

## The Politics of Gaydar: Ideological Differences in the Use of Gendered Cues in Categorizing Sexual Orientation

Chadly Stern, Tessa V. West, and John T. Jost  
New York University

Nicholas O. Rule  
University of Toronto

In the present research, we investigated whether, because of differences in cognitive style, liberals and conservatives would differ in the process of categorizing individuals into a perceptually ambiguous group. In 3 studies, we examined whether conservatives were more likely than liberals to rely on gender inversion cues (e.g., feminine = gay) when categorizing male faces as gay vs. straight, and the accuracy implications of differential cue usage. In Study 1, perceivers made dichotomous sexual orientation judgments (gay-straight). We found that perceivers who reported being more liberal were less likely than perceivers who reported being more conservative to use gender inversion cues in their deliberative judgments. In addition, liberals took longer to categorize targets, suggesting that they may have been thinking more about their judgments. Consistent with a stereotype correction model of social categorization, in Study 2 we demonstrated that differences between liberals and conservatives were eliminated by a cognitive load manipulation that disrupted perceivers' abilities to engage in effortful processing. Under cognitive load, liberals failed to adjust their initial judgments and, like conservatives, consistently relied on gender inversion cues to make judgments. In Study 3, we provided more direct evidence that differences in cognitive style underlie ideological differences in judgments of sexual orientation. Specifically, liberals were less likely than conservatives to endorse stereotypes about gender inversion and sexual orientation, and this difference in stereotype endorsement was partially explained by liberals' greater need for cognition. Implications for the accuracy of ambiguous category judgments made with the use of stereotypical cues in naturalistic settings are discussed.

*Keywords:* sexual orientation, political ideology, stereotype accuracy

In May of 2012, Congressman James Lankford (R-OK) was asked whether he would support the expansion of existing legislation protecting individuals from being fired due to their race or gender to include protections for sexual orientation. The representative stated that he would not vote for it, because "race and sexual preference are two different things." He further explained that unlike race, which is based on "skin tone, something obvious. . . [y]ou don't walk up to someone on the street and look at them and say 'Gay or straight?'" (Anderson-Minshall, 2012, para. 4). The question posed to Representative Lankford, as well as his

response, are timely and important given that issues surrounding sexual orientation are commonly discussed and grappled with in contemporary society. In recent years, political discourse has addressed both *actual* and *perceived* sexual orientation in the context of legislative policies intended to protect sexual minorities, such as the Employment Non-Discrimination Act (Vitulli, 2010). In school and employment settings, individuals can be targets of intimidation and discrimination not only when they identify themselves as sexual minorities but also when they are *perceived* to be in the minority (Hong & Garbarino, 2012). For this reason, interventions that only address *actual* sexual orientation are ineffective (Reise, 2011).

These examples raise the timely, complex question of how people perceive sexual orientation, and whether the process of categorization fosters accuracy or inaccuracy in judgments. To date, research on social categorization processes has focused primarily on how physical features of the *target* influence category-based judgments (e.g., skin tone and Afrocentric facial features with respect to racial judgments, and hair length and body movements with respect to sex; see Blair, Judd, Sadler, & Jenkins, 2002; Cosmides, Tooby, & Kurzban, 2003; Freeman, Ambady, Rule, & Johnson, 2008; Freeman, Pauker, Apfelbaum, & Ambady, 2010; Hill, Bruce, & Akamatsu, 1995; Johnson, Gill, Reichman, & Tassinari, 2007; Johnson & Tassinari, 2005; Martin & Macrae,

This article was published Online First December 31, 2012.

Chadly Stern, Tessa V. West, and John T. Jost, Department of Psychology, New York University; Nicholas O. Rule, Department of Psychology, University of Toronto, Toronto, Ontario, Canada.

This research was supported by a National Science Foundation Graduate Research Fellowship, awarded to Chadly Stern, and funding from New York University, awarded to Tessa V. West and John T. Jost. Portions of this work were presented at the 35th annual meeting of the International Society of Political Psychology. We thank Sarah Gordon for her assistance in data collection.

Correspondence concerning this article should be addressed to Chadly Stern, New York University, Department of Psychology, 6 Washington Place, New York, NY, 10003. E-mail: cds330@nyu.edu

2007). In the present research program, we also investigate the possibility that characteristics of the *perceiver* interact with target features to determine judgments of sexual orientation. This interactive approach builds on Freeman and Ambady's (2011) argument that features of the perceiver (i.e., "higher level cognitive states") play an important role in determining the outcome of categorization. In terms of the perceiver, we focus on an important characteristic, namely political ideology, which is linked to specific cognitive and motivational processing styles (Jost, Glaser, Kruglanski, & Sulloway, 2003; Sidanius, 1985; Tetlock, 2007). We expected that perceivers' ideology would influence the process of categorizing target individuals as gay or straight.<sup>1</sup> Specifically, we hypothesized that liberals and conservatives would differ in the extent to which they rely on gender-typical facial cues to make sexual orientation judgments (cf. Freeman, Johnson, Ambady, & Rule, 2010).

The broader goals of the present research program were threefold. First, we extend prior work on basic social categorization processes by investigating how political ideology influences *who* will use specific types of cues in making judgments of sexual orientation. Second, given that the social category of interest (sexual orientation) possesses a relatively clear truth criterion (i.e., self-identification; see Ambady, Hallahan, & Conner, 1999; Rule, Ambady, Adams, & Macrae, 2008), we examine the extent to which political ideology relates to the accuracy of judgments. Third, we consider situational factors that should moderate the effect of perceivers' political ideology on the categorization process. That is, we examine *when* liberals and conservatives will and will not differ in terms of whom they label as gay and straight.

