# STUDYING GAY AND STRAIGHT MALES' IMPLICT GENDER ATTITUDES TO UNDERSTAND PREVIOUSLY FOUND GENDER DIFFERENCES IN IMPLICIT IN-GROUP BIAS

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## ABSTRACT

*Previous research shows that men overall, in contrast to women, do not show a typical implicit in-group preference. One proposed explanation is greater interest in sex among males. If so, then gay males should show an implicit preference for males whereas straight males should prefer females. We tested this hypothesis using a modified version of the Brief Implicit Association Test on 38 gay and 65 straight males. The hypothesis was supported. As the majority of participants in previous studies on implicit gender attitudes are expected to be straight, this could contribute to the low implicit in-group bias among males.*

## INTRODUCTION

In-group bias, the preference for one's own group, is found to be a general effect. The strength of the effect depends on several factors such as status, legitimacy and the permeability of the group (Bettencourt, Dorr, Charlton, & Hume, 2000). In-group bias is often found at the implicit level, especially among members of high-status groups (Axt, 2015; Nosek, Greenwald, Banaji, 2005; Rudman, Feinberg, & Fairchild, 2002). Interestingly, several studies have found that the high-status group of men does not show an implicit preference for men over women, they typically respond in favor of neither gender (Dunham, Baron, & Banaji, 2015; Nosek & Banaji, 2001; Rudman & Goodwin, 2004), while women overall prefer females (Nosek & Banaji, 2001; Greenwald et al., 2002). Using the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) Rudman and Goodwin (2004) found that women had a 4.5 times stronger in-group bias than men. In some cases, men even respond in favor of women, e.g. if the women has an equal or subordinate status (Richeson & Ambady, 2001).

Several explanations have been proposed in the literature for the lack of implicit in-group bias among men. One possible explanation for men's intergroup attitudes is maternal bonding, which takes into account that children usually spend more time with the mother and therefore tend to favor their mother over the father (Rudman & Goodwin, 2004). This may be important because many implicit attitudes may be formed through early experiences in the childhood (Rudman, 2004; Skowronski & Lawrence, 2001). Accordingly, Dunham et al. (2015) found that men´s gender attitudes change over their lifespan; while 5-year old boys still prefer their own gender, adult men tend to show stronger positive implicit attitudes toward women (Dunham et al., 2015). Perceived threat and stronger association of men with violence are other possible factors, which could explain men's implicit gender associations (Dunham et al., 2015; Rudman & Goodwin, 2004). As men are usually strongly associated with physical threat (such as violence and aggression), men may prefer the less-threatening gender women (Rudman & Goodwin, 2004).

One factor explaining the differences in implicit gender attitudes among men and women could be sexuality. There are gender differences in regard to which stimuli (female or male) cause sexual arousal. While heterosexual women in general tend to be aroused by pictures of men and women, heterosexual men are usually solely aroused by pictures of women (Chivers, Seto, & Blanchard, 2007). Other general differences between men and women seem to be on which behavior they are focused on (e.g. on copulation or a larger scope of activities) and which type of sexual activity arouses them most (Fisher, Aron, Mashek, & Brown, 2002). Sex drive, defined as the strength of motivation for sex, is found to be either more constant (Fisher et al., 2002) or generally stronger (Baumeister, 2000; Baumeister, Catanese, & Vohs, 2001; Peplau, 2003) in men than in women, which could explain why (heterosexual) men do not favor men on implicit associations and why (heterosexual) women do not show pro-male bias. Liking sex was, in Rudman and Goodwin's (2004) study, a predictor of in-group bias among sexually experienced men. However, the sexual explanations (such as liking sex or number of sexual encounters) would not explain a man's lack of in-group bias if this man were gay. So, in the present study, we test whether sexual orientation (gay or straight) is related to implicit gender attitudes among men. In accordance with a sex drive explanation, we expect straight males to show a stronger implicit preference for females than males compared to gay men.

## METHOD

### Participants

The participants (German gay and straight men) were invited through snowball sampling, mailing lists, notice boards and interest groups (e.g. internet forums). One hundred and three German men, thereof 38 self-reported to be gay and 65 to be straight, participated in this study. All were between 15 and 50 years old (gay men: $M_{Age} = 24.92$, $SD = 7.30$; straight men: $M_{Age} = 27.66$, $SD = 7.44$) and most of them had finished high school (40%) or had a university degree such as a Bachelor (23 %) or Master/Diploma (37 %).

