

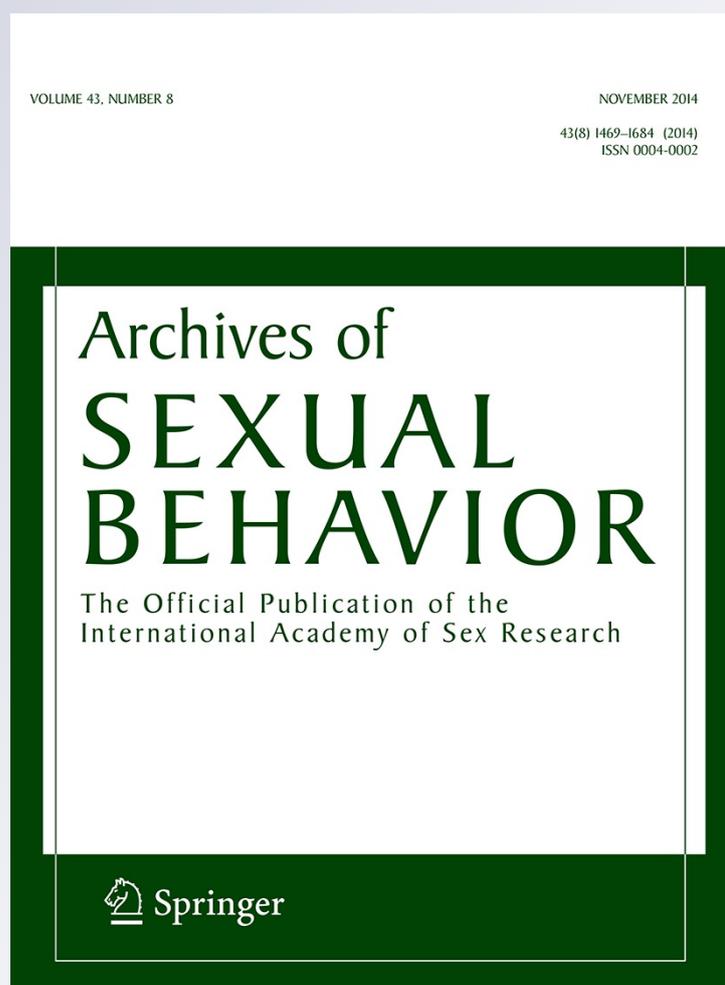
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Individual Differences in Perceptions of Gay Men's Sexual Role Preferences from Facial Cues

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Abstract Research has demonstrated that the sexual role preferences of gay men can be perceived with accuracies that exceed chance guessing from viewing photos of their faces. This research was conducted with only heterosexual perceivers making the categorizations. We therefore examined whether men who have sex with men ($N = 121$) were able to perceive sexual role preferences from faces and, critically, whether perceivers' masculinity, femininity, homonegativity, and own sexual role preference affected their categorizations of targets as "tops" or "bottoms." We found that men who have sex with men, like heterosexual perceivers in prior work, perceived gay men's sexual role preferences accurately. Furthermore, men who self-identified with a receptive (bottom) role were more accurate in their categorizations and male perceivers who self-reported higher levels of masculinity were more likely to categorize other men as bottoms. These findings suggest that men's masculinity could serve as a lens through which people perceive others and interact with the world.

Keywords Masculinity · Men who have sex with men · Sexual orientation · Sexual roles · Social perception

