


# When Perspective Taking Creates a Motivational Threat: The Case of Conservatism, Same-Sex Sexual Behavior, and Anti-Gay Attitudes

Personality and Social Psychology Bulletin  
2016, Vol. 42(6) 738–754  
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DOI: 10.1177/0146167216636633  
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Marlon Mooijman<sup>1</sup> and Chadly Stern<sup>2</sup>

## Abstract

Taking another person's perspective has generally been found to foster *positive* attitudes. We propose that perspective taking can lead to more *negative* attitudes when people imagine an experience that threatens their current motivations and goals. We test this idea by examining how taking the perspective of a male same-sex couple influences political conservatives' attitudes. Across four studies, we demonstrate that (a) the extent to which conservatives (but not liberals) imagine same-sex sexual behavior predicts more anti-gay attitudes, (b) this effect is in part attributable to conservatives experiencing greater disgust, and (c) having conservatives reappraise disgust as not necessarily signaling the threat of disease eliminates this effect. These findings indicate that perspective taking can foster negative attitudes when the content of perspective taking threatens current motivations. The proposed ideas provide unique insights toward developing a more comprehensive framework of how perspective taking shapes attitudes.

## Keywords

perspective taking, anti-gay attitudes, political ideology

Received April 14, 2015; revision accepted February 3, 2016

In a speech given to the United Nations in 2011, President Obama urged Israelis and Palestinians “to stand in each other's shoes” as a way to reduce tension and strive toward peace (Memmott, 2011). Scholars across multiple disciplines have similarly argued that taking another person's perspective and imagining their experiences promotes more positive attitudes toward that person. For example, philosopher Martha Nussbaum (2010) has argued that

It is possible to view another human being as a slimy slug or a piece of revolting trash if one has never made a serious good-faith attempt to see the world through that person's eyes or to experience that person's feelings. (p. xvii)

Similarly, in the context of attitudes toward sexual minorities, legal scholar Charles Fried (2007) has contended that imagining the life of a sexual minority “is morally required of us if we are to respect the humanity and liberty of gay people” (p. 140).

Supporting these scholars' intuitions, empirical research has consistently demonstrated that imagining another person's experiences fosters more positive attitudes toward the person and the social group to which they belong (e.g., Galinsky & Moskowitz, 2000; Shih, Wang, Bucher, &

Stotzer, 2009; Vescio, Sechrist, & Paolucci, 2003). However, some research has also found that perspective taking can lead to greater tension and negative attitudes. For example, perspective taking during an interracial interaction can sometimes lead people to develop more negative attitudes toward outgroup members (Vorauer, Martens, & Sasaki, 2009; Vorauer & Sasaki, 2009), and perspective taking in competitive contexts can lead people to act more selfishly and unethically (Epley, Caruso, & Bazerman, 2006). These findings clash with long-standing theoretical perspectives and empirical findings. However, researchers are yet to develop and directly test a general theoretical framework that can be used to predict and explain when and why perspective taking would lead to more negative attitudes toward others. In the present research, we propose and test such a framework.

<sup>1</sup>University of Southern California, Los Angeles, USA

<sup>2</sup>New York University, New York City, USA

## Corresponding Author:

Marlon Mooijman, Department of Psychology, University of Southern California, SGM 501, 3620 South McClintock Ave., Los Angeles, CA 90089-1061, USA.

Email: mooijman@usc.edu

We argue that it is possible to predict when perspective taking will foster negative attitudes by simultaneously considering both (a) the characteristics of the person *who* is doing the perspective taking and (b) the content of *what* a person imagines when they think about another person's experiences. Previous research indicates that perceivers evaluate other people and objects more negatively when they undermine or threaten the perceiver's current motivations and goals (e.g., Fitzsimons & Shah, 2008; Mooijman & van Dijk, 2015). Integrating this work with previous perspective taking research, we argue that the content of what perceivers imagine while perspective taking will lead them to develop more negative attitudes to the extent that the imagined experience threatens their current motivations. We test this idea by examining how perspective taking shapes conservatives' attitudes toward sexual minorities.

### Conservatism and the Behavioral Immune System

Scholars have argued that throughout the course of evolution, humans developed a behavioral immune system that consists of detecting stimuli that are appraised as infectious (e.g., perceiving rotten food), experiencing emotional responses that signal the infectious potential of the stimuli (e.g., feeling disgusted by the rotten food), and in turn avoiding the infectious stimuli (e.g., throwing away the rotten food; Schaller & Park, 2011). Political conservatives (vs. liberals) appear to possess a stronger behavioral immune system and are, therefore, more chronically motivated to avoid (potentially) infectious stimuli (Terrizzi, Shook, & McDaniel, 2013). Consistent with this perspective, conservatives (vs. liberals) report being more sensitive to situations and stimuli that are perceived as disgusting (Inbar, Pizarro, & Bloom, 2009; Terrizzi, Shook, & Ventis, 2010) and also experience stronger physiological responses to pictures of infectious stimuli (Smith, Oxley, Hibbing, Alford, & Hibbing, 2011). As such, conservatives' stronger motivation to avoid contagions is likely to impact how imagining the experiences of social groups associated with disease shapes conservatives' attitudes.

### Gay Men and Disease

One social group that is perceived to be associated with infection and disease is gay men (Filip-Crawford & Neuberg, in press). Gay and bisexual men (i.e., men who have sex with men) accounted for 65% of the total number of people receiving HIV diagnoses in 2013 and 83% of the total number of men receiving syphilis diagnoses in 2014 (Centers for Disease Control and Prevention, 2014, 2015). In addition, same-sex sexual activity between men is commonly described in the media as occurring in places that foster harmful bacteria (e.g., bathrooms) and as involving bodily waste that spreads diseases (e.g., feces; Nussbaum, 1999,

2010). In turn, sexual behavior between men might be inclined to elicit disgust—and more negative attitudes toward gay men—among people who are motivated to avoid infection and disease (Olatunji, 2008).

Integrating these previous areas of research, we tested whether imagining same-sex sexual behavior while perspective taking would threaten conservatives' stronger motivation to avoid infectious disease. We predicted that conservatives who take the perspective of a male same-sex couple would adopt more anti-gay attitudes to the extent that they imagine the men engaging in sexual (vs. nonsexual) behaviors. In addition, we expected that this effect would be explained by greater feelings of disgust among conservatives. Among liberals, however, we predicted that imagining same-sex sexual (vs. nonsexual) behavior would not lead to more disgust or anti-gay attitudes. To examine how broadly perspective taking would shape conservatives' attitudes, in all studies we measured (a) attitudes toward a specific same-sex couple, (b) general attitudes toward gay men and lesbians, and (c) attitudes toward sexual minority rights.

### The Present Research

We examined our predictions in four studies by measuring and experimentally manipulating what participants imagined while perspective taking. In Study 1a, we tested whether thinking about male same-sex sexual behavior would lead to more anti-gay attitudes among conservatives, but not liberals. In Study 1b, we honed in on the role of the perceiver's motivation in shaping when perspective taking fosters negative attitudes. In Study 2, we examined how the content of perspective taking can lead to negative attitudes. In Study 3, we examined whether leading people to perceive their response to perspective taking as not signaling a motivational threat would prevent perspective taking from fostering negative attitudes.

### Study 1a

In our first study, we conducted an initial test of whether people would adopt more negative attitudes to the extent that they imagine an experience that threatens their motivations. We assessed the sexualized nature of participants' thoughts while taking the perspective of a male same-sex couple. We predicted that greater sexualized thoughts while perspective taking would lead to more negative attitudes among conservatives, but not liberals.

### Method

**Participants.** Participants in all studies were paid 70 cents. Two hundred fifty-six heterosexual participants (119 women;  $M_{age} = 33.28$  years) were recruited from Mechanical Turk (Mturk) and included in analyses (see Buhrmester, Kwang, & Gosling, 2011). A power analysis indicated that our

sample size provided approximately 80% power to detect small to medium effect size ( $r \approx .20$ ). All power analyses were conducted using G\*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007).

In all studies, participants were only included in analyses if they passed an attention check and identified as heterosexual. Sixty-one additional participants completed the study but were excluded from analyses either because they failed the attention check (three participants) or did not identify as heterosexual (58 participants).

### Procedure

**Perspective taking manipulation.** All participants were presented with a picture of two males described as being a same-sex couple. The men in the photograph were White and each man had one of his arms draped over the other's shoulder. A more detailed description of the photographs used in all studies can be found in the online Methods document, and the photographs can be obtained upon request from the first author. Participants were randomly assigned to the *perspective taking condition* ( $n = 124$ ) or *control condition* ( $n = 132$ ). Participants in the perspective taking condition were asked to imagine the men's experiences. Participants in the control condition were asked to remain detached. Condition instructions were adapted from previous research (e.g., Galinsky & Moskowitz, 2000).

**Evaluations of the same-sex couple.** When viewing the couple's picture, participants rated how positively they viewed the couple using a 1 (*very negatively*) to 7 (*very positively*) scale. We reverse coded this item so that higher numbers indicated more negative evaluations.

**General attitudes toward gay men and lesbians.** Participants completed the Attitudes Toward Gay Men and Lesbians Scale ( $\alpha = .96$ ), which is commonly used to assess attitudes toward sexual minorities (Herek & Capitano, 1996). Higher responses indicate more negative attitudes.

**Opposition to sexual minority rights.** Participants indicated the extent to which they agreed with legalizing same-sex marriage, legalizing adoption for same-sex couples, extending employment policies to protect people from being fired because of their sexual orientation, and extending hate crime legislation to include sexual orientation ( $\alpha = .85$ ) using a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. All items were reverse coded so that higher scores indicate greater opposition to sexual minority rights.

**Perspective taking manipulation check.** Participants indicated the extent to which they imagined an experience in the couple's life while looking at the couple's photograph using a 1 (*not at all*) to 7 (*very much so*) scale ( $M = 4.19$ ,  $SD = 2.03$ ).

**Imagine sexual behavior.** To assess the sexualized content of participants' thoughts, they responded to the question

"While looking at the photo of the same-sex couple, to what extent did you imagine the couple engaging in sexual behaviors (e.g., holding hands, kissing, having sex)?" using a 1 (*not at all*) to 7 (*very much so*) scale ( $M = 2.96$ ,  $SD = 1.85$ ).

**Political ideology.** Participants were asked "Where on the following scale of political orientation would you place yourself?" from 1 (*extremely liberal*) to 9 (*extremely conservative*;  $M = 4.28$ ,  $SD = 1.81$ ).<sup>1</sup> This single-item measure is commonly used and exhibits strong predictive validity (e.g., Graham, Haidt, & Nosek, 2009).