### Materials and Procedure

Using the bidimensional attitude model (De Liver, van der Pligt, & Wigboldus, 2007), we considered positive and negative attitudes separately by using a modified version of the Brief

Implicit Association test (BIAT; Sriram & Greenwald, 2009) with positive words as the focal stimulus category and neutral words as the non-focal category. We chose the neutral non-focal category in order to assess positive associations without involving negative associations in the "*other*" category (negative associations would traditionally be the non-focal category in a BIAT). In the two combined-task blocks, one with each focal category, we asked participants to focus on *positive* words and the target *female* (respectively on *positive* words and the target *male)*. The response key "E" corresponded to the focal category and "I" to *other*. Each block consisted of 20 trials. Words and pictures were used as stimuli. 5 gender-neutral words for each valence (*positive, neutral*) were used. Some of the chosen words were previously used in similar tests (Rothermund & Wentura, 2001) others were picked from a pre-tested list rated on valence. Words with approximately the same word length and words with the gender-neutral article "das" were preferred. Eight words of each category (*positive, neutral, negative*) were pretested on 30 Germans on valence (from *negative -3* to *positive +3*) and gender (from *-3 male* to *3 female*). The pictures of women and men had a comparable average level of attractiveness, mood and femininity/masculinity (for a list of the chosen words and pictures, see Appendix A and B). The order of the stimuli in the BIAT was counterbalanced, as advised by Sriram & Greenwald (2009). Between block correlation was $r = .21, p = .02$ [1].

To access explicit attitudes toward the gender groups, participants were asked to self-report how positively they felt toward women and men on a scale from 1 = *neutral* to 7 = *very positive*. Moreover, two items measured the identification with the two groups (e.g. to what extent do you identify with men overall, on a scale from 1 = *no identification at all* to 7 = *strongly identify*) and two items measured sexual attraction to the two groups (e.g. please rate how sexually attracted you feel towards women, from 1 = *not sexually attracted at all* to 7 = *strongly sexually attracted*). Demographics, including the sexual orientation were accessed as well (What is your sexual orientation? Participants could choose between the labels *homosexual, heterosexual, bisexual, asexual* and *other*).

Participants were told that participation was voluntary and that they would take part in an online reaction test about implicit gender attitudes. Finally, participants were able to note their e-mail-address in order to receive a notification with the results (and thereby a debriefing). The entire test took about 15 minutes to complete.

## RESULTS

### Scoring Procedure

The response latencies of error trials were replaced by the average response latency of all trials longer than 600 ms (Greenwald, Nosek, & Banaji, 2003). Moreover, the recommendations for scoring practice of the BIAT given by Nosek et al. (2014) were followed, with the exception that the first four trials of each block were retained. D-scores were calculated [2] (Nosek et al., 2014), with a higher D-score indicating a preference for women compared to men.

### Participants' Sexual Orientation

We based the categorization of the participants' sexual orientation on their self-report, which was strongly related to sexual attraction. A paired-samples *t*-test showed that self-reported gay men were more attracted to men ($M = 6.54$, $SD = 0.96$) than to women ($M = 1.62$, $SD = 0.95$), $t$ (36) = (-17.21, $p < .001$. The mean difference (-4.92, 95% CI [-5.50, -4.34]) was large (eta-squared = .89). Straight men reported to be more strongly attracted to women ($M = 6.42$, $SD = 0.75$) than to men ($M = 1.65$, $SD = 0.91$), $t$ (64) = 36.67, $p < .001$. The mean difference (4.77, 95% CI [4.51, 5.03]) was large (eta-squared = .95). An independent samples *t*-test was conducted to compare the identification with the group of men for straight and gay men. There was no difference between scores for gay men ($M = 5.63$, $SD = 1.10$) and straight men ($M = 5.27$, $SD = 1.26$, $t$ (99) = 1.46, $p = .15$. The magnitude of the differences in the means (mean difference = 0.36, 95% CI [-0.13, 0.85])) was small (eta squared = .02).