### Categorization via Cue Use

When individuals perceive others, they often place them into social categories (Brewer, 1988; Fiske & Neuberg, 1990; Macrae & Bodenhausen, 2000; Tajfel, 1969). This automatic process allows perceivers to navigate and adapt to their social world in an efficient manner (Norman & Shallice, 1986). For some social categories—such as race (Maddox, 2004; Maddox & Gray, 2002), sex (Macrae & Martin, 2007; Rossion, 2002), and age (Bytheway, 2005; Kogan, 1979)—groups are typically defined by distinct physical features that perceivers can use to categorize targets. However, some forms of social category membership are more perceptually ambiguous. Sexual orientation is a perceptually ambiguous category insofar as it is not defined by transparent physical features (Rule et al., 2008; Rule, Ambady, & Hallett, 2009).

Even when clear information is lacking about category membership, perceivers attempt to categorize people into groups (e.g., Brewer, 1988; Tajfel, 1969), including groups based on sexual orientation (Everly, Shih, & Ho, 2012). To make category-based judgments in the absence of pertinent information, perceivers use *indirect* cues to place targets into categories (Albright, Kenny, & Malloy, 1988; Brunswik, 1955; Funder, 1995; Gosling, Ko, Mannarelli, & Morris, 2002; West & Kenny, 2011). In the context of sexual orientation judgments, these cues include gait (Johnson et al., 2007), eye gaze (Nicholas, 2004), speech (Bailey, 2003; S. E. Linville, 1998), and facial features (Rule & Ambady, 2008). In focusing on the role of facial features in sexual orientation judgments, Freeman et al. (2010) found that the masculinity and femininity of facial features are common cues that perceivers use

to infer sexual orientation. By manipulating computer-generated targets' facial features as well as measuring real targets' facial features, the researchers found that greater perceived femininity and lesser perceived masculinity significantly increased the likelihood that male targets would be categorized as gay. In other words, targets who appeared to be more *gender-inverted* were more likely to be categorized as gay than straight.

Cues that have shared meaning (i.e., are stereotypes) are often culturally defined as valid indicators of group membership (Funder & Colvin, 1988; Kenny, 1994; Stangor, Sechrist, & Jost, 2001; West & Kenny, 2011). Germane to the present research, gender inversion stereotypes that link femininity and masculinity to sexual orientation saturate modern culture, and so the vast majority of perceivers are likely to possess cultural knowledge of these stereotypes (Blashill & Powlishta, 2009; Freeman et al., 2010; Kite & Deaux, 1987). In addition, there is a high degree of cross-cultural consensus in sexual orientation judgments made on the basis of exposure to faces (Rule, Ishii, Ambady, Rosen, & Hallett, 2011), suggesting that the stereotypical cues used to make sexual orientation judgments—which are closely linked to stereotypes of masculinity and femininity—are widely shared.

Moreover, there is a theoretical precedent for identifying perceiver characteristics that affect the outcome of a complex social categorization process, such as those involved in judgments of sexual orientation (Freeman & Ambady, 2011). In the present research program, we examined a novel characteristic of the perceiver, namely his or her political ideology. We first determined whether ideological differences exist with respect to the use of gendered cues in categorizing sexual orientation. Subsequently, we investigated situational factors (or boundary conditions) that were hypothesized to moderate the effect of political ideology on gendered cue use with respect to sexual orientation judgments.

### Ideological Differences in Cognitive-Processing Styles

It might not seem intuitively obvious how political ideology would relate to the process of categorizing sexual orientation. However, we know from previous research that there are ideological differences in cognitive-processing styles that are relevant to social categorization processes, including some differences that should have direct implications for judging sexual orientation in particular. In comparison with liberals, conservatives are less tolerant of ambiguity and complexity (Block & Block, 1951; Jost et al., 2003; Sidanius, 1978; Wilson, Ausman, & Mathews, 1973). Conservatives also show a greater desire to reach certainty and closure on decision-making tasks (Jost et al., 2003; Jost, Kruglanski, & Simon, 1999) and rely more heavily on simple rules and heuristics when making judgments (e.g., describing policy options or estimating probabilities with respect to a given person's hobbies; see, e.g., Kimmelmeier, 2010; Tetlock, 1983). The implica-

<sup>1</sup> In the present research program, we explored the process whereby perceivers categorize others as either gay or straight. Although sexual attraction can be measured along a continuum (Kinsey, Pomeroy, & Martin, 1948), individuals often think categorically about group memberships (Macrae & Bodenhausen, 2000). Although it is true that many people identify themselves as bisexual rather than gay or straight, recent work indicates that perceivers readily use a categorical gay-straight dichotomy when making judgments of targets' sexual orientation (Ding & Rule, 2012).

tions of these findings for the use of stereotypical cues are fairly clear. As Kruglanski and Webster (1991, p. 223) point out, perceivers who desire cognitive closure tend to rely on “preexisting knowledge structures (stereotypes) in reaching judgments as opposed to a more complete examination of the stimulus information” (see also Kruglanski & Freund, 1983). If this is true, conservatives should be more inclined than liberals to “seize and freeze” on initial, snap judgments that are influenced by socially shared stereotypes (Kruglanski, Pierro, Mannetti, & De Grada, 2006).