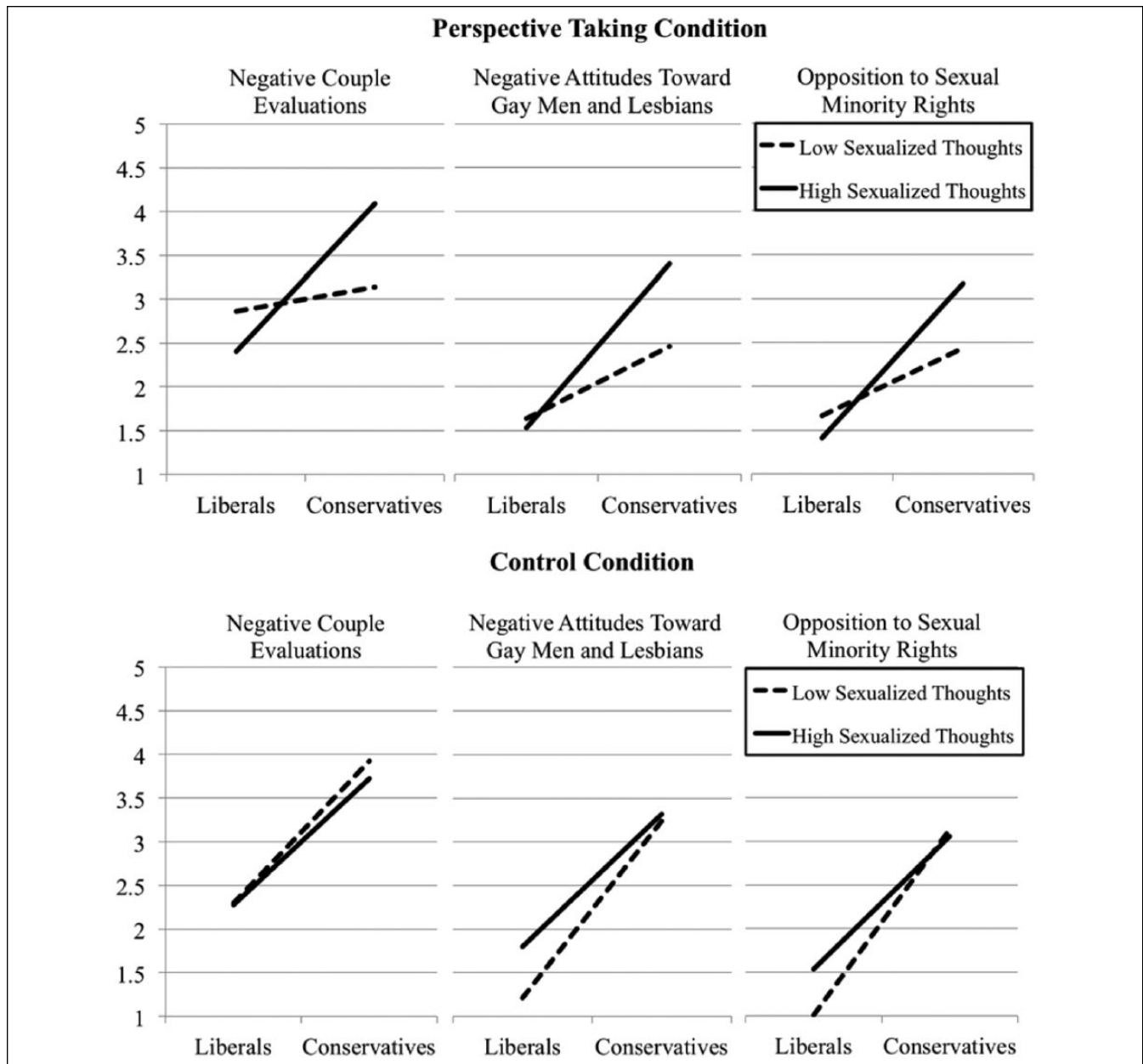
### Results

**Reporting of results.** Effect sizes for predictors in all regression models reported below are semipartial correlations ( $r_{sp}$ ). In addition, all confidence intervals (CIs) reported for regression models are 95% CIs for the unstandardized regression coefficient ( $B$ ).

**Perspective taking manipulation check.** We conducted a multiple regression analysis that included experimental condition (1 = perspective taking condition; -1 = control condition), ideology (grand mean centered), and their interaction as predictors. The extent to which participants imagined the couple's experiences was the dependent variable. Participants in the perspective taking condition ( $M = 4.98$ ,  $SD = 1.65$ ) were more likely to imagine the couple's experiences than were those in the control condition ( $M = 3.45$ ,  $SD = 2.08$ ),  $B = 0.76$ ,  $SE = 0.12$ ,  $t(252) = 6.46$ ,  $p < .001$ ,  $r_{sp} = .38$ , 95% CI = [0.53, 0.99]. Neither the main effect of ideology ( $p = .21$ ) nor the Ideology  $\times$  Perspective Taking interaction were significant ( $p = .85$ ), indicating that liberals and conservatives did not differ in the extent to which they imagined the couple's experiences.

**Imagined sexual content.** We conducted a multiple regression analysis that included the same predictors as in the prior analysis. The extent to which participants imagined the couple's sexual behaviors was the dependent variable. Participants in the perspective taking condition ( $M = 3.20$ ,  $SD = 1.83$ ) were more likely to imagine sexual behaviors than were those in the control condition ( $M = 2.73$ ,  $SD = 1.86$ ),  $B = 0.24$ ,  $SE = 0.12$ ,  $t(252) = 2.04$ ,  $p = .04$ ,  $r_{sp} = .13$ , 95% CI = [0.01, 0.46]. Neither the main effect of ideology ( $p = .78$ ) nor the Ideology  $\times$  Perspective Taking interaction were significant ( $p = .60$ ), indicating that liberals and conservatives did not differ in the extent to which they imagined sexual behaviors.

**Does imagining sexual behavior while perspective taking predict negative attitudes among conservatives?** To examine our main predictions, we conducted multiple regression analyses with the predictors of ideology (grand mean centered), whether participants imagined the couple's sexual behavior (grand mean centered), perspective taking condition (1 = perspective



**Figure 1.** Attitude variables plotted as a function of perspective taking condition, sexualized thoughts (plotted at 1 *SD* below and above the mean), and ideology (plotted at 1 *SD* below and above the mean; Study 1a).

taking condition;  $-1$  = control condition), and all two- and three-way interactions. The dependent variable was different for each analysis. When a three-way interaction was significant, we first decomposed it by examining the Ideology  $\times$  Imagine Sexual Behavior interaction separately for people assigned to the perspective taking and control conditions. If the simple two-way interaction was significant, we further examined the effect of imagining sexual behavior separately for liberals (1 *SD* below the ideology mean) and conservatives (1 *SD* above the ideology mean; Aiken & West, 1991).

Neither the main effect of perspective taking ( $ps \geq .34$ ) nor the Ideology  $\times$  Perspective Taking interaction ( $ps \geq .10$ ) significantly predicted any attitude variable. However, as predicted, the three-way Ideology  $\times$  Imagine Sexual Behavior  $\times$  Perspective Taking interaction (see Figure 1) significantly predicted couple evaluations,  $B = 0.06$ ,  $SE = 0.03$ ,  $t(248) = 2.36$ ,  $p = .02$ ,  $r_{sp} = 0.13$ , 95% CI = [0.01, 0.11]; attitudes toward gay men and lesbians,  $B = 0.06$ ,  $SE = 0.02$ ,  $t(248) = 2.62$ ,  $p = .009$ ,  $r_{sp} = .13$ , 95% CI = [0.01, 0.10]; and attitudes toward sexual minority rights,  $B = 0.06$ ,  $SE = 0.02$ ,  $t(248) = 2.42$ ,  $p = .02$ ,  $r_{sp} = .12$ , 95% CI = [0.01, 0.11].



**Perspective taking condition.** Among participants who took the couple's perspective (Figure 1, top panel), the Ideology  $\times$  Imagine Sexual Behavior interaction was significant when predicting couple evaluations,  $B = 0.11$ ,  $SE = 0.04$ ,  $t(248) = 2.68$ ,  $p = .008$ ,  $r_{sp} = .15$ , 95% CI = [0.03, 0.18]; attitudes toward gay men and lesbians,  $B = 0.08$ ,  $SE = 0.04$ ,  $t(248) = 2.24$ ,  $p = .03$ ,  $r_{sp} = .11$ , 95% CI = [0.01, 0.15]; and attitudes toward sexual minority rights,  $B = 0.07$ ,  $SE = 0.04$ ,  $t(248) = 1.92$ ,  $p = .056$ ,  $r_{sp} = .10$ , 95% CI = [-0.001, 0.15], indicating that perspective taking differentially affected conservatives' and liberals' attitudes depending on what they thought about.

The extent to which conservatives imagined the couple's sexual behaviors when taking the couple's perspective predicted more negative couple evaluations,  $B = 0.26$ ,  $SE = 0.09$ ,  $t(248) = 2.84$ ,  $p = .005$ ,  $r_{sp} = .15$ , 95% CI = [0.08, 0.43]; more negative attitudes toward gay men and lesbians,  $B = 0.25$ ,  $SE = 0.08$ ,  $t(248) = 3.17$ ,  $p = .002$ ,  $r_{sp} = .16$ , 95% CI = [0.10, 0.41]; and greater opposition to sexual minority rights,  $B = 0.20$ ,  $SE = 0.09$ ,  $t(248) = 2.24$ ,  $p = .03$ ,  $r_{sp} = .12$ , 95% CI = [0.02, 0.37]. Liberals' attitudes were unaffected by what they imagined ( $ps \geq .21$ ).

**Control condition.** Among participants assigned to the control (i.e., no perspective taking) condition (Figure 1, bottom panel), the Ideology  $\times$  Imagine Sexual Behavior interaction did not significantly predict the attitude measures ( $ps \geq .14$ ).

**Low sexual imagery.** It is also possible to decompose the three-way interaction by examining the two-way Ideology  $\times$  Perspective Taking interaction among people who had low sexual imagery (1 *SD* below the mean: 1.11) and those who had high sexual imagery (1 *SD* above the mean: 4.81). Decomposing the interaction in this way allowed us to examine whether perspective taking would lead conservatives to develop more positive attitudes toward sexual minorities when they took the couple's perspective and did *not* think about sexual behavior. In other words, we were able to examine whether perspective taking would foster positive attitudes when conservatives do not imagine experiences that threaten their motivations.