Introduction

Gay men self-identify as "tops," "bottoms," or "versatiles" (Moskowitz, Rieger, & Roloff, 2008). These distinctions are often used as labels to communicate individuals' preferences for sexual roles (Kippax & Smith, 2001) and reflect actual intimate behaviors during sex. During sexual intercourse between men,

the top assumes an insertive and penetrative role whereas the bottom is penetrated (Gil, 2007; Wegesin & Meyer-Bahlburg, 2000; Zhou et al., 2013). Versatile men report equal enjoyment of both roles (Moskowitz et al., 2008). Indeed, research has suggested that most men identify with the category versatile (56 %) whereas tops and bottoms generally divide the other 44 % of the gay male population somewhat equally (Hart, Wolitski, Purcell, Gómez, & The Seropositive Urban Men's Study Team, 2003; Wegesin & Meyer-Bahlburg, 2000). Data show that these categories are relatively stable with only small changes occurring as a function of sociocultural factors, such as relationship status (Pachankis, Bутtenwieser, Bernstein, & Bayles, 2013). Further research has also suggested that there may be some racial differences in whether people identify as tops and bottoms, with Asian men in the U.S. engaging in receptive sex more often than men of other races (Han, 2008; Raymond & McFarland, 2009; Tan, Pratto, Operario, & Dworkin, 2013). On average, these distinctions are related to gay men's underlying dispositions: tops are more masculine whereas bottoms are more feminine (Kippax & Smith, 2001; Zheng, Hart, & Zheng, 2012). Moreover, these labels map not only onto roles in anal intercourse, but also other sexual behaviors (Moskowitz et al., 2008). Thus, sexual role preferences appear valid, prevalent, and relatively stable descriptors of men who have sex with men that seem to reflect traditional male–female gender roles (Tskhay & Rule, 2013a).

Indeed, interviews with gay men suggest that they rely on stereotypic gender roles when speaking about their sexual and romantic relationships (Kippax & Smith, 2001). Some couples interviewed even described their relationship as that occurring between "man and woman" (Kippax & Smith, 2001, p. 418; emphasis in original). This generalization likely reflects overall masculinity and femininity. Research has demonstrated, for example, that men who self-identify as tops and versatiles are less feminine than men who self-identify as bottoms (Bailey, Kim,

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Hills, & Linsenmayer, 1997; Wegesin & Meyer-Bahlburg, 2000; Weinrich et al., 1992). Data further suggest that tops internalize homophobia more readily (Hart et al., 2003), engage in more stereotypically masculine behaviors, and have more masculine physical characteristics, such as larger penises (Moskowitz & Hart, 2011). Masculinity is a highly valued trait in the gay community that men frequently emphasize by describing themselves as “masculine” and “straight-acting” (e.g., in their personal advertisements) (Bailey et al., 1997; Moskowitz, Rieger, & Seal, 2009; Rule, Ishii, Ambady, Rosen, & Hallett, 2011). Thus, individuals may evaluate masculinity and femininity when encountering potential sexual partners for the first time.

A recent study found that sexual role preferences in gay men could be perceived accurately (Tskhay & Rule, 2013a). In that investigation, participants viewed photos of faces of self-identified tops and bottoms and were asked to guess their role preferences. The participants were significantly more accurate than chance when categorizing tops and bottoms and displayed a bias towards categorizing men into the traditional, gender-congruent role of “top.” The results of this study indicated that perceivers’ accuracy was mediated by perceptions of the targets’ masculinity such that tops were perceived as more masculine than bottoms. Whether an individual’s own masculinity affects perceptions of sexual role preferences in others remains unclear. Furthermore, the previous research on perceptions of sexual role preference in homosexual men was conducted with heterosexual participants, leaving untested the question of how gay men perceive role preferences in other gay men.

The ecological theory of social perception suggests that perception is motivated and functional (Zebrowitz-McArthur & Baron, 1983). Gay men are motivated to find sexually compatible partners (Bailey, Kim, Hills, & Linsenmeier, 1997). Thus, we expected that men who have sex with men would be accurate at identifying sexual role preferences from other men’s faces, replicating previous work with heterosexual participants (Tskhay & Rule, 2013a).