For a variety of related reasons, then, it seems plausible that political ideology would affect social categorization processes, especially under circumstances of perceptual ambiguity. To our knowledge, no prior work has investigated the effects of political ideology on categorization of sexual orientation under ambiguity (i.e., “gaydar”). We theorized that because of differences in cognitive and motivational style, conservatives would be more likely than liberals to (a) use gendered cues in making judgments of sexual orientation, (b) make judgments of sexual orientation quickly rather than slowly, and (c) believe that gender-stereotypical cues as applied to sexual orientation are accurate.

### Political Ideology and the Effortful Correction of Stereotypical Judgments

Thus far, we have focused on cognitive-processing style differences between liberals and conservatives, which, we hypothesize, should influence the use of stereotype-based cues in making judgments of sexual orientation. At the same time, past research suggests that the process of categorizing sexual orientation occurs automatically (Rule, Ambady, & Hallett, 2009; Rule, Macrae, & Ambady, 2009), and automatic judgments are known to be stereotype prone in general (Devine, 1989). Given that liberals and conservatives are presumably exposed to the same cultural stereotypes concerning the relationship between gender inversion and sexual orientation (Blashill & Powlishta, 2009; Freeman et al., 2010; Herek, 1984; Kite & Deaux, 1987; Lhomond, 1993), we would expect that liberal and conservative perceivers alike use gendered facial cues when making initial, snap judgments about sexual orientation. Ideological differences, we hypothesize, are more likely to arise through a secondary process of stereotype “correction” (see also Skitka, Mullen, Griffin, Hutchinson, & Chamberlin, 2002).

Our approach is derived in part from Gilbert, Pelham, and Krull’s (1988) model of social perception, which posits an initial *characterization stage*. During this stage, perceivers draw quick, preliminary judgments, which are often based on stereotypes (cf. Devine, 1989). Given that sexual orientation judgments are made rapidly without much (if any) conscious thought (e.g., Rule & Ambady, 2008), we expected that during the *characterization stage* of sexual orientation judgments both liberals and conservatives would use gender inversion cues. In other words, the initial judgments of liberals and conservatives will not differ much, if at all. However, Gilbert et al. propose that after perceivers have made their initial automatic judgments, they enter into a *correction stage*. During this stage, perceivers might incorporate additional information in making their judgments. It is important to point out that correction processes can occur only when perceivers possess sufficient cognitive resources to incorporate additional information

and adjust their initial judgments (Gilbert & Osborne, 1989; Macrae, Milne, & Bodenhausen, 1994; Sherman, Lee, Bessenoff, & Frost, 1998; Van Knippenberg, Dijksterhuis, & Vermeulen, 1999).

Drawing on Gilbert et al.’s (1988) model, we hypothesize that liberal perceivers, when given the opportunity, would be more likely than conservatives to adjust their initial judgments away from the stereotype. This means that—given sufficient cognitive resources—liberals would be less likely than conservatives to use gender inversion cues when categorizing targets as gay or straight. Consistent with this form of reasoning, Skitka et al. (2002) found that whereas liberals and conservatives initially made the same stereotype-consistent, dispositional attributions for targets’ behaviors, only liberals engaged in a secondary process of situational correction. Consistent with Gilbert and Osborne’s (1989) perspective, Skitka et al. also demonstrated that ideological differences in attribution were eliminated by a cognitive load manipulation, presumably because cognitive busyness prevented liberals from engaging in a secondary correction process. In an integration of diverse theoretical models and results, then, we hypothesized that liberals would be less likely than conservatives to use gender inversion stereotypes when making sexual orientation judgments in general. However, the effect of ideology should disappear when effortful processing is disrupted, insofar as liberals should be unable to engage in a secondary process of stereotype correction.

### Implications of Cue Use for Accuracy

Is it possible that using gendered facial cues promotes accuracy in judgments of sexual orientation? Evidence suggests that in some cases there is a “kernel of truth” to the stereotype that masculine and feminine features are associated with self-identified sexual orientation. For instance, gay men and lesbians do express more gender atypicality in comparison with heterosexuals (Bailey, 2003; Rieger, Linsenmeier, Gygax, & Bailey, 2008; Rieger, Linsenmeier, Gygax, Garcia, & Bailey, 2010). Similarly, Freeman et al. (2010, Study 2) observed that (at least with respect to their sample of target stimuli) males with more feminine and fewer masculine facial features were, on average, more likely to identify as gay than straight. As noted above, the use of certain cues, such as gendered facial features, can help perceivers make reasonably accurate judgments in the absence of more diagnostic information. To the extent that the cues are in fact related to the target’s category membership (i.e., the stereotypic cues are valid; Brunswik, 1955; Brunswik & Kamiya, 1953; Jones, 1983; Jussim, 2005), it follows that cue usage will facilitate accurate judgments. Thus, using stimuli in the laboratory for which there is some degree of validity in the cues is useful for understanding how perceivers achieve accuracy in naturalistic settings, if in fact they do achieve accuracy (see Krueger & Funder, 2004).

The use of valid cues has been described as producing *stereotype accuracy* (Brunswik, 1955; Lee, Jussim, & McCauley, 1995) or *indirect accuracy* (Funder, 1995; West & Kenny, 2011). With regard to sexual orientation judgments, Freeman et al. (2010) found that when male targets who possessed more feminine facial features were actually gay and male targets who possessed more masculine facial features were actually straight, perceivers who used gender inversion cues achieved levels of judgmental accuracy that were better than chance. In other words, perceivers became more accurate through the use of valid, stereotypical cues. Rule

and Ambady (2008) demonstrated that even when faces were presented at durations of 50 ms, perceivers exhibited above-chance levels of accuracy, suggesting that perceivers are capable of rapidly incorporating cues such as gendered facial features into their sexual orientation judgments.