Among people who had low sexual imagery, the Ideology  $\times$  Perspective Taking interaction was significant when predicting couple evaluations,  $B = -0.19$ ,  $SE = 0.07$ ,  $t(248) = -2.59$ ,  $p = .01$ ,  $r_{sp} = .14$ , 95% CI = [0.04, 0.33]; attitudes toward gay men and lesbians,  $B = -0.17$ ,  $SE = 0.06$ ,  $t(248) = -2.62$ ,  $p = .009$ ,  $r_{sp} = .13$ , 95% CI = [0.04, 0.29]; and attitudes toward sexual minority rights,  $B = -0.19$ ,  $SE = 0.07$ ,  $t(248) = -2.66$ ,  $p = .008$ ,  $r_{sp} = .14$ , 95% CI = [0.05, 0.32]. Conservatives who had low sexual imagery while imagining the couple's experiences reported more positive attitudes toward the couple,  $B = -0.39$ ,  $SE = 0.17$ ,  $t(248) = -2.29$ ,  $p = .02$ ,  $r_{sp} = .12$ , 95% CI = [0.06, 0.72]; more positive attitudes toward gay men and lesbians,  $B = -0.39$ ,  $SE = 0.15$ ,  $t(248) = -2.58$ ,  $p = .01$ ,  $r_{sp} = .13$ , 95% CI = [0.09, 0.68]; and greater

support for sexual minority rights,  $B = -0.35$ ,  $SE = .17$ ,  $t(248) = -2.09$ ,  $p = .04$ ,  $r_{sp} = .11$ , 95% CI = [0.02, 0.68], than did conservatives who remained detached.

Perspective taking did not significantly impact liberals' couple evaluations ( $p = .11$ ) or attitudes toward gay men and lesbians ( $p = .17$ ). However, liberals who had low sexual imagery while imagining the couple's experiences (vs. remaining detached) reported marginally less support for sexual minority rights,  $B = 0.33$ ,  $SE = 0.17$ ,  $t(248) = 1.91$ ,  $p = .06$ ,  $r_{sp} = .10$ , 95% CI = [-0.01, 0.66]. We return to this finding in the "General Discussion" section.

**High sexual imagery.** Among people who had high sexual imagery, neither the main effect of perspective taking ( $ps \geq .27$ ) nor the Ideology  $\times$  Perspective Taking interaction ( $ps \geq .35$ ) significantly predicted the attitude variables. These findings indicate that imagining an experience that threatened conservatives' motivations prevented perspective taking from fostering positive attitudes.

## Discussion

Study 1a provides initial support for our hypothesis that the content of perspective taking fosters negative attitudes to the extent that it threatens perceivers' motivations. Specifically, thinking about sexual behavior while perspective taking predicted more anti-gay attitudes among conservatives (but not liberals).

## Study 1b

In Study 1b, we more directly examined the role of the perceiver's motivations in why perspective taking could lead to more negative attitudes. Previous research has found that *social* conservatism, rather than *economic* conservatism, is most strongly linked to the behavioral immune system (Terrizzi et al., 2013; Terrizzi et al., 2010). As such, if imagining same-sex sexual behavior fosters anti-gay attitudes among conservatives because it threatens conservatives' motivation to avoid infectious disease, then this effect should occur among social conservatives, but not among economic conservatives. In addition, because religiosity is related to both social conservatism and attitudes toward sexual minorities (Terrizzi et al., 2013), we sought to rule out the possibility that it could account for any observed effects.

## Method

**Participants.** Four hundred thirty-four heterosexual participants (240 women;  $M_{age} = 36.34$  years) were recruited from Mturk and included in analyses. We collected our sample size to possess 80% power to detect a small effect size ( $r \approx .15$ ). Seventy additional participants completed the study but were excluded from analyses either because they failed the attention check (nine participants) or did not identify as heterosexual (61 participants).

### Procedure

**Perspective taking manipulation.** All participants were presented with a picture of two males described as being a same-sex couple. We used a photo of a different couple in this study to ensure that observed results were not specific to the couple used in Study 1a. The men in the photograph were White and one man stood behind the other with his arms draped over the other's shoulders in a hug position. Participants were randomly assigned to the perspective taking condition ( $n = 223$ ) or control condition ( $n = 211$ ), and received the same instructions as in Study 1a for their respective condition.

**Measures.** Evaluations of the couple, attitudes toward gay men and lesbians ( $\alpha = .97$ ), attitudes toward sexual minority rights ( $\alpha = .86$ ), whether participants imagined an experience in the couple's life ( $M = 4.65$ ,  $SD = 1.88$ ), and whether participants imagined the couple's sexual behavior ( $M = 3.00$ ,  $SD = 1.92$ ) were all assessed as in Study 1a.

**Ideology.** Participants reported their social and economic conservatism using 1 (*extremely liberal*) to 9 (*extremely conservative*) scales. Consistent with previous research (e.g., Skitka, Mullen, Griffin, Hutchinson, & Chamberlin, 2002), participants indicated their level of social conservatism in response to the question "In terms of social and cultural issues, how liberal or conservative are you?" ( $M = 4.08$ ,  $SD = 2.31$ ), and indicated their level of economic conservatism in response to the question "In terms of economic issues, how liberal or conservative are you?" ( $M = 5.04$ ,  $SD = 2.28$ ).

**Religiosity.** Consistent with previous research (e.g., La Barbera & Gürhan, 1997), participants reported their religiosity in response to the questions "How religious are you?" "How important is your religious faith?" (both using a scale of 1 = *not at all* to 7 = *very much so*), and "How frequently do you attend religious services?" (1 = *several times a day* to 7 = *never*). We created a composite religiosity score ( $\alpha = .77$ ).

### Results

**Perspective taking manipulation check.** Participants in the perspective taking condition ( $M = 5.29$ ,  $SD = 1.63$ ) were more likely to imagine the couple's experiences than were those in the control condition ( $M = 3.97$ ,  $SD = 1.89$ ),  $t(432) = 7.79$ ,  $p < .001$ ,  $d = .75$ , 95% CI = [0.98, 1.65]. No main effects of social conservatism, economic conservatism, religiosity, or interactions of these variables with condition predicted imagining the couple's experiences ( $ps \geq .25$ ).

**Imagine sexual content.** Social conservatism, economic conservatism, and religiosity were not significantly associated with imagining the couple's sexual behaviors ( $ps \geq .09$ ), and

did not interact with condition to predict imagining sexual behaviors ( $ps \geq .21$ ).

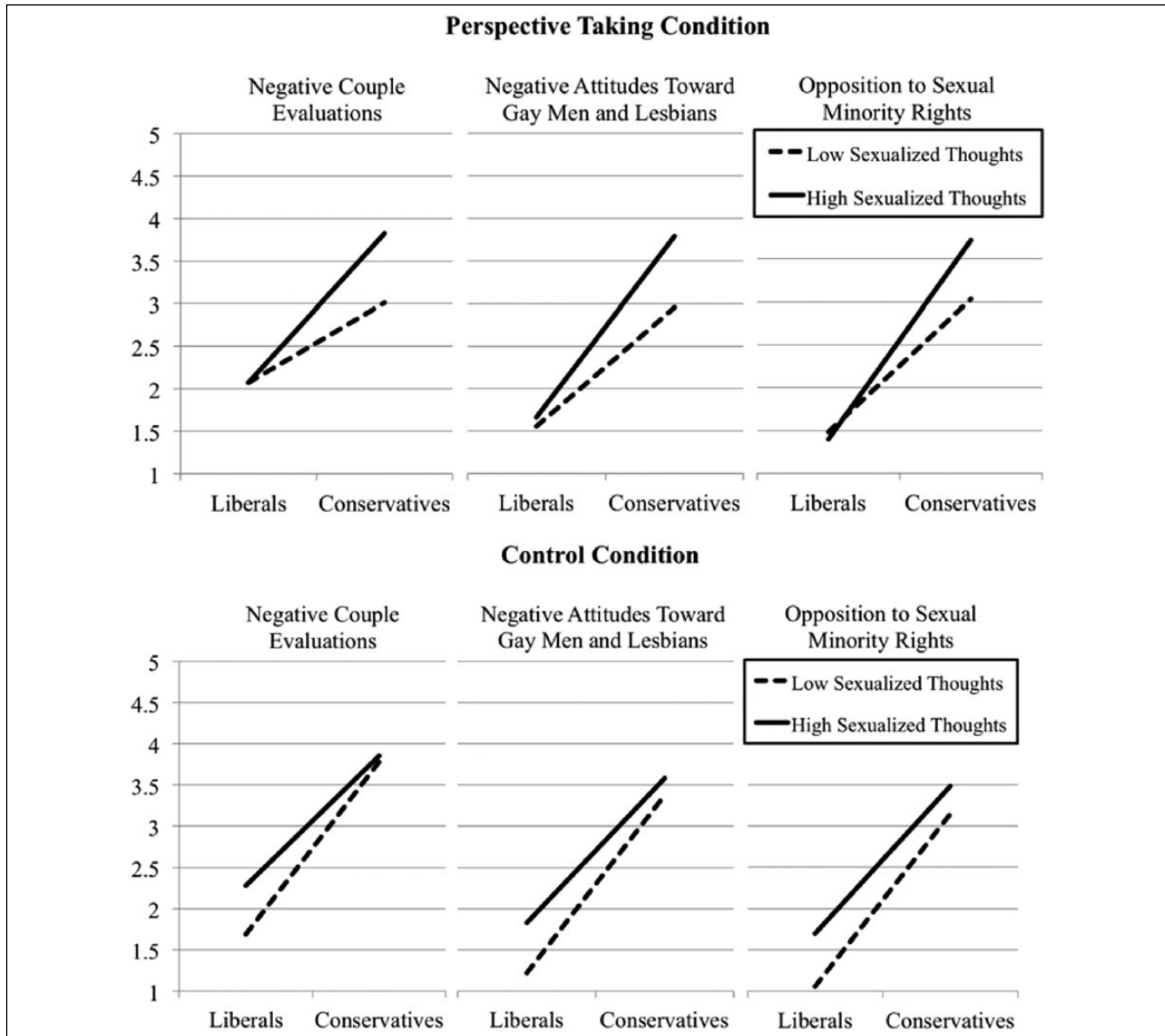
**Does imagining sexual behavior while perspective taking predict negative attitudes among social conservatives?** We utilized the same analytic strategy to assess the effects of perspective taking as in Study 1a, except social ideology was used as the measure of ideology. In addition, statistically adjusting for religiosity does not change any of the results reported below. Consistent with past recommendations (Yzerbyt, Muller, & Judd, 2004), we adjusted for religiosity by including the main effect of religiosity and interactions with imagined sexual behavior and perspective taking condition as predictors (i.e., Religiosity  $\times$  Imagine Sexual Behavior, Religiosity  $\times$  Perspective Taking, and Religiosity  $\times$  Imagine Sexual Behavior  $\times$  Perspective Taking).

The main effect of perspective taking was not significant for any attitude variables ( $ps \geq .25$ ), and the Ideology  $\times$  Perspective Taking interaction was not significant for attitudes toward gay men and lesbians or opposition to sexual minority rights ( $ps \geq .40$ ). The Ideology  $\times$  Perspective Taking interaction was marginally significant for couple evaluations ( $p = .08$ ). Social conservatives who imagined the couple's experiences (vs. remained detached) evaluated the couple more positively ( $p = .04$ ). Perspective taking did not influence social liberals' couple evaluations ( $p = .64$ ).