The current study examined how men’s own personal characteristics affected their perceptions of the sexual role preferences of other men. One previous study found that bisexual and versatile gay men assessed their partner’s masculinity before committing to being a top or a bottom in sexual encounters (Carballo-Diéguez et al., 2004). Further work demonstrated that tops preferred more feminine faces whereas bottoms found masculine faces more appealing (Zheng et al., 2013). Other research has found that men with masculine traits are more likely to perceive other men as submissive whereas men with feminine traits are more sensitive to cues of dominance in other men (Watkins, Jones, & DeBruine, 2010b). Thus, it is conceivable that more masculine men would be more likely to label others as bottoms whereas less masculine men would display a bias towards perceiving other men as tops. Likewise, perceivers from nations that are less accepting of homosexuality (i.e., that are more homophobic or place a greater social stigma on homosexuality)

are less likely to categorize people as gay than those from more tolerant countries (Rule et al., 2011). By this logic, it is possible that individuals who score higher in homonegativity may be more likely to classify men as tops, as insertive sex is typically viewed as more dominant and less socially-stigmatized than receptive sex (Taywaditep, 2002). We therefore explored whether men who have sex with men were accurate at making categorical judgments of sexual role preferences and whether their perceptions were affected by sexual role preferences and associated personal characteristics (i.e., masculinity, femininity, and homonegativity).

Method

Participants

The study was advertised as examining sexual role preferences among men who have sex with men on Amazon’s Mechanical Turk (Buhrmester, Kwang, & Gosling, 2011). Thus, we stated that we were looking for men who have sex with men as participants and eliminated any heterosexual participants. The final sample consisted of 121 men who completed the entire questionnaire and reported engaging in sex with men ($n = 14$ bisexual).¹ The sample was 71.90 % White, 11.57 % Latino, 9.92 % Asian, 2.48 % Black, and 4.13 % other race. The average age of the participants was 28.62 years ($SD = 8.77$).

Measures

Stimuli

Stimuli consisted of 198 photographs of self-identified gay men used in the previous work examining judgments of gay men’s sex roles among heterosexual perceivers (Tskhay & Rule, 2013a). As described in the previous work with this picture set, hypothesis-blind research assistants downloaded the pictures from gay men’s online dating advertisements posted in major U.S. cities. The website automatically updated every time a new user logged-in. Thus, each time our research assistants accessed the webpage, they were presented with a completely new and relatively random set of available profiles. Half of the men unambiguously self-identified as insertive partners (tops) and half of the men identified as receptive partners (bottoms). The sample did not contain any men who self-identified as versatile. The men in the pictures looked directly into the photographer’s camera and had no facial adornments (e.g., piercings, eyeglasses) or facial hair. The faces were cropped to the limits of the face, converted to grayscale, and standardized in size. We did not disclose the sexual roles or sexual orientations of the targets to the participants.

¹ Bisexual men did not differ from gay men on any measures of interest.

Modern Homonegativity Scale (MHS)

The 12-item MHS scale was used to measure attitudes towards gay men in contemporary societies. The original scale validation demonstrated acceptable psychometric properties (e.g., internal consistency reliability, construct validity) (Morrison & Morrison, 2003). All questions were evaluated using a 5-point scale (1 = Agree, 5 = Disagree). A sample item from the scale is “In today’s tough economic times, tax dollars shouldn’t be used to support gay men’s organizations.” Thus, greater agreement indicated greater homonegativity.

Bem Sex-Role Inventory (BSRI)

We used the 30-item BSRI to assess the degree to which men in our sample identified with masculine and feminine gender roles (Bem, 1981). The scale contained 10 items designed to assess masculinity (e.g., “Assertive”), 10 items assessing femininity (e.g., “Tender”), and 10 neutral items (e.g., “Reliable”). All items were assessed using a 7-point scale (1 = Never true of me, 7 = Always true of me). Greater scores on the masculinity and femininity dimensions indicated greater endorsement of the stereotypic male and female gender roles, respectively. Neutral items were not scored in the current sample but were used as filler items.

Sexual Orientation

We used a multiple-choice question to assess sexual orientation. We simply asked the participants “What sexual orientation do you identify with?” The response options were gay, straight, bisexual, lesbian, or other.