At the same time, relying on stereotypes to make judgments of sexual orientation will sometimes lead one astray. Gender inversion stereotypes about sexual minorities are frequently exaggerated (Gottschalk, 2003; Kite, 1994; Kite & Deaux, 1987; McCannagh & Zamir, 1995), and there is considerable variability in the strength of the association between gendered facial features and self-identification of sexual orientation (Freeman et al., 2010). In other words, in any large sample of the population, some gay men will have more masculine than feminine facial features, and some straight men will have more feminine than masculine facial features. Thus, consistently using gender inversion cues to infer sexual orientation can produce inaccuracy when the stereotypical relationship between gendered facial features and actual sexual orientation is reversed or nonexistent (Freeman et al., 2010, Study 3; Funder & Sneed, 1993; Hall & Carter, 1999). If conservatives are indeed more likely than liberals to use gender inversion cues, then they should be more accurate than liberals to the extent that such cues are reflective of stereotype accuracy (e.g., when males with feminine facial features are more likely to be gay). However, ideological differences in accuracy should disappear under cognitive load if liberals and conservatives rely on gender inversion cues to the same extent when they are initially categorizing sexual orientation.

## Overview of Studies

In three studies, we tested the hypothesis that liberals and conservatives would differ in the process of categorizing targets' sexual orientation based on fairly minimal information. In Study 1, we sought to determine whether liberals and conservatives differ in their use of gendered facial cues when judging sexual orientation and, if so, what the implications of this difference are for the accuracy of judgments. We used well-established methods for investigating the categorization of sexual orientation by asking perceivers to make dichotomous sexual orientation judgments of male targets (e.g., Johnson & Ghavami, 2011; Rule & Ambady, 2008). In Study 2, we tested a model of stereotype correction by manipulating cognitive load while participants made sexual orientation judgments. This manipulation allowed us to determine whether liberals are generally more likely than conservatives to engage in an effortful process of stereotype correction, which is disrupted under cognitive load. In Study 3, we sought to pinpoint the source of ideological differences in judgments about sexual orientation. Specifically, we focused on differences in the cognitive and motivational styles of liberals and conservatives with respect to the personal "need for cognition" (Cacioppo & Petty, 1982; Sargent, 2004).

### Study 1

In Study 1, perceivers made dichotomous sexual orientation judgments of male targets who identified themselves to researchers as either gay or straight. We pursued three main goals. First, we investigated whether conservatives would be more likely than

liberals to use gender inversion cues to guide their judgments of targets' sexual orientation. Specifically, we hypothesized that greater gender inversion (i.e., male targets who possess more feminine and less masculine facial features) would lead conservatives, more than liberals, to categorize targets as gay. Second, we expected conservatives to "seize and freeze" on their initial judgments, whereas liberals would be more likely to make a subsequent correction of their initial judgments (Jost et al., 2003; Kruglanski et al., 2006). Thus, we hypothesized that liberals would take longer than conservatives to categorize faces as gay or straight. Third, given past research, we expected that perceivers would exhibit better than chance levels of accuracy in their judgments of sexual orientation (Rule et al., 2008). We hypothesized that conservatives' judgments would be more accurate than liberals', but only to the extent that gender inversion cues were valid indicators of sexual orientation.

## Method

**Participants.** One hundred forty-seven participants (88 women;  $M_{\text{age}} = 35.8$  years,  $SD = 12.64$ , age range = 18–73 years; 129 heterosexual, 10 gay/lesbian, six bisexual, and two "other" sexual orientations) were recruited online through Amazon's Mechanical Turk website (see Buhrmester, Kwang, & Gosling, 2011, for a description and assessment of this research platform).

**Stimuli.** The images were of 30 (15 gay, 15 straight) White undergraduate males who reported their sexual orientation; faces were randomly selected from a database used in prior research (e.g., Rule et al., 2008). All targets were White to avoid potential confounds with racial stereotypes (Johnson, Freeman, & Pauker, 2012; Johnson & Ghavami, 2011). Targets posed facing forward; held a neutral expression; and possessed no jewelry, tattoos, facial piercings, glasses, or facial hair. All images were cropped at the target's neck, but ears and hair were retained. Images were standardized to 3" × 5".

**Procedure.** Participants were provided with a link on Mechanical Turk's website that took them to the experiment, which was programmed using Qualtrics online survey software. To encourage participants' undivided attention, they were first instructed to close all other windows on their computer; they were warned that images would not display properly otherwise. Participants were then informed that they would be shown several male faces and would be asked to determine whether each individual was gay or straight. They were given no information regarding the number or proportion of targets who identified as gay or straight. Participants were shown faces one at a time in random order and were asked to judge the target's sexual orientation by checking one of two boxes, which were labeled *gay* and *straight*; their responses were not submitted until they pressed another button that took them to the next face. Participants were given as much time as they needed to make their judgments. Time taken to make each judgment was measured in seconds using the Qualtrics timing function. After completing all judgments, participants reported their political ideology in response to the question: "Where on the following scale of political orientation would you place yourself?" (1 = *extremely liberal*; 5 = *moderate*; 9 = *extremely conservative*). This single ideological self-placement item has been found in previous research to exhibit high levels of predictive validity (Jost, 2006; Knight, 1999). The mean ideology score was very close to

the scale midpoint ( $M = 4.56$ ,  $SD = 2.33$ ). Participants also provided demographic information, including their age, sex, and sexual orientation. Finally, participants described the facial features that they used to make their sexual orientation judgments; we return to these features in Study 3. Participants were debriefed and paid through their Mechanical Turk account.