Importantly, the predicted three-way Ideology  $\times$  Imagine Sexual Behavior  $\times$  Perspective Taking interaction (see Figure 2) was significant when predicting couple evaluations,  $B = 0.04$ ,  $SE = 0.02$ ,  $t(426) = 2.26$ ,  $p = .02$ ,  $r_{sp} = .09$ , 95% CI = [0.004, 0.07]; attitudes toward gay men and lesbians,  $B = 0.03$ ,  $SE = 0.01$ ,  $t(426) = 2.29$ ,  $p = .02$ ,  $r_{sp} = .08$ , 95% CI = [0.004, 0.06]; and attitudes toward sexual minority rights,  $B = 0.03$ ,  $SE = 0.02$ ,  $t(426) = 2.03$ ,  $p = .04$ ,  $r_{sp} = .08$ , 95% CI = [0.001, 0.06].

**Perspective taking condition.** Among participants who took the couple's perspective (Figure 2, top panel), the Ideology  $\times$  Imagine Sexual Behavior interaction was significant when predicting couple evaluations,  $B = 0.05$ ,  $SE = 0.02$ ,  $t(426) = 2.31$ ,  $p = .02$ ,  $r_{sp} = .09$ , 95% CI = [0.07, 0.09]; attitudes toward gay men and lesbians,  $B = 0.04$ ,  $SE = 0.02$ ,  $t(426) = 2.44$ ,  $p = .02$ ,  $r_{sp} = .09$ , 95% CI = [0.01, 0.07]; and attitudes toward sexual minority rights,  $B = 0.04$ ,  $SE = 0.02$ ,  $t(426) = 2.43$ ,  $p = .02$ ,  $r_{sp} = .09$ , 95% CI = [0.01, 0.08], indicating that perspective taking differentially affected social conservatives' and liberals' attitudes depending on what they thought about.

The extent to which social conservatives imagined the couple engaging in sexual behavior when taking the couple's perspective predicted more negative couple evaluations,  $B = 0.21$ ,  $SE = 0.06$ ,  $t(426) = 3.55$ ,  $p < .001$ ,  $r_{sp} = .15$ , 95% CI = [0.03, 0.77]; more negative attitudes toward gay men and lesbians,  $B = .22$ ,  $SE = 0.05$ ,  $t(426) = 4.27$ ,  $p < .001$ ,  $r_{sp} = .16$ , 95% CI = [0.11, 0.32]; and greater opposition to sexual minority rights ( $B = 0.18$ ,  $SE = 0.05$ ,  $t(426) = 3.28$ ,  $p = .001$ ,



**Figure 2.** Attitude variables plotted as a function of perspective taking condition, sexualized thoughts (1 SD below and above the mean), and social ideology (1 SD below and above the mean; Study 1b).

$r_{sp} = .12$ , 95% CI = [0.07, 0.28]. These findings replicate Study 1a. Social liberals' attitudes were unaffected by what they imagined ( $p \geq .63$ ).

**Control condition.** Among participants assigned to the control condition (Figure 2, bottom panel), the Ideology  $\times$  Imagine Sexual Behavior interaction did not significantly predict the attitude measures ( $p \geq .27$ ).

**Low sexual imagery.** As in Study 1a, we next tested whether perspective taking would lead to more positive attitudes among conservatives who had low sexual imagery (i.e., when they did not imagine an experience that threatened their

motivations). We examined the Ideology  $\times$  Perspective Taking interaction among people who had low sexual imagery (1 SD below the mean: 1.08) and those who had high sexual imagery (1 SD above the mean: 4.92). Among people who had low sexual imagery, neither the main effect of perspective taking ( $p = .36$ ) nor the Ideology  $\times$  Perspective Taking interaction ( $p = .11$ ) significantly predicted attitudes toward sexual minority rights. However, replicating Study 1a, the Ideology  $\times$  Perspective Taking interaction significantly predicted couple evaluations,  $B = -0.13$ ,  $SE = 0.04$ ,  $t(426) = -3.07$ ,  $p = .002$ ,  $r_{sp} = .13$ , 95% CI = [0.04, 0.21], and attitudes toward gay men and lesbians,  $B = -0.08$ ,  $SE = 0.03$ ,  $t(426) = -2.40$ ,  $p = .02$ ,  $r_{sp} = .09$ , 95% CI = [0.02, 0.15]. Social

conservatives who had low sexual imagery while imagining the couple's experiences (vs. remaining detached) reported more positive couple evaluations,  $B = -0.39$ ,  $SE = 0.14$ ,  $t(426) = -2.87$ ,  $p = .004$ ,  $r_{sp} = .12$ , 95% CI = [0.11, 0.66], and marginally more positive attitudes toward gay men and lesbians,  $B = -.21$ ,  $SE = 0.11$ ,  $t(426) = -1.87$ ,  $p = .06$ ,  $r_{sp} = .07$ , 95% CI = [0.01, 0.43]. Perspective taking did not significantly impact social liberals' couple evaluations ( $p = .15$ ) or attitudes toward gay men and lesbians ( $p = .13$ ).

**High sexual imagery.** Among people who had high sexual imagery, neither the main effect of perspective taking ( $ps \geq .56$ ) nor the Ideology  $\times$  Perspective Taking interaction ( $ps \geq .17$ ) significantly predicted the attitude variables. These findings replicate Study 1a and indicate that imagining an experience that threatened social conservatives' motivations prevented perspective taking from fostering positive attitudes.

**Does imagining sexual behavior while perspective taking predict negative attitudes among economic conservatives?** The three-way Ideology  $\times$  Imagine Sexual Behavior  $\times$  Perspective Taking interaction did not significantly predict couple evaluations ( $p = .21$ ), attitudes toward gay men and lesbians ( $p = .26$ ), or attitudes toward sexual minority rights ( $p = .66$ ), indicating that thinking about sexual behavior while perspective taking did not differentially change the attitudes of people who are economically liberal and conservative.

**Does imagining sexual behavior while perspective taking predict negative attitudes among religious people?** The three-way Religiosity  $\times$  Imagine Sexual Behavior  $\times$  Perspective Taking interaction was not significant when predicting couple evaluations ( $p = .69$ ), attitudes toward gay men and lesbians ( $p = .26$ ), or attitudes toward sexual minority rights ( $p = .57$ ), indicating that thinking about sexual behavior while perspective taking did not differentially change the attitudes of people who are low and high on religiosity.

## Discussion

Study 1b indicates that imagining same-sex sexual behavior while perspective taking predicts anti-gay attitudes among social conservatives, but not among economic conservatives or people high on religiosity. Because social conservatism has been linked to the behavioral immune system, these findings support our argument that imagining sexual behavior predicts negative attitudes among conservatives because it threatens their motivation to avoid infectious disease.

## Study 2

In Study 2, we sought to directly test whether imagining an experience that threatens perceivers' motivations leads to more negative attitudes. To this end, we experimentally

manipulated whether participants imagined same-sex sexual or nonsexual behavior. If perspective taking fosters negative attitudes when participants imagine an experience that threatens their motivations, then only imagining sexual behavior between men should produce negative attitudes among conservatives.

## Method

**Participants.** Three hundred thirty-six heterosexual participants (174 women;  $M_{age} = 34.21$  years) were recruited from Mturk and included in analyses. We collected a sample size that provided approximately 80% power to detect a small effect ( $r \approx .15$ ). Eighty-six additional participants completed the study but were excluded from analyses either because they failed the attention check (eight participants) or did not identify as heterosexual (78 participants).

## Procedure

**Perspective taking manipulation.** Participants viewed the same photo as in Study 1a, which was described as showing a same-sex couple. Participants were randomly assigned to the *imagine sexual behavior condition* ( $n = 117$ ), *imagine nonsexual behavior condition* ( $n = 108$ ), or *control condition* ( $n = 111$ ). Participants in the imagine sexual behavior condition were asked to imagine the couple engaging in sexual behavior. Participants in the imagine nonsexual behavior condition were asked to imagine the couple grocery shopping. Participants in the control condition were asked to remain detached.

**Attitude variables.** Evaluations of the couple, attitudes toward gay men and lesbians ( $\alpha = .96$ ), and opposition to sexual minority rights ( $\alpha = .86$ ) were assessed as in Study 1a.

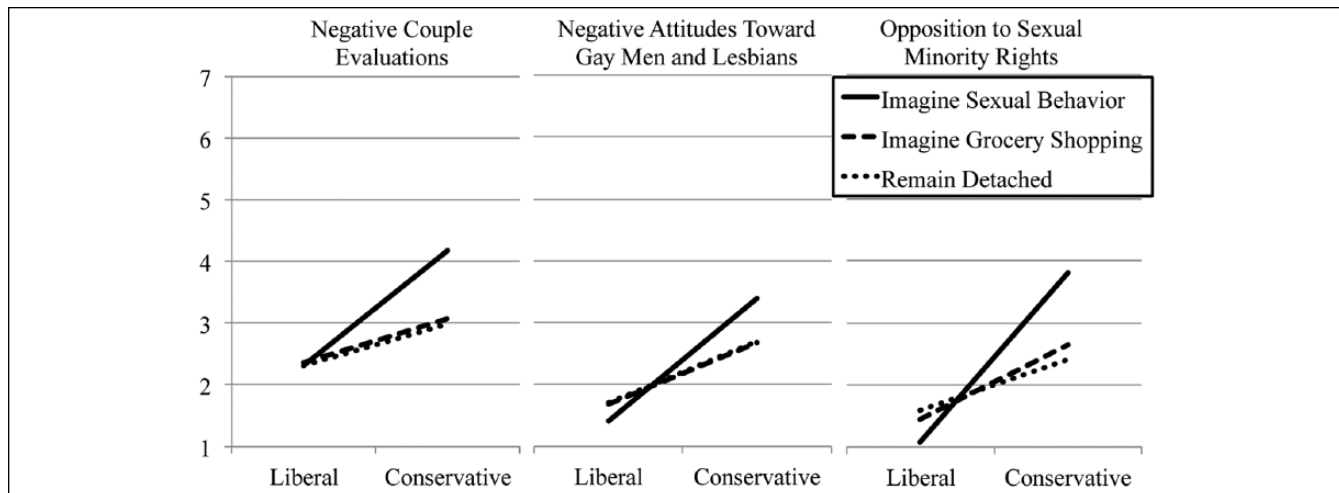
**Manipulation checks.** Whether participants imagined the couple's experiences ( $M = 4.60$ ,  $SD = 1.99$ ) and sexual behavior in particular ( $M = 3.64$ ,  $SD = 2.14$ ) were assessed as in Study 1a.

