

Jellison, M, & G + Study 1

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- (10) sex? C/3, pg 629  
(11) 2 for composite Q'nan } pg 633  
1 for the rest

(12) att (1), pg 632

(13) att (1) pg 632

(14) not (0), pg 632

(15) s-r past (1), pg 633

(16) log (1), pg 633

(17) words (0), pg ~~632~~ 632

(18) om (1), pg 632

(19) 3rd (3)

(20) 7th (1)

(21) 1st (1)

(22) att (2)

(23) counter (3)

(24) same (0)

(25) sam (0)

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error:

put "0" before  
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(26) sd-6

(27) sd-6

(28) 8+cor - pg 633

(29) spec - (2), pg ~~632 + 633~~ 630

(30) spec - (2), pg 632-633

(31) comp - (2.5) - pg 632

(32) non (0) - pg 629

(33) dual (2) - pg 632



# Implicit and Explicit Measures of Sexual Orientation Attitudes: Ingroup Preferences and Related Behaviors and Beliefs Among Gay and Straight Men

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(10) (32)

*The relations among implicit and explicit measures of sexual orientation attitudes and sexual-orientation-related behavior and beliefs among gay men (Study 1) and straight men (Studies 1 and 2) were explored. Study 1 found relations between implicit and explicit measures of sexual orientation attitudes, large differences between gay and straight men on both implicit and explicit measures, and that these measures predicted sexual-orientation-related behaviors among gay men. Also, only straight men exhibited a negative relation between their attitudes toward homosexuality and heterosexuality. Study 2 found that as straight men held more negative attitudes toward homosexuality, they more strongly endorsed the importance of heterosexual identity and of traditional masculine gender roles. These endorsements mediated the negative relation between their attitudes toward heterosexuality and homosexuality. Implications for assessing attitudes toward sexual orientation and their relations for sexual orientation identity are discussed.*

**Keywords:** attitudes; sexual orientation; implicit measures; IAT

Although the value of attitudes has been questioned throughout the years (e.g., Bohner & Schwarz, 2001; Wicker, 1969), its importance in intergroup prejudice remains paramount. Indeed, research has shown that people are more likely to discriminate against group members for whom they have more negative attitudes (e.g., Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, Jackson, Dunton, & Williams, 1995). However, theoretical and measurement issues make establishing links between prejudice and group-relevant behavior complicated. In response to this complexity,

researchers have developed implicit measures of prejudice to complement more traditional, explicit measures of prejudice. The current work explored how implicit and explicit measures of prejudice relate to behaviors and beliefs linked to one's beliefs about social groups by studying attitudes toward sexual orientation among gay and straight men.<sup>1</sup>

When studying prejudiced attitudes, concerns about social desirability or about holding feelings at odds with one's personal standards can reduce the predictive validity of many traditional measures of prejudice (e.g., Dunton & Fazio, 1997; Monteith, 1993). Moreover, it may be the case that some knowledge and experiences that influence group-relevant behavior are simply not available to individuals for self-report (e.g., Nisbett & Wilson, 1977; Wilson, Lindsay, & Schooler, 2000). Thus, many researchers have turned to implicit measures of attitudes to circumvent problems such as social desirability concerns and introspective access.

Implicit measures of attitudes assess automatic evaluations associated with attitude objects that perceivers may not necessarily be aware of, may not realize their influence on overt behavior, or may not be able to control

**Authors' Note:** This research was supported by National Institute of Mental Health Grant MH60645. We thank Russ Fazio for his input on this work. Portions of this work were presented as part of an invited symposium at the fourth annual meeting of the Society for Personality and Social Psychology, Los Angeles, in February 2003. Address correspondence to William A. Jellison, Department of Psychology, Michigan State University, East Lansing, MI 48824; e-mail: jellison@msu.edu.

PSPB, Vol. 30 No. 5, May 2004 629-642

DOI: 10.1177/0146167203262076

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sexuality. In addition, because straight men's attitudes toward homosexuality may be related to their own sexual and gender identities, it was further hypothesized that only straight men's attitudes toward homosexuality would be negatively related to attitudes toward heterosexuality. Finally, we expected that as gay men's attitudes toward homosexuality were more positive, they should show more sexual-orientation-affirming behaviors. Based on the existent literature (e.g., Dovidio et al., 1997; McConnell & Leibold, 2001), we thought that explicit measures may be more likely to predict behaviors that are deliberately executed (e.g., disclosure about one's homosexuality), whereas implicit measures may more strongly predict behaviors associated with immersion in the gay community. However, these predictions were exploratory in nature.