**Targets' gender inversion scores.** Researchers have argued that masculinity and femininity are conceptually distinct dimensions, rather than opposite poles of a single dimension (Bem, 1974; Unger & Crawford, 1993). Nevertheless, ordinary perceivers frequently think about gender in a dichotomous manner (Macrae & Bodenhausen, 2000), leading some researchers to propose that gender can be operationalized using a single scale of masculinity-femininity (Lippa, 2005). We estimated targets' degree of gender inversion by instructing 10 independent coders who were unaware of the goals of the research to rate the masculinity and femininity of each target (e.g., 1 = *not at all feminine*; 7 = *extremely feminine*). Interrater reliability was very high (masculine  $\alpha = .94$ ; feminine  $\alpha = .91$ ), so scores were averaged across coders. As expected, masculinity and femininity ratings were strongly and negatively correlated,  $r(30) = -.88$ ,  $p < .001$ , suggesting that coders, too, were thinking about gendered facial features in a dichotomous manner. Thus, to create gender inversion scores, we reverse-scored the masculinity ratings for each face and created a composite of the masculinity and femininity scores; higher numbers indicate greater gender inversion. The point-biserial correlation between targets' gender inversion scores and self-reported sexual orientation was positive and significant,  $r(30) = .37$ ,  $p = .05$ , indicating that self-identified gay male targets were indeed somewhat more likely to be perceived as more feminine and less masculine than straight targets.

## Results

**Analytic strategy.** Because each participant made ratings of 30 faces, we used generalized estimating equations (GEE) to adjust for interdependence in participants' judgments. GEE is ideal for estimating data collected within subjects across repeated measures and can be used for categorical and continuous outcomes (Ballinger, 2004; Liang & Zeger, 1986; Zeger & Liang, 1986). All models included main effects of political ideology (grand mean centered), targets' sexual orientation (coded as 1 = Gay and  $-1$  = Straight), and targets' gender inversion scores (grand mean centered).<sup>2</sup> All two- and three-way interactions were included. Because the ordering of faces was randomized, an exchangeable correlation matrix was specified for all models (see Ballinger, 2004).

**Time to categorize.** We first tested our prediction that liberals would take longer than conservatives to categorize targets' sexual orientation. The dependent variable in the GEE analysis was the time taken to make each judgment, measured in seconds. The average response latency was 5.59 s ( $SD = 4.24$ ). As hypothesized, the analysis yielded a significant main effect of perceiver ideology ( $B = -.28$ ,  $SE = .06$ ,  $p < .001$ ,  $z = -4.23$ ), such that liberals took significantly longer to make their judgments than did conservatives. There were no main effects of sexual orientation ( $B = .04$ ,  $SE = .05$ ,  $p = .46$ ,  $z = .74$ ) or gender inversion ( $B = .05$ ,  $SE = .05$ ,  $p = .39$ ,  $z = 0.87$ ) on response latencies. None of the two- or three-way interactions were significant ( $ps > .51$ ).

**Categorization of sexual orientation.** Next, we investigated our prediction that targets' gender inversion scores would predict conservatives' sexual orientation judgments to a greater degree than liberals' judgments. For this model, the outcome variable was perceivers' sexual orientation judgments (0 = straight and 1 = gay). A binary logistic model was specified, so all effects refer to an increase in the likelihood of categorizing a given target as gay (vs. straight).

Results revealed a main effect of target sexual orientation ( $B = .15$ ,  $SE = .03$ ,  $p < .001$ ,  $z = 4.29$ ), indicating that gay targets were more likely to be categorized as gay than straight. Thus, participants were fairly accurate in general. Replicating past research (Freeman et al., 2010), there was also a main effect of gender inversion ( $B = .10$ ,  $SE = .04$ ,  $p = .009$ ,  $z = 2.61$ ), indicating that the likelihood of categorizing targets as gay increased with greater gender inversion. Thus, participants were indeed using gender inversion cues to make their judgments. The main effect of ideology was not significant ( $B = -.009$ ,  $SE = .02$ ,  $p = .67$ ,  $z = -0.43$ ), indicating that the overall likelihood of categorizing a target person as gay did not differ for liberals and conservatives. Most important, we observed the hypothesized Ideology  $\times$  Gender Inversion interaction ( $B = .08$ ,  $SE = .02$ ,  $p < .001$ ,  $z = 4.21$ ). No other two- or three-way interactions were significant ( $ps > .24$ ). We unpacked the interaction between perceiver ideology and target gender inversion by inspecting the association between targets' gender inversion and perceivers' likelihood of categorizing a target as gay separately for conservatives (1  $SD$  above the ideology mean) and liberals (1  $SD$  below the ideology mean; Aiken & West, 1991).

