immensely, biological influences on homosexuality need further refinement, and the mental health profiles of homosexual populations may be no different from those of heterosexuals.

These conclusions have real-world consequences. If homosexual individuals constitute only 1% of the general population, it is politically easier to ignore or dismiss them than if they are known to be a constituency that surpasses most ethnic and minority groups. If the number is relatively minor and inconsequential, then it is difficult to argue for community-based same-sex programs and services, mass-media inclusion of gay role models, or Gay/Straight Alliances in public schools. Furthermore, believing that homosexuality is a chosen (nonbiological) condition, moral conservatives eagerly embrace research documenting the negative clinical profile of gays as evidence of homosexuality's intrinsic pathology and mercifully advocate changing homosexual individuals through conversion or reparative therapy, creating "ex-gays." Although sexual behavior and

identity are indeed susceptible to alteration by aversive stimuli and religious commitment, there is no scientifically reliable data that same-sex arousal and attraction can be permanently altered through relearning therapies.

What are researchers to do? Until conceptually well-positioned and psychometrically sound and tested definitions are used, it is unlikely that research can possibly or reliably identify the prevalence, causes, and consequences of homosexuality. Although multiple components of sexual orientation can be assessed, little is known about their stability over time, their consistency with each other, or their predictive power for various characteristics of homosexual populations.

Scientifically, two approaches are warranted. First, researchers are better assured of a same-sex oriented sample if they include only those individuals who consistently and reliably report multiple components of sexual orientation. I believe a higher priority should be given to sexual arousal/attraction over behavior and identity, primarily because the latter two are clearly prone to self- and other-deception, social conditions, and variable meanings. To avoid these shortcomings, biological measures of sexual attraction/arousal should be developed and used. Though not generally recognized by social scientists, sexual orientation can be measured by genital arousal in response to erotic stimuli or, less intrusively, through brain scans, eye tracking or pupil dilation in response to visual stimuli, body-odor preference (pheromones preference), and anatomical variations, such as digit-length ratio, right or left handedness, auditory characteristics (e.g., hearing sensitivity), and sex-role motor behavior (e.g., movement of hips while walking, crossing of legs while sitting).

A second approach is to forsake the general notion of sexual orientation altogether and assess only those components that are relevant for the research question being investigated. Examples include the following:

- To assess STDs or HIV transmission, measure sexual behavior
- To assess interpersonal attachments, measure sexual/romantic attraction
- To assess political ideology, measure sexual identity

Until the definition issue is resolved and more refined approaches are taken, caution is advised in estimating the prevalence of homosexuality, the origins and causes of sexual orientation, and the extent to which homosexual individuals are vulnerable for mental health problems.

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