#### Method

##### PARTICIPANTS

Data were collected from 79 male participants (36 straight, 43 gay). The straight participants were recruited through undergraduate psychology classes at a large Midwestern university and received course credit for their involvement. Because of the difficulties in obtaining a substantial number of gay participants, the gay men in this study were recruited through flyers and announcements, 20 from around a large Midwestern university and 23 from around the gay community in a large urban area in the Southwestern United States.<sup>2</sup> Gay men received \$10 for their participation. All participants were run in individual sessions.

##### MATERIALS AND PROCEDURES

Each participant was seated in a private workspace where they completed a series of paper-based questionnaires followed by the sexual orientation IAT. Most measures were completed by both gay and straight men (e.g., explicit attitudes toward sexual orientation, a sexual orientation IAT); however, gay men also completed additional measures reporting behaviors associated with being gay.

*Explicit attitudes toward sexual orientation.* All participants completed the Nungesser Homosexual Attitudes Inventory-general subscale (NHAI-general) (Nungesser, 1983) ( $\alpha = .81$ ), a measure consisting of 10 items assessing attitudes toward homosexuality in general (e.g., homosexual lifestyles are not as fulfilling as heterosexual lifestyles).<sup>3</sup> Respondents rated each attitude item on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Responses were reverse coded when applicable and summed such that larger scores reflected more positive attitudes toward homosexuality.

All participants completed semantic differential scales and feeling thermometers to assess attitudes

toward homosexuality and toward heterosexuality separately. Participants rated their own sexual orientation on both the semantic differential scales and feeling thermometer before rating the other sexual orientation. Participants completed 16 semantic differential scales: 8 assessed attitudes toward homosexuality (4 toward people who are homosexual and 4 toward homosexuality in general) and 8 assessed attitudes toward heterosexuality (4 toward people who are heterosexual and 4 toward heterosexuality in general) using good-bad, preferred-nonpreferred, pleasant-unpleasant, and right-wrong. The 8 homosexual and the 8 heterosexual scales were summed separately to produce a gay semantic differential score ( $\alpha = .96$ ) and a straight semantic differential score ( $\alpha = .93$ ), with greater scores reflecting more positive attitudes toward each sexual orientation. On the feeling thermometer, participants described their level of warmth toward homosexuality and toward heterosexuality using a separate scale labeled in 10-degree increments ranging from 0 (*extremely unfavorable*) to 100 (*extremely favorable*).

*Implicit measure of attitudes toward sexual orientation.* A sexual orientation version of the IAT was administered using the computer program and procedures of McConnell and Leibold (2001). In the current study, associations between a sexual orientation dimension (i.e., gay vs. straight) and an evaluative dimension (i.e., positive vs. negative) were assessed. During the IAT task, participants categorized word or image stimuli displayed on a computer monitor. Stimuli used in the current study were 10 adjectives that were positive in valence (e.g., great, wonderful), 10 adjectives that were negative in valence (e.g., rotten, terrible), 10 photographic images of two men engaged in an embrace or romantic pose, and 10 photographic images of a man and a woman engaged in an embrace or romantic pose.

Participants were instructed that they would be making a series of category judgments. On each trial, a target word (24-point black serif text) or an image (5 cm  $\times$  5 cm) was displayed on a gray background in the center of a computer window. Participants categorized each word or image by pressing the "D" or the "K" key on the computer keyboard. During each block, category labels associated with each key were displayed in the upper left and upper right quadrants of the window. Participants were instructed to make their judgments as quickly as possible while avoiding errors. If an incorrect response was given, a red X appeared on the screen, requiring participants to choose the correct option before continuing.