**Conservative perceivers.** Figure 1 displays the predicted likelihood of categorizing a target as gay. For conservative perceivers, there was a simple main effect of gender inversion ( $B = .28$ ,  $SE = .06$ ,  $p < .001$ ,  $z = 4.58$ ). That is, as targets' gender inversion increased, the likelihood that conservatives would categorize them as gay increased. Importantly, the simple two-way Gender Inversion  $\times$  Sexual Orientation interaction was not significant ( $B = .06$ ,  $SE = .04$ ,  $p = .18$ ,  $z = 1.32$ ), which means that conservatives applied gender inversion cues when making judgments of all targets, regardless of targets' actual sexual orientation.

<sup>2</sup> In Studies 1 and 2, perceivers' sexual orientation (coded as heterosexual vs. not heterosexual) did not influence how they used gendered facial cues to make sexual orientation judgments. That is, the perceiver's sexual orientation did not interact with target gender inversion to predict the likelihood of categorizing a target as gay (or the likelihood of making an accurate categorization). In Study 3, the perceiver's sexual orientation did not predict stereotype endorsement, suggesting that sexual minorities and heterosexuals endorsed gender inversion stereotypes to the same extent. At the same time, the question of whether perceivers' sexual orientation influences cue usage was not the central focus of the present research, and so there were fairly small numbers of sexual minorities in all studies (Study 1: four gay men, six lesbians, six bisexuals, and two "other" sexual orientations; Study 2: four gay men, eight lesbians, eighteen bisexuals, three "other" sexual orientations, and four no sexual orientation specified; Study 3: two gay men, one lesbian, eight bisexuals, four "other" sexual orientations, and two no sexual orientation specified). Thus, we wish to emphasize that the present data do not allow us to make strong conclusions about whether sexual minorities differ from heterosexuals in their use of gendered facial cues when making sexual orientation judgments. This question could be addressed in future research.

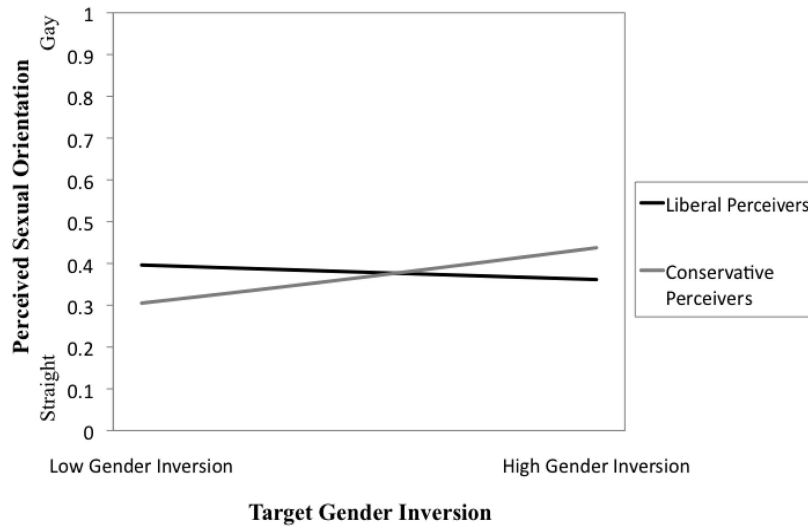


Figure 1. Likelihood of categorizing a target as gay as a function of the target’s gender inversion plotted at one standard deviation above and below the gender inversion mean. Separate lines are plotted for liberal and conservative perceivers at one standard deviation below and above the ideology mean, respectively (Study 1).

**Liberal perceivers.** As illustrated in Figure 1, for liberal perceivers, neither the simple main effect of gender inversion ( $B = -.07, SE = .05, p = .18, z = -1.33$ ) nor the simple two-way Gender Inversion  $\times$  Sexual Orientation interaction ( $B = .02, SE = .05, p = .76, z = 0.32$ ) was significant. Thus, targets’ level of gender inversion was not associated with the likelihood that liberals would categorize targets as gay, regardless of targets’ actual sexual orientation. These results clearly support the hypothesis that liberals are less likely to rely on gender inversion cues when making their categorization judgments than conservatives. In sum, conservatives consistently used gender inversion cues to categorize targets, whereas liberals did not.

**Accuracy.** We next tested the prediction that the accuracy of conservatives’ but not liberals’ judgments would vary as a function of cue validity (see Footnote 3 for signal detection analyses of accuracy).<sup>3</sup> For this GEE analysis, accuracy was the dependent variable (0 = inaccurate judgment and 1 = accurate judgment). Once again, a binary logistic model was specified (see Freeman et al., 2010, for a similar strategy for examining accuracy). Note that the main effect of target sexual orientation tests whether the likelihood of making an accurate judgment is greater for gay than straight targets. The main effect of political ideology tests whether the likelihood of being accurate increases as perceivers become more conservative, and the main effect of gender inversion tests whether the likelihood of making an accurate judgment increases as targets become more gender-inverted. The main effects and interactions specified in this model were consistent with those specified in the model examining perceived sexual orientation.

Results revealed a main effect of sexual orientation ( $B = -.51, SE = .05, p < .001, z = -9.96$ ), such that perceivers were more likely to accurately categorize straight versus gay targets. There was not a significant main effect of political ideology ( $B = .001, SE = .01, p = .95, z = 0.07$ ), indicating that liberals and conservatives did not differ in the overall accuracy of their judgments. Nor was there a significant main effect of gender inversion ( $B =$

$.04, SE = .03, p = .24, z = 1.19$ ), indicating that overall levels of accuracy did not differ as a function of targets’ level of gender inversion.