Sexual Role Preference

Sexual role preference was measured using a one-item 5-point scale (“Please indicate your preferred sexual position;” 1 = Always Top, 5 = Always Bottom). Versatile was the midpoint of the scale.

Procedure

We first explained to the participants what it meant to be a top (“a person who penetrates”) or a bottom (“one who receives penetration”). After reading the definition, participants proceeded to the main categorization task. On each trial, the participants were presented with one of the faces from the set and asked to categorize the man as either a “top” or a “bottom.” The faces were randomized within the participants.

Once the participants categorized all 198 faces, they completed the MHS and the BSRI. The participants were then asked to report their sexual orientation and sexual role preference and

were debriefed. All measures demonstrated acceptable internal consistency reliabilities: Cronbach’s α s >0.84.

Statistical Analysis

We analyzed the data using signal detection theory analyses (Macmillan & Creelman, 2005). The faces of men who self-identified as bottoms and were categorized by the participants as bottoms were considered hits whereas the faces of self-identified tops that were categorized as bottoms were considered false alarms. We estimated the accuracy index d' and the independent and orthogonal measure of response bias c , which measures a participant’s general tendency to categorize stimuli in a particular way. Greater d' scores represent greater accuracy whereas positive (negative) c scores indicate participants’ tendency to categorize most targets as tops (bottoms). The nil (0) values for d' and c represent the absence of accuracy and bias, respectively. The scores for measures of homonegativity, masculinity, and femininity were aggregated (averaged) across the items for each participant.

We first aimed to replicate the results of the previous work (Tskhay & Rule, 2013a). Thus, we examined how accurate the men in the sample were at categorizing people according to sexual preferences and whether they had a significant bias towards labeling the men in the images in any particular way. We then continued with our main analysis of interest: examining how self-reported masculinity, femininity, sexual role preference, and homonegativity related to the accuracy and response bias of categorizing men as tops and bottoms.

Results

Replicating the findings of the previous work (Tskhay & Rule, 2013a), participants categorized the faces as tops and bottoms with accuracy that significantly exceeded chance guessing: $M_{d'} = 0.14$, $SD_{d'} = 0.17$; $t(120) = 8.88$, $p < .001$, $r = .63$. That is, participants categorized approximately 80 % of tops and bottoms to their respective categories (as calculated using the binomial effect-size display) (Rosenthal & Rosnow, 2008). Furthermore, we found that participants more often categorized men as tops rather than as bottoms, consistent with traditional gender roles and replicating the previous effects found for heterosexual participants in Tskhay and Rule (2013a): $M_c = 0.11$, $SD_c = 0.36$; $t(120) = 3.33$, $p = .001$, $r = .29$. In other words, the gay male participants categorized most of the faces they saw as tops, as heterosexuals had in previous work.

Comparing these effects directly to the findings of Tskhay and Rule (2013a), we observed little difference in accuracy between heterosexual participants ($M_{d'} = 0.09$, $SD_{d'} = 0.20$) and men who have sex with men: $t(141) = 1.11$, $r = .09$. However, the heterosexual participants ($M_c = 0.34$, $SD_c = 0.42$) in the previously published study were slightly more

Table 1 Correlations between the individual differences variables with the hit rate (HR), false alarm rate (FAR), accuracy (d'), and response bias (c) in categorizing men as tops and bottoms. $N = 113$

Variable	HR	FAR	d'	c
Sexual role preference	-.03	-.15	.22*	.08
Masculinity	.19*	.18*	.03	-.19*
Femininity	.10	.14	-.06	-.14
Homonegativity	-.08	-.11	.04	.14

Note. * $p < .05$

biased to categorize the targets as tops: $t(141) = 2.41, p = .02, r = .20$.

