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## Male bisexual arousal: A matter of curiosity?



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#### ABSTRACT

Conflicting evidence exists regarding whether bisexual-identified men are sexually aroused to both men and women. We hypothesized that a distinct characteristic, level of curiosity about sexually diverse acts, distinguishes bisexual-identified men with and without bisexual arousal. Study 1 assessed men's (n=277) sexual arousal via pupil dilation to male and female sexual stimuli. Bisexual men were, on average, higher in their sexual curiosity than other men. Despite this general difference, only bisexual-identified men with elevated sexual curiosity showed bisexual arousal. Those lower in curiosity had responses resembling those of homosexual men. Study 2 assessed men's (n=72) sexual arousal via genital responses and replicated findings of Study 1. Study 3 provided information on the validity on our measure of sexual curiosity by relating it to general curiosity and sexual sensation seeking (n=83). Based on their sexual arousal and personality, at least two groups of men identify as bisexual.

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#### 1. Introduction

Previous research investigated several links between personality and aspects of sexuality, for example, individual differences in sex drive (Lippa, 2006), risky sexual behavior (Zietsch, Verweij, Bailey, Wright, & Martin, 2010), and sociosexuality (Quist et al., 2012). Little research, however, has been conducted regarding the relationship between personality and sexual orientation; one thoroughly studied exception is masculinity-femininity (Lippa, 2008). We examined the possibility that a different personality trait, level of curiosity towards sexually diverse acts, is linked to a specific sexual orientation, male bisexuality, Individuals differ in their curiosity about a wide range of sexual attitudes - including their interest in seeing others naked, observing someone else having sex, watching pornographic movies, or taking part in sex orgies (Eysenck, 1970, 1973, 1976; Heaven, Fitzpatrick, Craig, Kelly, & Sebar, 2000). Based on the terminology used by Eysenck, we refer to this characteristic as sexual curiosity. With the present studies, we suggest a mechanism that accounts for seemingly contradictory previous findings: level of sexual curiosity explains why some bisexualidentified men show bisexual arousal patterns whereas others do not.

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#### 1.1. Male bisexual identity and sexual arousal

People adopt a bisexual identity for many reasons, including past or current sexual attractions or sexual behaviors, the capacity to fall in love with men and women, discomfort with being labeled "straight," "gay," or "lesbian," or out of loyalty towards a nonheterosexual community (Fox, 2003; Rust, 2001). Perhaps because of this diversity, men and women with bisexual identities remain poorly understood; moreover, at times they are even dismissed as misrepresenting their true sexual orientation (Dodge et al., 2012; Rust, 2002). This latter state stems, in part, from the extended debate about whether bisexual-identified men show sexual arousal patterns consistent with their identity, similar to heterosexual and homosexual men (Bailey, 2009). Some research suggests that bisexual-identified men are sexually aroused to both men and women, as measured by their genital responses or pupillary responses (Rieger & Savin-Williams, 2012; Rosenthal, Sylva, Safron, & Bailey, 2011). However, other research suggests that most bisexual-identified men are similar to homosexual men in exhibiting almost exclusive sexual arousal to men (Rieger, Chivers, & Bailey, 2005; Tollison, Adams, & Tollison, 1979).

A different line of research suggests that bisexual men, more so than heterosexual or homosexual men, are sexually aroused if presented with bisexual stimuli (i.e., sexual stimuli depicting two males and one female) and thus show bisexual responses (Cerny & Janssen, 2011; Rosenthal, Sylva, Safron, & Bailey, 2012). Yet, given the nature of these stimuli it is difficult to tell whether it was sexual arousal to both sexes, or sexual arousal towards one of

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the presented sexes, that contributed to this finding. In fact, when responses of the same men to stimuli depicting only men or stimuli depicting only women were investigated, bisexual-identified men from one dataset showed bisexual arousal patterns (Rosenthal et al., 2011), whereas bisexual-identified men from the other dataset had arousal patterns similar to homosexual men (Bailey, Rieger, & Rosenthal, 2011). Hence, with respect to their sexual arousal towards men or women, at least two groups of bisexual-identified men appear to exist. We refer hereafter to bisexual-identified men as bisexual regardless of their sexual arousal patterns.

#### 1.2. Male bisexual identity and sexual curiosity

Eysenck (1976) proposed that genetic and physiological influences account for individual differences in a variety of personality characteristics, including a range of sexual attitudes and desires. One particular sexual attitude is the aforementioned trait, sexual curiosity, that includes, for example, elevated interests in watching erotic images or movies or participating in orgies (Eysenck, 1970, 1973). Sexual curiosity might be linked to a bisexual identity.

Stereotypes of bisexual people include the belief that they are more sexually experimental and promiscuous than heterosexual or homosexual people, more interested in short-term mating strategies, and more open to new experiences (Israel & Mohr, 2004). Some bisexual men do, in fact, have stronger sexual attractions to and fantasies about both men and women, and are more sexually adventurous than most men (Weinrich & Klein, 2002). Among men with bisexual behaviors, several groups were identified and two of these groups had larger numbers of either male or female sex partners than other men (Taywaditep & Stokes, 1998). For bisexual men, unlike for both heterosexual men and homosexual men, those with a higher sex drive are likely to be more sexually attracted to both men and women (Lippa, 2007). In addition, men with bisexual experiences have, on average, a genetic make-up associated with higher levels of sensation seeking (Hamer & Copeland, 1994).