There was a significant two-way Gender Inversion  $\times$  Sexual Orientation interaction ( $B = .10, SE = .04, p = .009, z = 2.61$ ), such that gay targets were more accurately categorized as their degree of gender inversion increased ( $B = .14, SE = .05, p = .006, z = 2.77$ ). No other two-way interactions were significant ( $ps > .52$ ). Importantly, the hypothesized Ideology  $\times$  Sexual Orientation  $\times$  Gender Inversion interaction emerged ( $B = .08, SE = .02, p < .001, z = 4.29$ ). We decomposed the three-way interaction by examining the Sexual Orientation  $\times$  Gender Inversion two-way interaction separately for conservatives (1 *SD* above the ideology mean) and liberals (1 *SD* below the ideology mean).

**Conservative perceivers.** For conservative perceivers, the main effect of gender inversion was not significant ( $B = .06, SE = .04, p = .19, z = 1.32$ ). However, as expected, the interaction between gender inversion and sexual orientation was significant ( $B = .28, SE = .06, p < .001, z = 4.63$ ). As shown in Figure 2, as targets’ level of gender inversion increased, conservatives became more accurate in their judgments of gay targets ( $B = .34, SE = .08, p < .001, z = 4.38$ ), but less accurate in their judgments of straight targets ( $B = -.22, SE = .07, p = .002, z = -3.09$ ).

<sup>3</sup> We also used signal detection analyses to investigate levels of accuracy while accounting for response biases (Swets, Tanner, & Birdsall, 1961). We defined gay categorizations as the signal so that for gay targets, accurate judgments were coded as hits and inaccurate judgments as misses. For straight targets, accurate judgments were coded as correct rejections and inaccurate judgments as false alarms. In Studies 1 and 2, participants exhibited better than chance accuracy in their categorization judgments ( $ts \geq 2.11, ps \leq .04$ ). They also evidenced a response bias to categorize targets as straight than gay ( $ts \geq 5.12, ps < .001$ ). These results replicate previous research on the categorization of sexual orientation judgments (e.g., Rule, Ambady, & Hallett, 2009).

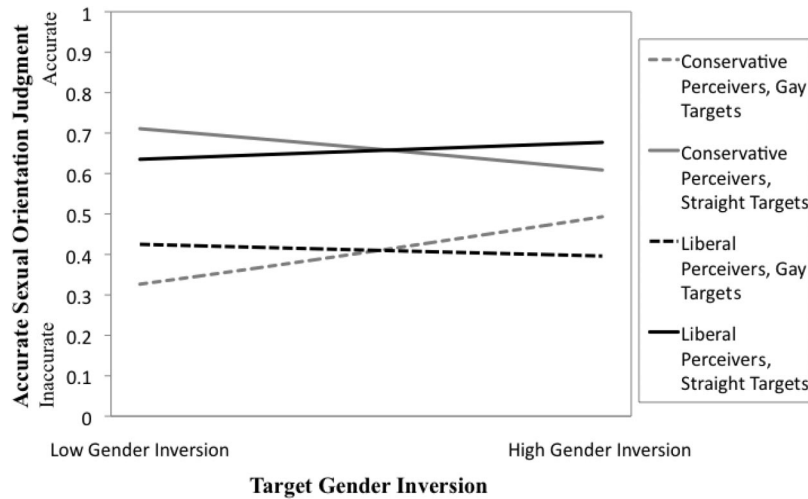


Figure 2. Likelihood of accurately categorizing a target's sexual orientation as a function of the target's gender inversion plotted at one standard deviation above and below the gender inversion mean. Separate lines are plotted for liberal and conservative perceivers at one standard deviation below and above the ideology mean, respectively, according to targets' actual sexual orientations (Study 1).

**Liberal perceivers.** For liberal perceivers, neither the simple main effect of target gender inversion ( $B = .02$ ,  $SE = .05$ ,  $p = .74$ ,  $z = 0.34$ ) nor the Gender Inversion  $\times$  Sexual Orientation interaction were significant ( $B = -.08$ ,  $SE = .05$ ,  $p = .16$ ,  $z = -1.40$ ). Thus, as shown in Figure 2, targets' levels of gender inversion were not associated with the accuracy of liberals' judgments.

**Comparing conservative and liberal perceivers.** To test the hypothesis that conservatives would be more accurate than liberals, but only when stereotypical cues are valid, we compared the accuracy of liberals' and conservatives' judgments of gay and straight targets that were either high or low in gender inversion ( $\pm 1$   $SD$  above and below the mean). As illustrated in Figure 2, conservatives' judgments were more accurate than liberals' judgments of gay targets who were high in gender inversion ( $B = .09$ ,  $SE = .03$ ,  $p = .006$ ,  $z = 2.71$ ) and straight targets who were low in gender inversion ( $B = .08$ ,  $SE = .04$ ,  $p = .05$ ,  $z = 1.98$ ). At the same time, conservatives' judgments were less accurate than liberals' judgments of gay targets who were low in gender inversion ( $B = -.09$ ,  $SE = .04$ ,  $p = .02$ ,  $z = -2.39$ ) and straight targets who were high in gender inversion ( $B = -.06$ ,  $SE = .03$ ,  $p = .03$ ,  $z = -2.11$ ). Because conservatives consistently relied on gender inversion cues to categorize targets as gay or straight, they were more accurate than liberals when the association between targets' gendered facial cues and sexual orientation was stereotypical, but they were less accurate than liberals when the association was counterstereotypical.