**Political ideology.** Participants reported their ideology as in Study 1a ( $M = 4.15$ ,  $SD = 1.88$ ).

## Results

**Analytic strategy.** We conducted multiple regression analyses to examine our predictions. Because the perspective taking manipulation contained three levels, we created two orthogonal dummy-coded contrast variables to test for moderation by perspective taking condition (Aiken & West, 1991). We specified the imagine sexual behavior condition as the reference group in both dummy contrasts because our predictions concerned the effect for conservatives in that condition relative to the other two conditions.





**Figure 3.** Attitude variables plotted as a function of perspective taking condition and ideology (1 SD below and above the mean; Study 2).

All initial analyses included the predictors of ideology (grand mean centered), the imagine sexual behavior/imagine grocery shopping contrast, the imagine sexual behavior/control condition contrast, and the two-way interactions between ideology and the contrasts. The dependent variable differed across analyses. For all analyses, we decomposed significant interactions by examining the simple effects of the perspective taking manipulation separately for liberals and conservatives.

**Perspective taking manipulation check.** The imagine sexual behavior/control contrast,  $B = 0.93$ ,  $SE = 0.26$ ,  $t(330) = 3.61$ ,  $p < .001$ ,  $r_{sp} = .19$ , 95% CI = [0.42, 1.43], and the imagine grocery shopping/control contrast,  $B = 1.04$ ,  $SE = 0.26$ ,  $t(330) = 3.99$ ,  $p < .001$ ,  $r_{sp} = .21$ , 95% CI = [0.53, 1.55], were significant. Participants who were asked to imagine the couple's sexual behaviors ( $M = 4.85$ ,  $SD = 1.74$ ) or imagine the couple grocery shopping ( $M = 4.99$ ,  $SD = 1.94$ ) were more likely to imagine the couple's experiences than were participants who were asked to remain detached ( $M = 3.95$ ,  $SD = 2.14$ ). Participants asked to imagine sexual behavior and those asked to imagine grocery shopping thought about the couple's experiences to a similar extent ( $p = .65$ ). In addition, neither the main effect of ideology ( $p = .13$ ) nor the Ideology  $\times$  Contrast interactions were significant ( $ps \geq .19$ ), indicating that liberals and conservatives did not differ in the extent to which they imagined the couple's experiences.

**Imagine sexual behavior check.** The imagine sexual behavior/control contrast,  $B = -2.19$ ,  $SE = 0.26$ ,  $t(330) = -8.53$ ,  $p < .001$ ,  $r_{sp} = .42$ , 95% CI = [-2.69, -1.68], and the imagine sexual behavior/grocery shopping contrast,  $B = -1.74$ ,  $SE = 0.26$ ,  $t(330) = -6.76$ ,  $p < .001$ ,  $r_{sp} = .33$ , 95% CI = [-2.25, -1.23], were significant. Participants asked to imagine the couple's sexual behaviors ( $M = 4.91$ ,  $SD = 1.94$ ) were more likely to imagine sexual behaviors than were participants

who imagined the couple grocery shopping ( $M = 3.19$ ,  $SD = 1.90$ ) or remained detached ( $M = 2.74$ ,  $SD = 1.93$ ). Participants asked to imagine the couple grocery shopping (vs. remain detached) were marginally more likely to imagine sexual behaviors,  $B = 0.45$ ,  $SE = 0.26$ ,  $t(330) = 1.71$ ,  $p = .09$ ,  $r_{sp} = .08$ , 95% CI = [-0.07, 0.96]. In addition, neither the main effect of ideology ( $p = .60$ ) nor the Ideology  $\times$  Contrast interactions were significant ( $ps \geq .17$ ), indicating that liberals and conservatives did not differ in the extent to which they imagined sexual behaviors.

**Does imagining sexual behavior predict negative attitudes among conservatives?** The imagine sexual behavior/imagine grocery shopping contrast and the imagine sexual behavior/control contrast did not significantly predict attitudes toward gay men and lesbians ( $ps \geq .18$ ). The contrasts significantly predicted couple evaluations and opposition to sexual minority rights ( $ps \leq .02$ ). Participants who imagined the couple's sexual behavior (vs. imagining grocery shopping or remaining detached) reported more negative couple evaluations and greater opposition to sexual minority rights.

These main effects were qualified by the predicted Ideology  $\times$  Imagine Sexual Behavior/Imagine Grocery Shopping Contrast (see Figure 3) when predicting couple evaluations,  $B = -0.31$ ,  $SE = 0.10$ ,  $t(330) = -3.05$ ,  $p = .002$ ,  $r_{sp} = .15$ , 95% CI = [-0.51, -0.11]; attitudes toward gay men and lesbians,  $B = -0.26$ ,  $SE = 0.09$ ,  $t(330) = -2.86$ ,  $p = .005$ ,  $r_{sp} = .14$ , 95% CI = [-0.44, -0.08]; and opposition to sexual minority rights,  $B = -0.41$ ,  $SE = 0.10$ ,  $t(330) = -4.29$ ,  $p < .001$ ,  $r_{sp} = .19$ , 95% CI = [-0.59, -0.22]. The Predicted Ideology  $\times$  Imagine Sexual Behavior/Control Contrast (see Figure 3) was also significant when predicting couple evaluations,  $B = -0.32$ ,  $SE = 0.10$ ,  $t(330) = -3.35$ ,  $p = .001$ ,  $r_{sp} = .16$ , 95% CI = [-0.51, -0.13]; attitudes toward gay men and lesbians,  $B = -0.26$ ,  $SE = 0.09$ ,  $t(330) = -3.01$ ,  $p = .003$ ,  $r_{sp} = .14$ , 95% CI = [-0.43, -0.09]; and opposition to sexual

minority rights,  $B = -0.51$ ,  $SE = 0.09$ ,  $t(330) = -5.67$ ,  $p < .001$ ,  $r_{sp} = .25$ , 95% CI =  $[-0.68, -0.33]$ . These interactions indicate that the perspective taking manipulation differentially affected liberals' and conservatives' attitudes.

Conservatives who imagined the couple's sexual behaviors (vs. grocery shopping) reported more negative couple evaluations,  $B = -1.11$ ,  $SE = 0.26$ ,  $t(330) = -4.26$ ,  $p < .001$ ,  $r_{sp} = .21$ , 95% CI =  $[-1.62, -0.60]$ ; more negative attitudes toward gay men and lesbians,  $B = -0.71$ ,  $SE = 0.23$ ,  $t(330) = -3.05$ ,  $p = .002$ ,  $r_{sp} = .15$ , 95% CI =  $[-1.17, -0.25]$ ; and greater opposition to sexual minority rights,  $B = -1.17$ ,  $SE = 0.24$ ,  $t(330) = -4.79$ ,  $p < .001$ ,  $r_{sp} = .21$ , 95% CI =  $[-1.65, -0.69]$ . Conservatives who imagined the couple's sexual behaviors (vs. remained detached) also reported more negative couple evaluations,  $B = -1.20$ ,  $SE = 0.26$ ,  $t(330) = -4.64$ ,  $p < .001$ ,  $r_{sp} = .23$ , 95% CI =  $[-1.71, -0.68]$ ; more negative attitudes toward gay men and lesbians,  $B = -0.68$ ,  $SE = 0.23$ ,  $t(330) = -2.93$ ,  $p = .004$ ,  $r_{sp} = .14$ , 95% CI =  $[-1.13, -0.22]$ ; and greater opposition to sexual minority rights,  $B = -1.40$ ,  $SE = 0.24$ ,  $t(330) = -5.79$ ,  $p < .001$ ,  $r_{sp} = .26$ , 95% CI =  $[-1.88, -0.93]$ . Conservatives who imagined the couple grocery shopping and those who remained detached did not significantly differ on any attitude measures ( $ps \geq .35$ ).

The perspective taking manipulation did not significantly affect liberals' couple evaluations ( $ps \geq .83$ ) or attitudes toward gay men and lesbians ( $ps \geq .20$ ). Interestingly, liberals who imagined the couple's sexual behaviors (vs. remained detached) reported greater support for sexual minority rights,  $B = 0.51$ ,  $SE = 0.24$ ,  $t(330) = 2.12$ ,  $p = .04$ ,  $r_{sp} = .09$ , 95% CI =  $[0.03, 0.98]$ . No other comparisons were significant for liberals' attitudes toward sexual minority rights ( $ps \geq .15$ ).

## Discussion

Study 2 indicates that when participants were instructed to imagine sexual (vs. nonsexual) behavior while perspective taking, conservatives reported more anti-gay attitudes, but liberals did not. Put more generally, these findings indicate that only when conservatives imagined behavior that threatened their motivation to avoid infectious disease did they develop more negative attitudes toward sexual minorities.

## Study 3

We had two main goals in Study 3. First, we examined whether disgust explains the effects observed in the previous studies. When the motivation to avoid infectious disease has been threatened, people experience disgust as a warning to avoid the stimulus at hand (Tybur, Lieberman, Kurzban, & DeScioli, 2013). As such, if imagining same-sex sexual (vs. nonsexual) behavior leads conservatives to adopt more anti-gay attitudes because it threatens their motivation to avoid infectious disease, then conservatives' greater experience of disgust should mediate this effect.

Second, we examined whether leading people to perceive their response to perspective taking as not signaling a threat to their motivation would prevent perspective taking from fostering negative attitudes. To test this idea, we drew from research on emotion reappraisal. Previous research indicates that reappraising how an emotional experience relates to an outcome (e.g., thinking that arousal improves, rather than harms, Graduate Record Examinations performance) can shape how the emotional experience influences perception and behavior (e.g., Jamieson, Mendes, & Nock, 2013). As previously discussed, sexual activity between men likely elicits disgust because of its perceived association with disease and infection (Nussbaum, 2010). In addition, recent research indicates that conservatives report greater support for same-sex marriage when they reappraise a visual scene of sexual activity between men so as not to experience disgust (Feinberg, Antonenko, Willer, Horberg, & John, 2014). In the present research, we took a similar, although slightly different, approach and examined whether having participants reappraise the experience of disgust as not necessarily signaling the threat of disease would attenuate the extent to which disgust fostered anti-gay prejudice, and in turn reduce the extent to which imagining sexual behavior produces anti-gay attitudes among conservatives.

## Method

**Participants.** Five hundred three heterosexual participants (246 women;  $M_{age} = 34.17$  years) were recruited from Mturk and included in analyses. We collected a sample size that provided approximately 90% power to detect a small effect ( $r \approx .15$ ). Eighty-four additional participants completed the study but were excluded from analyses either because they failed the attention check (16 participants) or did not identify as heterosexual (68 participants).

**Procedure.** Participants read that the researchers were interested in their beliefs on several issues, and that throughout the study they would receive scientific information on a variety of topics. To ensure that participants would carefully read all information presented to them, they were informed that they would later be asked questions about what they read.