## Implicit Gender Attitudes

To test whether sexual orientation interacts with implicit gender attitudes, we conducted an independent-samples *t*-test on the D-scores obtained in the *positive-neutral* BIAT. There was a significant difference in D-scores between gay men ($M = -0.16$, $SD = 0.38$) and straight men ($M = 0.18$, $SD = 0.35$; $t$ (101) = -4.53, $p < .001$). The magnitude of the differences in the means (mean difference = -0.34, 95% CI [-0.48, -0.19]) was large (eta-squared = .17). The difference was in the expected direction. In order to further explore the results, we conducted a separate analysis for the gay men, where the responses towards *male* and *positive* were compared to the responses towards *female* and *positive*. The response latencies were log-transformed and entered in a paired-samples *t*-test analysis, where lower scores indicate faster responses (stronger associations). The results showed that gay men responded faster to *male* and *positive* ($M = 6.77$, $SD = 0.25$) compared to *female* and *positive* ($M = 6.84$, $SD = 0.28$; $t$ (37) = -2.87, $p = .01$). This means that the gay men had a significantly stronger positive implicit attitude toward male targets than female targets. The magnitude of the differences in the means (mean difference = 0.07, 95% CI [0.21, 0.13]) was large (eta-squared = .18). We conducted a similar analysis for the straight men group, and found the pattern to be opposite to that of the gay men. Among straight men, responses were faster to *female* and *positive* ($M = 6.76$, $SD = 0.26$) than *male* and *positive* ($M = 6.85$, $SD = 0.27$); $t$ (64) = -3.93, $p < .001$). This means that straight men had a significantly stronger positive implicit attitude toward females than males. The magnitude of the differences in the means (mean difference = -0.09, 95% CI [-0.14, -0.04]) was large (eta-squared = .19). To conclude, the results support the hypothesis.

## Explicit Attitudes

In order to compare the participants' explicit attitudes toward both genders, paired-samples *t*-tests were performed on the attitude items. Higher scores reflect a more positive attitude. For gay men, there was a near- significant difference in positive explicit attitude toward men ($M = 4.89$, $SD = 1.68$) compared to women ($M = 4.43$, $SD = 1.74$; $t$ (36) = -1.82, $p = .08$). The magnitude of the differences in the means (mean difference = -0.46, 95% CI [-0.97, 0.53]) was moderate (eta-squared = .08). Considering the straight men and their positive explicit attitude, there was a significant difference in positive explicit attitude toward men ($M = 3.85$, $SD = 1.90$) and toward women ($M = 5.49$, $SD = 1.75$; $t$ (60) = 7.12, $p < .001$.). The magnitude of the differences in the means (mean difference = 1.8, 95% CI [1.18, 2.10]) was large (eta-squared = .46). Taken

together, the straight men show a strong explicit preference for female compared to male, whereas the gay men show a more modest explicit preference for male compared to female.

## DISCUSSION

Previous research has found that men typically do not show in-group bias when it comes to implicit gender attitudes (e.g. Dunham et al., 2015). We expected this effect to be related to people's sexual orientation. The minority group of gay men had, as hypothesized, stronger positive implicit attitudes toward males than females. Straight men did not show a positive implicit in-group bias but rather preferred females over males. Thus, our results suggest that implicit gender attitudes among males may depend on their sexual orientation. The previously found effect that men overall show no implicit preference for their own gender group may therefore be partly accounted for by the fact that a majority of the participants was expected to be straight.

Our results are in line with Rudman and Goodwin's (2004) finding that sexual experience may be a factor that influences males' implicit gender attitudes. In their study, only men who reported high sexual experience showed an implicit preference for women, while men low in sexual experience did not show this preference. Rudman and Goodwin speculate that the sexually inexperienced men in their study may be frustrated or gay. Our study tests this claim more directly, and the results confirm that males' implicit gender attitudes differ according to sexual orientation. Moreover, our findings could be strengthened with Dunham et al. (2015) who found that men´s gender attitudes change over their lifespan.

This leads to the question of why women overall do not show a positive implicit attitude toward males. If sexual attraction is an important factor in implicit gender attitudes, then one might expect straight women (who is expected to be the majority group in previous studies) to show a pro-male bias. Possible explanations for women's pro-female bias could be that they usually have different shapes of sex drive than men or that they perceive men more strongly with physical threat (Baumeister et al., 2001; Harman, Herman, Nolan, & Wallen, 2004; Ostovich & Sabini, 2004; Rudman & Goodwin, 2004). A combination of both factors or a combination of other factors, which need to be explored in future research, could contribute to the observed effect. In any case, it would be interesting to compare gay and straight women's implicit gender attitudes, to further explore the role of sexual orientation on implicit gender attitudes.

Despite the fact that men are often perceived explicitly as more competent (Ebert, Steffens, & Kroth, 2014), straight men implicitly preferred women over men. A possible explanation is ambivalent sexism theory, which explains that men judge women in general positively, but in specific contexts they are perceived negatively (e.g. the negative attitude would be ascribed to women at their workplace; Dunham et al., 2015). In the present study, no particular context was highlighted, so we can assume that the participants showed a more general reaction in terms of the gender groups.