In one small sample of 30 men, bisexual men reported, on average, more sexual curiosity than either heterosexual or homosexual men, p = .01,  $\beta$  = -.47 (Rieger, Stief, Puts, & Savin-Williams, 2012). However, as reflected in several studies cited above, a diverse range of people identify as bisexual (Lewis, Derlega, Brown, Rose, & Henson, 2009). Even if, on average, they were more sexually curious than other groups, this would not imply that all bisexual men are high in sexual curiosity. Perhaps, then, variations in sexual curiosity explain why some bisexual men show bisexual arousal patterns whereas others do not.

#### 1.3. Male bisexual identity, sexual curiosity, and sexual arousal

Degree of sexual curiosity could differentiate bisexual men's sexual arousal patterns in two plausible ways. First, only bisexual men with elevated levels of sexual curiosity might show bisexual arousal. Eysenck (1976) suggested that genetic and physiological influences account for differences in personality characteristics, and that these characteristics relate to a variety of sexual attitudes, interests, and behaviors. Recent behavioral-genetic models confirm a common genetic factor for certain personality characteristics and risky sexual attitudes (Zietsch et al., 2010). Other analyses suggest genetic underpinnings for both novelty-seeking characteristics (Munafò, Yalcin, Willis-Owen, & Flint, 2008) and a range of sexual attitudes and preferences (Ben Zion et al., 2006; Garcia et al., 2010; Halpern, Kaestle, Guo, & Hallfors, 2007).

In theory, a common factor, such as genetic influences, can be applicable to specific combinations of personality and sexuality. In line with Eysenck's (1976) broad theory, a genetic predisposition could account for increased sexual curiosity and increased sexual attraction and arousal to both men and women. Hence, those

bisexual men with increased sexual interests might be more sexually aroused to both sexes. Because sexual arousal likely affects the formation of most male sexual identities (Bailey, 2009), these predispositions could form the basis for some men's bisexual identification. Given this proposal, only bisexual men with high levels of sexual curiosity will be sexually aroused to both men and women. In contrast, bisexual men who do not have elevated levels of sexual curiosity would be primarily sexually aroused to one sex, similar to most men (Bailey, 2009).

Second, and alternatively, sexual curiosity might distinguish between bisexual men with and without bisexual arousal patterns in an opposite manner than the one described above. That is, some men might show substantial bisexual arousal although their sexual curiosity is not elevated, and this bisexual arousal could form the basis for a bisexual identity. Other bisexual men, though, might show elevated sexual curiosity but not substantial bisexual arousal. Because of low inhibition to a variety of sexual stimuli, or high excitation to them, or a combination of both (Bancroft, Graham, Janssen, & Sanders, 2009; Janssen, Vorst, Finn, & Bancroft, 2002), elevated sexual curiosity in the latter group could override their predominant preference for one sex. Consequently, due to their high levels of sexual curiosity, these men might seek sexual experiences with both men and women, even if they prefer one to the other, and subsequently identify as bisexual.

In sum, sexual curiosity and bisexual arousal could interplay in two possible ways – they are either linked to each other or expressed independently of each other. In either case, this interplay between personality characteristics and sexual arousal patterns might distinguish between those bisexual men who are sexually aroused to both sexes and those who are not.

#### 1.4. Measurement of sexual arousal

The first of the current studies used pupil dilation as an index of sexual arousal. Pupil dilation to stimuli indicates activation of the autonomic nervous system (Bradley, Miccoli, Escrig, & Lang, 2008) that is associated with many automatic processes such as perspiration, digestion, blood pressure, and heart rate (ten Donkelaar, Němcová, Lammens, Overeem, & Keyser, 2011). Other research suggests that pupil dilation reflects attention that is likely not in the conscious control of participants (Heaver & Hutton, 2011). For these reasons, pupil dilation has been used as an indicator of automatic responses, including responses reflecting sexual arousal (Goldinger & Papesh, 2012; Laeng, Sirois, & Gredebäck, 2012). Pupils dilate more to sexual stimuli depicting an individual's preferred sex than to stimuli of the other sex or to non-sexual stimuli (Hess & Polt, 1960; Hess, Seltzer, & Shlien, 1965; Rieger & Savin-Williams, 2012). In fact, dilation to sexually preferred stimuli appears to be the strongest pupillary response elicited by stimuli (Laeng et al., 2012). In addition, degree of pupil dilation corresponds with time spent viewing these stimuli, self-reported sexual attraction to stimuli, and self-reported sexual orientation (Hess et al., 1965; Rieger & Savin-Williams, 2012). These findings point to the utility of this measure for the present research.

The second study assessed men's genital responses to sexual stimuli, an established indicator of their sexual attraction and arousal. This is achieved by assessing changes in penile circumference or volume with gauges worn by participants (Janssen, 2002, 2011). Genital arousal is a strong indicator of male sexual orientation in the sense that heterosexual men exhibit almost exclusive genital arousal to women but not to men, and homosexual men exhibit almost exclusive genital arousal to men but not to women (Chivers, Seto, & Blanchard, 2007; Freund, Langevin, Cibiri, & Zajac, 1973; Rieger et al., 2005; Sakheim, Barlow, Beck, & Abrahamson, 1985). Because men's genital arousal to sexual stimuli is less likely under their conscious control than their

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