**Reappraisal manipulation.** Participants were randomly assigned to either the *reappraisal condition* ( $n = 254$ ) or control condition ( $n = 249$ ). Consistent with previous research (e.g., Jamieson et al., 2013), participants in the reappraisal condition were provided with information teaching them to rethink their experience of disgust. Specifically, participants read a passage informing them that people often experience disgust in response to stimuli that could make them sick (e.g., feces), but that people also experience this response even when the stimulus cannot actually make them sick or cause them harm (e.g., a picture of feces). Participants in the control condition did not read any information and continued

to the next part of the study.

**Filler task.** To reduce the possibility that participants would explicitly link the reappraisal information to the part of the study in which they evaluated a same-sex couple, all participants next read filler information about the phases of the moon. Participants were reminded that they would later be asked questions about the information and were required to stay on the page for at least 2 min.

**Perspective taking manipulation.** Participants were next informed that they would be evaluating people in a relationship, and that the specific couple they evaluate would be selected from a larger database of couples. Participants were presented with the same picture as in Study 1a, which was described as showing a same-sex couple. Participants were randomly assigned to the imagine sexual behavior condition ( $n = 252$ ) or imagine nonsexual behavior condition ( $n = 251$ ). Participants were provided with the same information as in Study 2 that corresponded to their respective condition.

**Disgust measure.** Consistent with previous research examining the relationship between disgust and sexual minority attitudes (Dasgupta, DeSteno, Williams, & Hunsinger, 2009), participants indicated the extent to which they felt disgusted, queasy, and sick using a 1 (*not at all*) to 7 (*very much so*) scale. We created a composite disgust score ( $\alpha = .92$ ).

**Attitude variables.** Evaluations of the couple, attitudes toward gay men and lesbians ( $\alpha = .96$ ), and opposition to sexual minority rights ( $\alpha = .86$ ) were assessed as in the previous studies.

**Manipulation checks.** Participants indicated the extent to which they imagined the couple's experiences ( $M = 4.82$ ,  $SD = 1.72$ ) and sexual behavior ( $M = 3.73$ ,  $SD = 2.11$ ) as in the previous studies.

**Political ideology.** Participants reported their ideology as in the previous studies ( $M = 4.17$ ,  $SD = 1.94$ ).

## Results

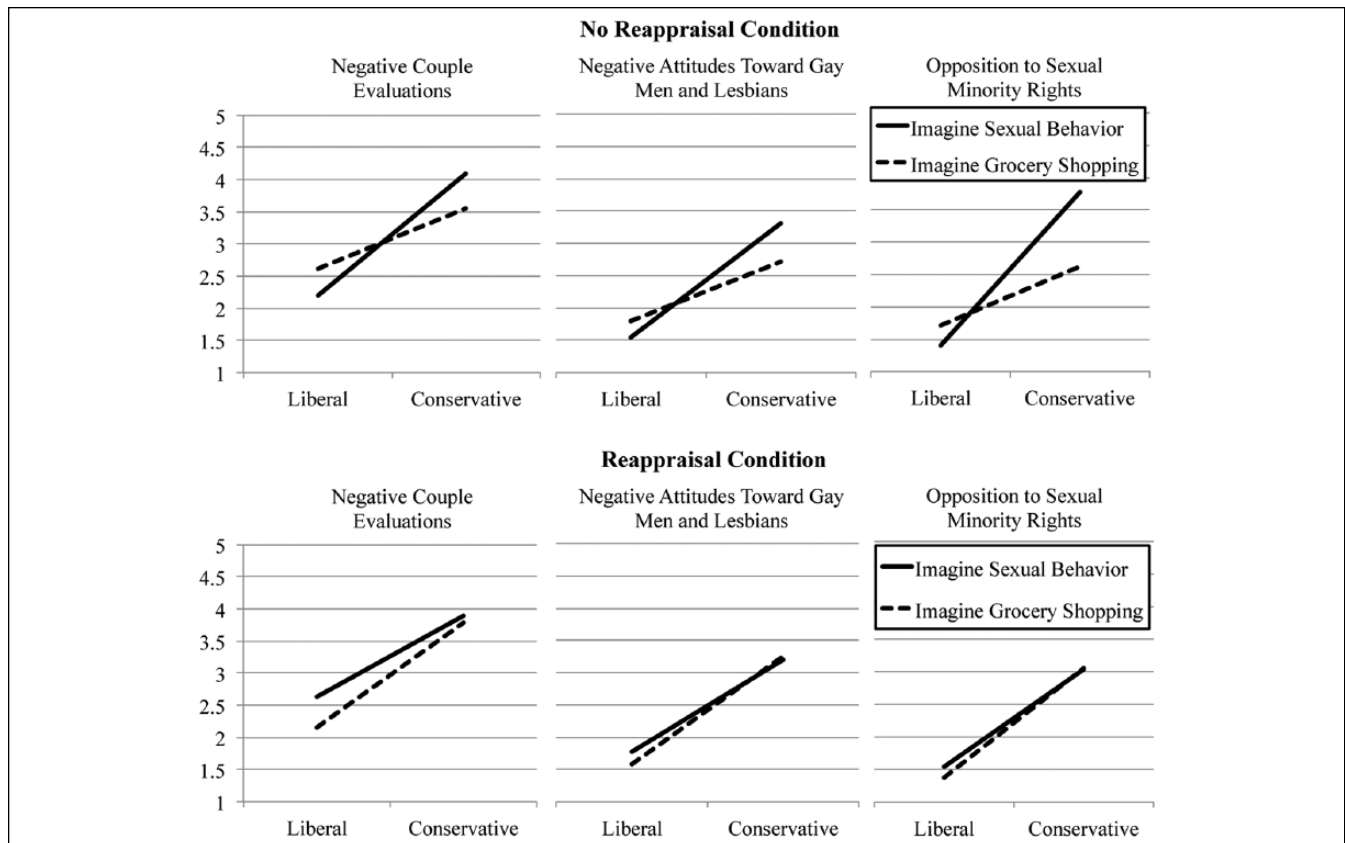
**Perspective taking manipulation check.** Participants who were asked to imagine the couple's sexual behaviors ( $M = 4.88$ ,  $SD = 1.76$ ) and those asked to imagine the couple grocery shopping ( $M = 4.75$ ,  $SD = 1.69$ ) did not differ in the extent to which they imagined the couple's experiences ( $p = .43$ ), suggesting that any attitude differences between these conditions are not attributable to differences in imagining the couple's experiences. In addition, neither the main effect of ideology ( $p = .20$ ) nor the Ideology  $\times$  Perspective Taking interaction ( $p = .94$ ) were significant, indicating that liberals and conservatives imagined the couple's experiences to a similar extent.

**Imagine sexual behavior check.** Participants who were asked to imagine the couple's sexual behaviors ( $M = 4.96$ ,  $SD = 1.75$ ) were more likely to imagine the couple's sexual behaviors than were participants asked to imagine the couple grocery shopping ( $M = 2.49$ ,  $SD = 1.68$ ;  $B = 1.23$ ,  $SE = 0.08$ ,  $t[499] = 16.05$ ,  $p < .001$ ,  $r_{sp} = .58$ , 95% CI = [1.08, 1.38]). Neither the main effect of ideology ( $p = .17$ ) nor the Ideology  $\times$  Perspective Taking interaction ( $p = .51$ ) were significant, indicating that liberals and conservatives imagined the couple's sexual behaviors to a similar extent.

**Analytic strategy for main dependent variables.** We conducted multiple regression analyses to examine our main predictions. All analyses included the predictors of ideology (grand mean centered), perspective taking condition (1 = imagine sexual behavior; -1 = imagine grocery shopping), reappraisal condition (1 = reappraisal condition; -1 = no reappraisal condition), and all two- and three-way interactions. The dependent variable differed across analyses. When a three-way interaction was significant, we first decomposed it by examining the Ideology  $\times$  Perspective Taking condition interaction separately for people assigned to the reappraisal and no reappraisal conditions. If the simple two-way interaction was significant, we further examined the effect of perspective taking condition separately for liberals and conservatives.

**Does imagining same-sex sexual behavior increase disgust among conservatives?** We examined whether conservatives experienced more disgust when imagining same-sex sexual (vs. nonsexual) behavior, whereas liberals did not. The main effect of perspective taking was significant ( $p < .001$ ). People who imagined the couple's sexual behaviors (vs. grocery shopping) reported more disgust. This main effect was qualified by the predicted Ideology  $\times$  Perspective Taking interaction,  $B = 0.10$ ,  $SE = 0.03$ ,  $t(495) = 3.56$ ,  $p < .001$ ,  $r_{sp} = .15$ , 95% CI = [0.04, 0.16]. Conservatives who thought about the couple engaging in sexual behavior (vs. grocery shopping) reported greater disgust,  $B = 0.43$ ,  $SE = 0.08$ ,  $t(495) = 5.51$ ,  $p < .001$ ,  $r_{sp} = .23$ , 95% CI = [0.28, 0.59]. The content of what liberals imagined did not affect their level of disgust,  $B = 0.04$ ,  $SE = 0.08$ ,  $t(495) = 0.44$ ,  $p = .66$ ,  $r_{sp} = .02$ , 95% CI = [-0.12, 0.19]. Importantly, the three-way Ideology  $\times$  Perspective Taking  $\times$  Reappraisal interaction was not significant,  $B < .001$ ,  $SE = 0.03$ ,  $t(495) = 0.02$ ,  $p = .99$ ,  $r_{sp} < .001$ , 95% CI = [-0.06, 0.06], indicating that the reappraisal manipulation did not change the amount of disgust conservatives experienced in response to imagining the couple's sexual (vs. nonsexual) behaviors.

**Does reappraisal prevent imagined sexual behavior from fostering negative attitudes among conservatives?** No main effects of perspective taking, reappraisal, or two-way interactions with ideology significantly predicted couple evaluations or attitudes toward gay men and lesbians ( $ps \geq .18$ ). The main effect



**Figure 4.** Attitude variables plotted as a function of reappraisal condition, perspective taking condition, and ideology (1 SD below and above the mean; Study 3).

of perspective taking ( $p = .04$ ) and the Ideology  $\times$  Perspective Taking interaction ( $p = .009$ ) significantly predicted opposition to sexual minority rights. Conservatives who imagined the couple's sexual behavior (vs. grocery shopping) reported greater opposition to sexual minority rights ( $p < .001$ ). What liberals imagined did not affect their attitudes toward sexual minority rights ( $p = .66$ ).