For the IAT, each participant completed a series of seven blocks, each composed of 40 trials. In Blocks 1 and 5, participants judged whether targets were gay or straight couples (key mapping was reversed between blocks), and in Block 2, participants judged whether the

targets were positive or negative adjectives. For half of the participants, Blocks 3 and 4 presented the straight-positive combination trials (i.e., straight or positive vs. gay or negative) and Blocks 6 and 7 presented the gay-positive combination trials (i.e., gay or positive vs. straight or negative). For the remaining participants, Blocks 3 and 4 presented the straight-positive combination trials and Blocks 6 and 7 presented the straight-negative combination trials. Block order and key mapping counterbalancing (e.g., "positive" was associated with the "D" key for half of the participants and with the "K" key for the rest) had no effects on the analyses and thus receives no further discussion. Each of the relevant stimuli was presented twice randomly in Blocks 1, 2, and 5. In each set of combination blocks (i.e., Blocks 3, 4, 6, and 7), words and images were alternated across trials until each word and image had been used twice across the two blocks. Between stimulus trials, a 250-ms gray screen interval was used. Between blocks, participants read instructions for the next block and pressed the space bar when they were ready to begin the next block. After completing the IAT, participants were debriefed and thanked.

*Behavioral questionnaire completed by the gay participants.* Before completing the explicit and implicit attitude measures, the gay men completed other questionnaires as part of a larger battery of measures.<sup>4</sup> These included a modified version of the Environmental Factors Questionnaire (EFQ) (Nungesser, 1983), which assessed a range of behaviors relevant to gay men, including social support and positive reinforcement for being gay, involvement within the gay community, attitudes about being "out," and self-disclosure regarding one's homosexuality.

We assessed two different measures of immersion in the gay community. A measure of positive reinforcement experiences was calculated by summing the number of "yes" responses to 20 events that each participant had personally experienced ( $\alpha = .78$ ; e.g., exposed to material that was positive about being gay, received the support of gay friends for being gay). Larger scores reflected more positive reinforcement. Also, participants' involvement in gay-related activities was assessed by rating the frequency of participating in nine activities on a scale from 1 (*never*) to 7 (*several times a week*), such as reading a local gay publication and attending a gay-affirmative religious fellowship. An overall involvement score was calculated by summing the responses for these items ( $\alpha = .58$ ), with larger scores reflecting more time spent on these activities.

Assessing more self-presentational behaviors, participants completed an item assessing the frequency of time spent trying to pass as straight on a scale from 1 (*always*) to 6 (*never*), which was coded such that larger scores

reflected greater displays of one's homosexuality in public. Also, the amount of disclosure regarding one's sexuality was computed by summing the number of endorsements of people who know about each participant's sexual orientation from a list of 13 groups that included family members, close friends, and others (e.g., coworkers;  $\alpha = .81$ ). Each group was assessed on a scale from 0 (*none of them*) to 4 (*all of them*), and the sum of these items reflected greater disclosure about the participant's homosexuality.

#### Results

##### DATA REDUCTION

*IAT.* A log transformation was applied to each response latency. Extreme latencies were recoded such that responses faster than 300 ms were recoded to 300 ms and responses slower than 3,000 ms were recoded to 3,000 ms, ignoring the accuracy of any individual trial. To be included in the final analyses, an overall correct response rate of at least 90% was required on the combination blocks (McConnell & Leibold, 2001). Six (2 straight, 4 gay) participants were removed from the final analyses for an IAT error rate of greater than 10% of the trials (mean accuracy rate for sample = 97%). IAT effect scores were calculated by subtracting the mean response latency for the second gay-positive combination block from the mean response latency for the second straight-positive combination block. Larger positive IAT effect scores reflected relatively more positive attitudes toward gay men.<sup>5</sup>

*Explicit measures.* Because of the strong positive relation between responses on the gay feeling thermometer and gay semantic differential score ( $r = .84, p < .01$ ) and between the straight feeling thermometer and straight semantic differential score ( $r = .69, p < .01$ ), the feeling thermometers and semantic differential scores for each sexual orientation target were standardized and summed to create a Gay Explicit attitude score and a Straight Explicit attitude score. In addition, an Explicit Difference score was calculated by subtracting the Straight Explicit attitude score from the Gay Explicit attitude score such that larger positive scores reflected relatively more positive attitudes toward gay men than toward straight men. This Explicit Difference score measure was computed to provide an explicit, relativistic sexual orientation attitude measure that is comparable to the IAT effect score, which by its nature is also a relativistic attitude measure.

##### IMPLICIT AND EXPLICIT MEASURES OF SEXUAL ORIENTATION ATTITUDES

First, we explored whether the attitude measures differed as a function of participants' sexual orientation. As displayed in Table 1, a series of independent sample