Analyses of the relationships between participants' categorization scores and the individual difference measures revealed that perceivers' accuracy was not related to homonegativity, masculinity, or femininity (Table 1).² We did find a significant positive association between sexual role preference and accuracy. Men who self-identified as receptive partners (bottoms) were more accurate at discerning tops from bottoms whereas self-identified tops were less accurate. This relationship remained significant even after controlling for masculinity, femininity, and sexual role preferences, $\beta = 0.25, t(108) = 2.56, p = .01$. No other individual difference measures predicted accurate perceptions of role preferences: all $ps > 0.32$.

Examining response bias, we found that masculinity (but not femininity, homonegativity, or sexual role preference) predicted the tendency to label men as tops versus bottoms. More masculine men were more likely to categorize the men in the pictures as bottoms and less masculine men were more likely to categorize them as tops. Importantly, even after controlling for femininity, sexual role preference, and homonegativity, the relationship between masculinity and response bias remained negative and marginally significant: $\beta = -0.18, t(108) = 1.85, p = .06$. No other effects emerged: all $ps > 0.14$.³

Discussion

Men who have sex with men discerned the sexual role preferences (top versus bottom) of gay men with accuracy that exceeded chance guessing. Previous research reported that heterosexual participants were able to distinguish gay male tops and bottoms significantly better than chance; the current work extended this to a participant sample of men who have sex with

men. These findings contribute to the body of research examining perceptions of sexual preferences and other perceptually-ambiguous dimensions of social groups (Rieger, Linsenmeier, Gygax, Garcia, & Bailey, 2010; Rule et al., 2011; Tskhay & Rule, 2013a, b).

Despite sharing in the effects for accuracy reported previously, men in our sample exhibited a categorization bias similar to heterosexuals in prior research. That is, they were more likely to attribute gender-congruent "top" roles to the targets. Importantly, we found a relationship between participants' self-reported level of masculinity and response bias. Men who expressed greater masculinity in the self-reports showed a bias to categorize others as bottom whereas men who were less masculine showed a bias to categorize others as tops. This pattern suggests that more masculine men may see other men as less masculine (Carballo-Diéguez et al., 2004). Participants' sexual role preferences were not related to their response biases in categorization. Thus, although men might look for sexually compatible partners, this compatibility can be a result of the participants' perceptions of masculinity.

Furthermore, we found that men who self-identified as bottoms during intercourse were more accurate at discerning sexual preferences. Given that bottoms are regarded as lower in status than tops (Carballo-Diéguez et al., 2004; Kippax & Smith, 2001), and that several studies have shown that individuals belonging to lower-status groups are more sensitive to a variety of nonverbal cues (e.g., Kraus, Côté, & Keltner, 2010; but see also Hall, Rosip, Smith LeBeau, Horgan, & Carter [2006]), bottoms may have achieved greater accuracy in the present work as a function of their lower status. Alternatively, people lower (versus higher) in prejudice have been found to be more accurate when making person inferences (as in the case of anti-Semitism) (Andrzejewski, Hall, & Salib, 2009). Along these lines, we found that men who identified more strongly with being a bottom scored marginally lower on the homonegativity measure (prejudice towards gay men). Thus, the greater accuracy of bottoms could be a function of homonegativity. The effect between sexual role preference and accuracy, however, remained statistically significant even after we controlled for self-reported homonegativity. Thus, homonegativity did not explain the connection between sexual role preferences and accuracy.

One possible explanation for the differences in accuracy between masculine and feminine men in perceiving sexual role preference may be the effect of dominance. Masculinity and dominance are closely related concepts: both have links to testosterone (Archer, 1991; Mazur & Booth, 1998; Penton-Voak & Chen, 2004) and individuals with masculine physical traits are perceived as more dominant (Feinberg et al., 2006; Perrett et al., 1998). Recent research demonstrated that men scoring high on dominance scales were less likely to perceive other men as dominant, whereas men scoring low in dominance were more likely to rate other men as dominant (Watkins et al., 2010a, 2010b). The insertive partner is considered the masculine, "dominant"

² The hit and the false alarm rates were used in the calculations of accuracy and bias. Thus, we do not focus on the separate effects for these variables in our discussion. However, more masculine people had both greater hit and false alarm rates, suggesting the possibility of a response bias.