Importantly, these lower order effects were qualified by the predicted three-way Ideology  $\times$  Perspective Taking  $\times$  Reappraisal interaction (see Figure 4) when predicting couple evaluations,  $B = -0.09$ ,  $SE = 0.04$ ,  $t(495) = -2.44$ ,  $p = .02$ ,  $r_{sp} = .10$ , 95% CI =  $[-0.15, -0.02]$ ; attitudes toward gay men and lesbians,  $B = -0.07$ ,  $SE = 0.03$ ,  $t(495) = -2.42$ ,  $p = .02$ ,  $r_{sp} = .09$ , 95% CI =  $[-0.13, -0.01]$ ; and opposition to sexual minority rights,  $B = -0.11$ ,  $SE = 0.03$ ,  $t(495) = -3.40$ ,  $p = .001$ ,  $r_{sp} = .13$ , 95% CI =  $[-0.17, -0.04]$ , indicating that how the perspective taking manipulation shaped conservatives' attitudes depended on whether they reappraised disgust.

**No reappraisal condition.** Examining how perspective taking shaped the attitudes of participants who did not reappraise disgust allowed us to test for a replication of Study 2. The Ideology  $\times$  Perspective Taking interaction (Figure 4, top

panel) significantly predicted couple evaluations,  $B = 0.12$ ,  $SE = 0.05$ ,  $t(495) = 2.37$ ,  $p = .02$ ,  $r_{sp} = .10$ , 95% CI =  $[0.02, 0.23]$ ; attitudes toward gay men and lesbians,  $B = 0.11$ ,  $SE = 0.04$ ,  $t(495) = 2.51$ ,  $p = .01$ ,  $r_{sp} = .10$ , 95% CI =  $[0.02, 0.19]$ ; and attitudes toward sexual minority rights,  $B = 0.19$ ,  $SE = 0.05$ ,  $t(495) = 4.05$ ,  $p < .001$ ,  $r_{sp} = .15$ , 95% CI =  $[0.10, 0.28]$ ; indicating that what participants thought about differentially changed liberals' and conservatives' attitudes.

Conservatives who imagined the couple engaging in sexual behavior (vs. grocery shopping) evaluated the couple marginally more negatively,  $B = 0.27$ ,  $SE = 0.14$ ,  $t(495) = 1.91$ ,  $p = .057$ ,  $r_{sp} = .08$ , 95% CI =  $[-0.01, 0.55]$ ; reported more negative attitudes toward gay men and lesbians,  $B = 0.30$ ,  $SE = 0.12$ ,  $t(495) = 2.52$ ,  $p = .01$ ,  $r_{sp} = .10$ , 95% CI =  $[0.07, 0.53]$ ; and reported greater opposition to sexual minority right,  $B = 0.58$ ,  $SE = 0.13$ ,  $t(495) = 4.55$ ,  $p < .001$ ,  $r_{sp} = .17$ , 95% CI =  $[0.33, 0.83]$ . What liberals imagined did not significantly impact any attitude variables ( $ps \geq .13$ ). These findings replicate Study 2.

**Reappraisal condition.** Among participants who reappraised disgust (Figure 4, bottom panel), neither the main effect of perspective taking ( $ps \geq .11$ ) nor the Ideology  $\times$  Perspective Taking interaction ( $ps \geq .31$ ) significantly predicted



any attitude variables. These results indicate that when conservatives reappraised disgust, imagining same-sex sexual (vs. nonsexual) behavior no longer fostered negative attitudes.

**Does reappraisal attenuate the effect of disgust on anti-gay attitudes?** We next examined whether the reappraisal manipulation attenuated the extent to which disgust fostered anti-gay attitudes. We conducted a multiple regression model that included the predictors of ideology (grand mean centered), disgust (grand mean centered), reappraisal condition (1 = reappraisal condition; -1 = no reappraisal condition), and all two- and three-way interactions. The dependent variable differed across analyses.

The main effect of reappraisal did not significantly predict any attitude variables ( $ps \geq .10$ ). Importantly, the Predicted Disgust  $\times$  Reappraisal Manipulation interaction significantly predicted couple evaluations,  $B = -0.14$ ,  $SE = 0.06$ ,  $t(495) = -2.52$ ,  $p = .01$ ,  $r_{sp} = .09$ , 95% CI = [-0.26, -0.03]; attitudes toward gay men and lesbians,  $B = -0.14$ ,  $SE = 0.05$ ,  $t(495) = -3.05$ ,  $p = .002$ ,  $r_{sp} = .10$ , 95% CI = [-0.23, -0.05]; and opposition to sexual minority rights,  $B = -0.19$ ,  $SE = 0.05$ ,  $t(495) = -3.82$ ,  $p < .001$ ,  $r_{sp} = .13$ , 95% CI = [-0.29, -0.09], indicating that disgust differentially shaped anti-gay attitudes depending on whether participants engaged in reappraisal. Specifically, disgust was a weaker predictor of anti-gay attitudes among participants who reappraised disgust (couple evaluations:  $B = 0.45$ ,  $SE = 0.06$ ,  $t[495] = 7.25$ ,  $p < .001$ ,  $r_{sp} = .26$ , 95% CI = [0.33, 0.57]; attitudes toward gay men and lesbians:  $B = 0.43$ ,  $SE = 0.05$ ,  $t[495] = 8.75$ ,  $p < .001$ ,  $r_{sp} = .29$ , 95% CI = [0.33, 0.52]; opposition to sexual minority rights:  $B = 0.37$ ,  $SE = 0.06$ ,  $t[495] = 6.76$ ,  $p < .001$ ,  $r_{sp} = .23$ , 95% CI = [0.26, 0.48]) than among participants who did not reappraise disgust (couple evaluations:  $B = 0.74$ ,  $SE = 0.10$ ,  $t[495] = 7.65$ ,  $p < .001$ ,  $r_{sp} = .28$ , 95% CI = [0.55, 0.93]; attitudes toward gay men and lesbians:  $B = 0.70$ ,  $SE = 0.08$ ,  $t[495] = 9.24$ ,  $p < .001$ ,  $r_{sp} = .30$ , 95% CI = [0.55, 0.85]; opposition to sexual minority rights:  $B = 0.76$ ,  $SE = 0.09$ ,  $t[495] = 8.87$ ,  $p < .001$ ,  $r_{sp} = .30$ , 95% CI = [0.59, 0.92]). Importantly, the three-way Ideology  $\times$  Disgust  $\times$  Reappraisal Manipulation interaction did not significantly predict any attitude variables ( $ps \geq .18$ ), indicating that reappraisal attenuated the effect of disgust on anti-gay attitudes to a similar extent for liberals and conservatives. Overall, these results indicate that reappraisal attenuated the extent to which disgust fostered anti-gay attitudes.

**Mediation model: Does reappraisal prevent negative attitudes among conservatives through attenuating disgust's effect on anti-gay attitudes?** We next examined (a) whether disgust explained why imagining sexual behavior increased conservatives' anti-gay attitudes and (b) whether the reappraisal manipulation eliminated this effect because it attenuated the extent to which disgust fostered anti-gay attitudes. We tested these questions using Model 71 with 5,000 bootstraps in

PROCESS (Hayes, 2013). This model provides separate indirect effects for liberals (1 *SD* below the mean) and conservatives (1 *SD* above the mean). For both liberals and conservatives, this model also provides separate paths for the reappraisal and no reappraisal conditions when examining the relationship between perspective taking and the attitude outcome, as well as between disgust and the attitude outcome.

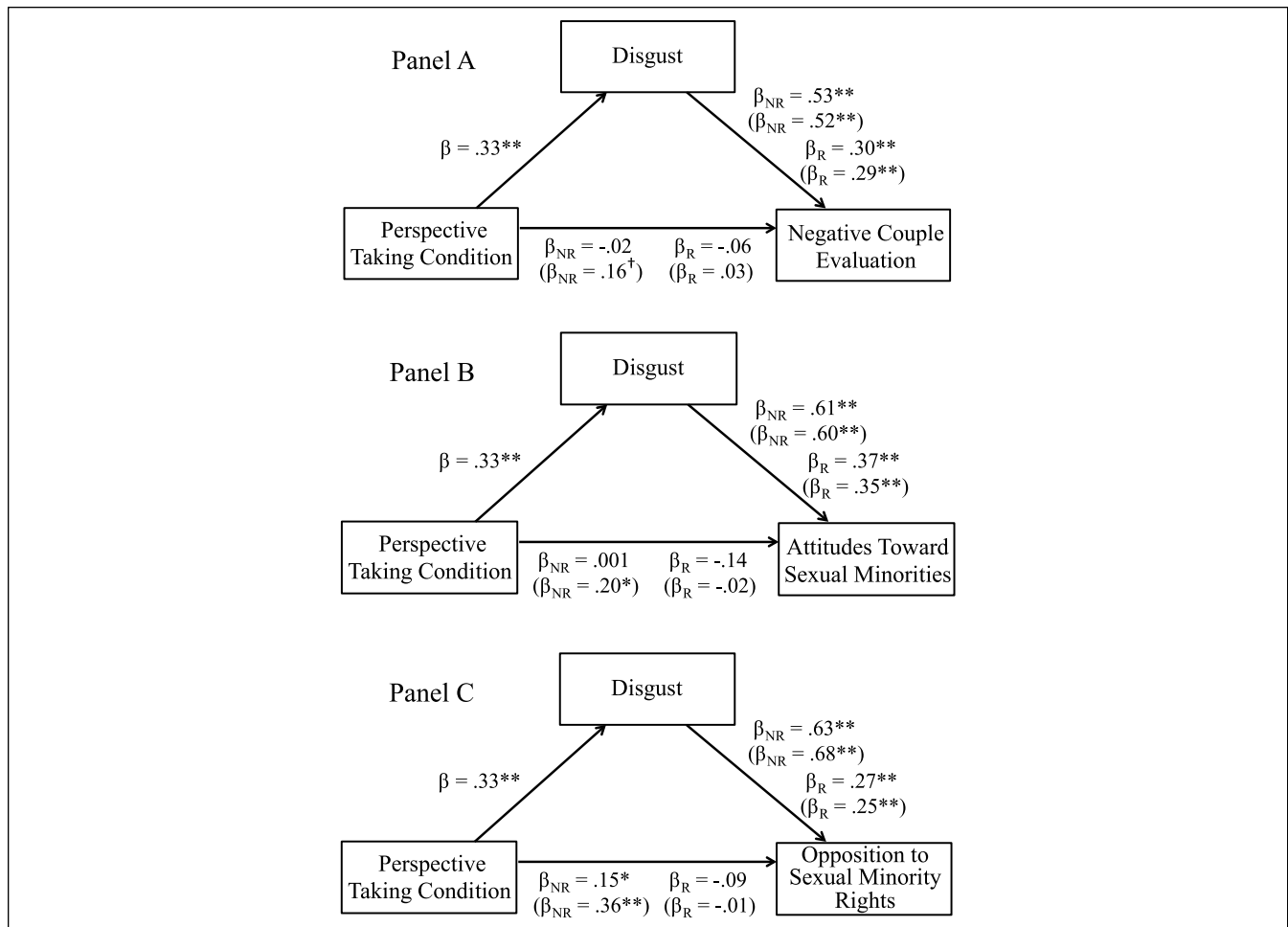
We report point estimates and 95% bias corrected CIs of the indirect effects for all mediation models (Figure 5) in Table 1. Mediation is significant at  $\alpha = .05$  if the indirect effect does not contain zero. For conservatives in the no reappraisal condition, mediation was significant for all of the attitude variables, indicating that imagining sexual behavior (vs. grocery shopping) increased conservatives' anti-gay attitudes by enhancing disgust. For conservatives in the reappraisal condition, mediation was also significant, but the indirect effects were weaker because the reappraisal manipulation attenuated the effect of disgust on anti-gay attitudes. Mediation was not significant for liberals because they did not experience greater disgust or anti-gay attitudes in response to imagining sexual (vs. nonsexual) behavior. Altogether, these findings indicate that imagining same-sex sexual behavior increased conservatives' (but not liberals') anti-gay attitudes through enhancing feelings of disgust, and that this effect was attenuated when conservatives reappraised disgust.