Concerning explicit and implicit gender attitudes between the participants, gay males showed a somewhat more positive explicit attitude towards males than females, while they implicitly preferred males. Straight males showed a stronger explicit preference for females than males, and also showed this preference on the implicit measure. However, it is worth noting that the explicit gender attitudes were measured with only one item for each target group, and a larger scale should be included in future research in order to assess explicit attitudes in a more reliable and valid manner.

**Limitations and Future Directions**

A limitation of our study is that the comparison of our results with previous research is not straightforward as we used a modified version of the BIAT. While the modified BIAT has the advantage that it measures positive attitudes separately, more research is needed to establish its psychometric properties. Another limitation is the relatively modest sample size in this study, which is not unusual considering that specific groups of participants where targeted. Future studies should aim to replicate the results with a larger sample, as well as in other cultures, to determine external validity. Future research should also further examine group identification, for instance with which group the gay participants identified (group of all men or group of gay men) and which concept they activated when doing the test (e.g. men, gay men or straight men), and how this may influence implicit intergroup attitudes.

**Conclusion**

Previous research has identified a pattern where women tend to show an implicit preference for females over males, whereas men tend to show either no preference or a preference for women. Several explanations have been suggested in the literature, among them sexual preferences. The results of this study are in line with the explanation, where gay men show an implicit preference for males over females, whereas straight men show a preference for females over males. The results of this study represent another step towards a better understanding of gender attitudes.

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**ENDNOTES**

[1] Our study also consisted of a second BIAT with negative words as the focal category and neutral words as the non-focal category. However, in line with current research (Nosek et al., 2014; Sriram & Greenwald, 2009) this test was not reliable and will be therefore not presented. Between block correlation was $r = .10$, $p = .23$.

[2] The D-Score is the difference between the means of the response latencies in the conditions divided by the standard deviation across the conditions (for details see Nosek et al. 2014)

## APPENDIX A

*Summary of Correlations for Implicit and Explicit Attitudes (Positive and Negative) and Attraction for Straight Men*

| Measure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Positive IA | – | | | |
| Positive EA | .09 | – | | |
| Attraction Women | -.11 | -.03 | – | |
| Attraction Men | .01 | -.19 | .17 | – |

*Note.* Correlations for straight men (*n* = 69). 1 = d-score of the *positive* BIAT; 2 = positive explicit attitude; 3 = sexual attraction toward women; 4= sexual attraction toward men.

* *p* < .05. ** *p* < .01.

## APPENDIX B

*Summary of Correlations for Implicit and Explicit Attitudes (Positive and Negative) and Attraction for Gay Men*

| Measure | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Positive IA | – | | | |
| Positive EA | .04 | – | | |
| Attraction Women | .06 | .36* | – | |
| Attraction Men | .11 | -.27 | -.65** | – |

*Note.* Correlations for gay men (*n* = 37). 1 = d-score of the *positive* BIAT; 2 = positive explicit attitude; 3 = sexual attraction toward women; 4= sexual attraction toward men.

* *p* < .05. ** *p* < .01.

## APPENDIX C

*Selected Words and the Mean of Their Valence and Gender (Standard Deviation in Parentheses)*

| Word Valence | Used Words | Valence | Gender |
|---|---|---|---|
| Positive | Paradies, Glück, Humor, Sommer, Erfolg | 2.41 (0.22) | 0.07 (0.45) |
| Neutral | Kuvert, Areal, Finger, Papier, Gabel | 0.24 (0.11) | - 0.01 (0.21) |
| Negative | Verlust, Angst, Elend, Schmerz, Misere | - 2.11 (0.28) | 0.01 (0.05) |

*Note.* Valence= scale ranging from -3 (*negative*) to 3 (*positive*). Gender = scale ranging from -3 (*male*) to 3 (*female*).

**APPENDIX D**

Characteristics of Pictures (Mean of Attractiveness, Mood and Gender) Grouped by Sex (Standard Deviation in Parentheses)

| Sex | Attractiveness | Mood | Gender |
|---|---|---|---|
| Female | 0.22 (1.38) | 0.16 (1.5) | 1.81 (0.98) |
| Male | - 0.16 (1.16) | 0.51 (1.61) | - 1.68 (1.25) |

*Note.* Attractiveness= scale ranging from -3 (*not attractive*) to 3 (*attractive*). Mood = scale ranging from -3 (*sad*) to 3 (*happy*). Gender = scale ranging from -3 (*male*) to 3 (*female*).

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