³ Because the sample of bisexual men was too small for any statistical inference, we examined gay men as a separate sample and found effects that were similar in magnitude and direction. All patterns of statistical significance were the same.

partner in a sexual relationship whereas the receptive partner occupies the feminine, “submissive” role (e.g., Taywaditep, 2002). It is therefore possible that masculine men’s bias to rate others as receptive was a function of having lower sensitivity to cues of masculinity and dominance in other men whereas receptive partners were more cognizant of such cues. Thus, the current study suggests that the effect of an individual’s own dominance in perceiving the dominance of others may extend to a parallel effect for accuracy in perceiving sexual role preferences.

More generally, the current findings speak to the influence of stereotypic gender roles on men’s perceptions of sexual role preferences. Men’s perceptions seem to be directly affected by their own identification with traditional gender roles such that masculine men may see others through the lens of their own masculinity by which they use their own level of masculinity as a baseline for evaluating other men. Importantly, these influences on perception may not be specific to the sexual relationships of men who have sex with men. Rather, people may generally rely on masculinity and femininity when choosing romantic partners (Carballo-Diéguez et al., 2004; Tskhay & Rule, 2013a). Indeed, testosterone is linked to physical masculinity, sexual desire, and strengthened preferences for femininity among heterosexual men (Dabbs & Mallinger, 1999; Penton-Voak & Chen, 2004; Welling et al., 2008), thereby suggesting a common endocrinological basis for masculine traits and sexual preferences.

Like other person perception studies, the current investigation was not without limitations. Although the targets used as stimuli had self-identified as tops and bottoms, they were downloaded from publicly-available online dating websites. Thus, it is possible that men could have advertised themselves as preferring a sexual role that was opposite of their actual preference. Although this is conceivable, it is unlikely, as previous research has suggested that only a minority of tops and bottoms assume the converse role and with low frequency (Moskowitz et al., 2008). Moreover, other research has found that people are generally rather honest in their personal advertisements (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). Conversely, it could also be that men posted photos intended to make their sexual preference obvious to viewers. Tilting the head back and protruding the jaw forward increases perceptions of masculine traits in facial photographs (Mignault & Chaudhuri, 2003); thus, conveyance of masculinity may have occurred via head tilt. Such risks are inherent when reducing constraints on images in favor of more ecologically valid stimuli. It should be noted, however, that all stimuli were selected by hypothesis-blind research assistants who were instructed to choose images wherein the photographed individual was staring directly into the camera, which should have reduced the likelihood of any effects of head tilt. Despite this, there may be subtle facial signals that influence both the appearance of masculinity and the perception of an individual’s preferred sexual role. Further studies examining the relative roles of facial masculinity and social signals of masculinity (e.g., head

tilt, facial expressions) in forming impressions of sexual preference with more standardized stimuli would help to address the present effects.

Another limitation of this research is that the current sample of men who have sex with men contained 14 bisexuals, a sample too small to provide any reliable separate estimates of differences based on variation among non-heterosexual perceivers. Bisexuals may have more complex sexual preferences, as they can fluctuate in having male versus female partners. It is possible that bisexuals may have more flexible sexual role preferences than gay men and that this variance may be mediated by the masculinity of the partner (Carballo-Diéguez et al., 2004). For instance, bisexual men may function as tops with female partners but as bottoms with male partners. Thus, it may be prudent for future research to separately examine bisexuals, as well as gay men who identify as versatile, to see whether there may be any reliable differences in their perceptions of others’ sexual role preferences.

In sum, the current research demonstrated that perceptions of sexual preferences of gay men by men who have sex with men are accurate. Furthermore, we found that gay men categorized others in a gender-congruent way, similar to the behavior of heterosexual participants tested in previous work. Importantly, we found that more masculine perceivers were biased to perceive men as bottoms. This suggests that individual differences in masculinity may influence person perception by providing a baseline for social judgment.

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