## Discussion

Study 3 indicates that conservatives (but not liberals) experienced greater disgust when imagining same-sex sexual (vs. nonsexual) behavior, and this disgust explained in part why imagining sexual behavior fostered negative attitudes among conservatives. In addition, reappraising disgust as not necessarily signaling threat of disease eliminated the effect of thinking about sexual behavior on conservatives' attitudes.

## General Discussion

Scholars from multiple disciplines have argued that taking another person's perspective promotes positive attitudes. In the present research, we tested the idea that perspective taking could lead to more negative attitudes when people imagine experiences that threaten their motivations. We tested this idea by examining how taking the perspective of a male same-sex couple shaped conservatives' attitudes toward sexual minorities. Across four studies, we found that conservatives (but not liberals) who took the perspective of a male same-sex couple and imagined sexual behaviors evaluated the couple and gay men and lesbians in general more negatively, and also expressed greater opposition to sexual minority rights. This effect was observed using both correlational (Studies 1a and 1b) and experimental (Studies 2 and 3) procedures to assess the content of participants' thoughts while perspective taking. Importantly,



**Figure 5.** Mediation models for conservatives in which perspective taking predicts couple evaluations (Panel A), attitudes toward sexual minorities (gay men and lesbians; Panel B), and opposition to sexual minority rights (Panel C) through disgust.

Note. All values are standardized beta coefficients.  $\beta_{NR}$  paths are relationships in the no reappraisal condition and  $\beta_R$  paths are relationships in the reappraisal condition. Values in parentheses represent direct relationships, and values without parentheses represent relationships with all variables in the model. Asterisks show significant paths.

$^\dagger p < .10$ .  $*p < .05$ .  $**p < .001$ .

we did not find that conservatives were more likely than liberals to think about same-sex sexual behavior (Studies 1a and 1b). Instead, we found that imagining same-sex sexual (vs. nonsexual) behavior increased conservatives' anti-gay attitudes because they experienced greater disgust. In addition, reappraising disgust as not necessarily signaling the threat of disease prevented imagined sexual behavior from fostering negative attitudes among conservatives (Study 3). These findings provide insights for developing a more nuanced understanding of how perspective taking shapes attitudes, as well as how people form attitudes toward sexual minorities. We elaborate on each of these points below.

### Implications for Perspective Taking Research

In the present research, we argue that it is possible to determine when and why perspective taking would foster negative attitudes by simultaneously considering the characteristics of

the person engaging in perspective taking and the content of the perspective taking experience. Previous perspective taking research has generally asked participants to imagine a target's experiences without directing participants what to imagine (e.g., Galinsky & Moskowitz, 2000; Vescio et al., 2003). Our findings suggest that undirected perspective taking will differentially shape attitudes contingent on whether the imagined experience threatens perceivers' motivations. For example, in Studies 1a and 1b of the present research, participants engaged in undirected perspective taking. We found that conservatives who did not imagine sexual behavior (i.e., those "low" in sexual imagery) while perspective taking (vs. remaining detached) reported more positive attitudes, but perspective taking had no effect among conservatives who thought about sexual behavior. In other words, thinking about sexual behavior inhibited perspective taking from shaping conservatives' attitudes.

Previous research has also demonstrated that undirected perspective taking can promote negative attitudes and behavior

**Table 1.** Point Estimates (Standard Errors) and 95% Bias Corrected CIs for Indirect Effects in Study 3 Mediation Models.

	Point estimate	CI lower bound	CI upper bound
<b>Conservatives</b>			
No reappraisal condition			
Couple evaluations	0.29 (0.08)	0.1524	0.4781
Attitudes toward sexual minorities	0.29 (0.08)	0.1589	0.4641
Sexual minority rights opposition	0.34 (0.08)	0.1925	0.5182
Reappraisal condition			
Couple evaluations	0.17 (0.06)	0.0774	0.2930
Attitudes toward sexual minorities	0.18 (0.05)	0.0974	0.2943
Sexual minority rights opposition	0.14 (0.05)	0.0674	0.2535
<b>Liberals</b>			
No reappraisal condition			
Couple evaluations	0.03 (0.06)	-0.0865	0.1631
Attitudes toward sexual minorities	0.03 (0.05)	-0.0850	0.1341
Sexual minority rights opposition	0.03 (0.05)	-0.0778	0.1342
Reappraisal condition			
Couple evaluations	0.02 (0.04)	-0.0523	0.1081
Attitudes toward sexual minorities	0.02 (0.04)	-0.0485	0.0962
Sexual minority rights opposition	0.02 (0.03)	-0.0473	0.0825

Note. CI = confidence interval.

(Epley et al., 2006; Vorauer & Sasaki, 2009). These past findings are analogous to those of Studies 2 and 3 of the present research, in which conservatives reported more anti-gay attitudes after being directed to imagine same-sex sexual (vs. non-sexual) behavior. It is possible that in previous research where undirected perspective taking fostered negative attitudes, participants imagined experiences that strongly threatened their motivations and in turn adopted more hostile attitudes. Future research could provide greater clarity into when imagined experiences that threaten motivations foster negative attitudes (vs. simply block the effects of perspective taking) by continuing to either directly assess or manipulate what participants think about while perspective taking.

Our framework also logically extends to predict that perspective taking will foster more positive attitudes when people imagine an experience that is concordant with their motivations. It is not possible to directly determine whether this idea helps to account for the positive effects of perspective taking documented in previous research, as past work did not assess the content of perspective taking or perceiver's motivations that would be relevant to the perspective taking experience. However, our contention is indirectly supported by research showing that people support attitudes when the

attitudes are framed as being consistent with the person's motivations. For example, Feinberg and Willer (2015) found that conservatives reported greater support for same-sex marriage when it was framed as consistent with conservatives' motivations to support the U.S. system (e.g., as being patriotic). Applied to the present framework, we would predict that conservatives who take the perspective of a same-sex couple and imagine the couple engaging in behaviors that support the U.S. system (e.g., paying taxes) would report more positive attitudes toward sexual minorities. In addition, as noted above, in Studies 1a and 1b conservatives who engaged in perspective taking and did not think about sexual behavior reported more positive attitudes toward sexual minorities. Although speculative, it is possible that this effect occurred because conservatives imagined the couple engaging in behaviors that were concordant with conservatives' motivations.

An interesting question that arises concerns whether our framework applies only when people dispositionally hold more negative attitudes toward the target of perspective taking. Although we did not directly examine this question in the present work, we believe that the extent to which an imagined behavior threatens perceivers' motivation will lead to more negative attitudes toward the group in question, regardless of initial attitudes toward the group. For example, Vorauer, Martens, and Sasaki (2009) found that low-prejudice (but not high-prejudice) Whites treated a minority out-group member more negatively after engaging in perspective taking during an interaction. Although the authors did not directly examine the content of participants' perspective taking experience, Whites are frequently concerned about appearing prejudiced during cross-group interactions (Shelton, West, & Trail, 2010). As such, it is possible that low-prejudice Whites imagined their minority interaction partner as having thoughts that threatened their egalitarian motivations (e.g., thinking their interaction partner viewed their behaviors as prejudicial). Similarly, in Study 1a of the present research, liberals (who on average are low in prejudice toward sexual minorities) reported less support for sexual minority rights when they engaged in perspective taking and did not think about sexual behavior. Although this effect did not consistently replicate and only occurred for one of the attitude variables, it is possible that the content of what liberals imagined threatened a motivation and in turn led liberals to report less positive attitudes.

### *Implications for Understanding Attitudes Toward Sexual Minorities*

Our findings also contribute to understanding the factors that shape attitudes toward sexual minorities. Previous research has highlighted the role of disgust in shaping attitudes toward gay men (e.g., Inbar, Pizarro, & Bloom, 2012). However, the present studies are the first to empirically document that imagining sexual behavior (rather than any behavior) between two men

elicits a disgust response, which in turn guides attitudes toward gay men. In addition, whereas prior research has examined factors that alter attitudes toward sexual minorities (e.g., extended contact and activation of egalitarian values; Herek & Capitano, 1996; Luguri, Napier, & Dovidio, 2012), this research has heavily focused on the nonsexual aspects of people's representations of sexual minorities. Given that a key aspect of sexual orientation is sexual behavior, and disgust responses to sexual behavior between men are likely to be a central predictor of attitudes, more fully examining the sexual components of how people represent sexual minorities is likely to shed new light on the roots of sexual minority attitudes.

In the present research, we focused on sexual behavior between two men. Although we did not examine sexual behaviors between two women or between a man and a woman, previous research has proposed that disgust responses are particularly likely to shape attitudes toward gay men because people perceive sexual behavior between two men as being linked to disease (Filip-Crawford & Neuberg, in press; Nussbaum, 2010). Based on this theorizing, we would not necessarily anticipate that conservatives would develop more negative attitudes if they imagined sexual behavior between two women or between a man and a woman, as these behaviors would not threaten their motivation to avoid infectious disease. Nevertheless, directly examining this possibility, in addition to more fully testing whether disgust shapes attitudes toward sexual groups other than gay men (e.g., lesbians), and addressing the contextual nature of these effects (e.g., comparing countries where gay men are more strongly or weakly associated with disease) would be informative steps for future research.

### Concluding Remarks

Altogether, in the present research, we demonstrated that perspective taking can lead people to adopt more negative attitudes when they imagine an experience that threatens their current motivations and goals. We believe that this framework will be generative for future research that can delve further into the complexities of how taking another person's perspective shapes attitudes and behavior.

### Authors' Note

Both authors contributed equally to this work.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### Note

1. In all studies, participants reported their ideology (and religiosity in Study 1b) either at the beginning or end of the study.

Neither the timing of when these variables were reported nor perspective taking condition significantly affected ideology or religiosity scores ( $ps \geq .14$ ).

### Supplemental Material

The online supplemental material is available at <http://pspb.sagepub.com/supplemental>.

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