## Discussion

We found that conservatives consistently relied on gender inversion cues to categorize targets' sexual orientation. Specifically, as targets' gender inversion increased, conservatives were more likely to categorize targets as gay. However, the target's level of gender inversion was unrelated to sexual orientation judgments for liberals. The lack of an association between targets' gender inversion and the likelihood that liberals would categorize a target as

gay suggests that liberals may have been engaging in a stereotype correction process, possibly adjusting their final judgments to make them less stereotypical. An alternative explanation is that even automatic aspects of the process of categorization operate differently for liberals and conservatives. To investigate this possibility and test a stereotype correction model of categorization, in Study 2 we manipulated perceivers' capacities to engage in effortful processing on the assumption that this would disrupt liberals' correction process.

## Study 2

In our first study, we demonstrated that liberals and conservatives do indeed differ in the use of gender inversion cues in making judgments about sexual orientation. However, it is possible that liberals simply do not *detect* the same gendered facial cues as conservatives or that liberals do not *associate* these gendered facial cues with sexual orientation. We theorized, on the contrary, that because gender inversion stereotypes about sexual orientation are widely known (Blashill & Powlishta, 2009; Herek, 1984; Kite & Deaux, 1987), liberals and conservatives would likely possess the same knowledge of stereotypes linking gender inversion cues to a target's sexual orientation but that liberals would be less likely than conservatives to apply them.

To test whether liberals were correcting their judgments away from the stereotype, participants in Study 2 made sexual orientation judgments while they were cognitively busy (or not). Cognitive busyness manipulations disrupt effortful processing and the ability to engage in the correction stage of judgment making (Gilbert & Osborne, 1989; Gilbert et al., 1988; Kruger, 1999; Pelham, Sumarta, & Myaskovsky, 1994; Skitka et al., 2002). Thus, we hypothesized that liberal perceivers' judgments of sexual orientation would be associated with targets' level of gender inversion when they were cognitively busy—consistent with the findings for conservatives. However, we expected to replicate the ideological difference in gendered cue usage in the absence of

cognitive busyness, insofar as liberals (more than conservatives) would adjust their judgments away from the stereotype. We also anticipated that if liberals who are distracted are prone to rely on their initial (stereotypical) impressions, then they should take no more time than conservatives to make their judgments, eliminating the response time difference between liberals and conservatives observed in Study 1. In general, we expected that the cognitive load manipulation would not affect conservatives' judgments or response latencies, insofar as automatic processing is unaffected by perceivers' level of cognitive busyness (Gilbert & Osborne, 1989; Skitka et al., 2002). In terms of accuracy, we hypothesized that for perceivers who are cognitively busy, accuracy would be related to targets' degree of gender inversion, regardless of ideology. Specifically, we expected that liberals, like conservatives, would show higher levels of categorization accuracy to the extent that there is greater validity in the stereotypic cues. In other words, cognitive load should reduce or eliminate the ideological differences in accuracy observed in Study 1.

In addition to testing a model of stereotype correction, we sought to rule out alternative explanations for why liberals and conservatives would differ in the extent to which they use gendered cues in making sexual orientation judgments. We focused on two potential explanations that have received considerable attention in the literature on stereotyping. The first is that ideological differences in sexual orientation judgments are due to the fact that liberals hold less prejudiced attitudes toward gay men than do conservatives (see, e.g., Heaven & Oxman, 1999; Jost, Banaji, & Nosek, 2004; Whitley & Lee, 2000). Indeed, research on stereotype correction has found that low-prejudiced perceivers are more likely to suppress the use of stereotypes than are high-prejudiced perceivers (Devine, 1989; Monteith, Sherman, & Devine, 1998). To investigate this issue, we measured participants' attitudes toward gay men and assessed the extent to which prejudice accounted for ideological differences in the use of gender inversion cues.

A second possibility is that individuals who have more social contact with gay men experience greater diversity and are therefore less likely to apply stereotypes. According to past research, greater levels of intergroup contact are associated with increased perceptions of outgroup heterogeneity (P. W. Linville, Fischer, & Salovey, 1989; Quattrone, 1986) and less use of stereotypes in judgment formation (Brown & Hewstone, 2005; Pettigrew, 1998). It is quite possible that liberals, on average, have more contact with gay men than do conservatives (Herek & Capitanio, 1996; Hodson & Busseri, 2012). Thus, ideological differences in the use of gender inversion cues could be attributable to differences in social contact. To investigate this possibility, we measured prior contact experiences and assessed the extent to which these accounted for differences in the use of stereotypical cues.

## Method

**Participants and stimuli.** Two hundred sixty-two participants (169 women;  $M_{\text{age}} = 34.4$  years,  $SD = 13.13$ , age range = 18–81 years; 225 heterosexual, 12 gay/lesbian, 18 bisexual, three "other" sexual orientations, and four no sexual orientation specified) were recruited online through the Mechanical Turk website. Fourteen additional participants completed the experiment but

failed the cognitive load manipulation check as described below and so were excluded from analyses. We used the same stimuli from Study 1 and gave participants the same general instructions.

### Procedure.

**Cognitive load manipulation.** Participants were provided with a link on the Mechanical Turk website that took them to the experiment, which was programmed using Qualtrics online survey software. Participants were randomly assigned to make sexual orientation judgments under cognitive load or not. Participants assigned to the cognitive load condition ( $n = 123$ ) were presented with a seven-digit alphanumeric code (7T4\$RF%) and were asked to mentally rehearse the code while completing the study. This method has been used in prior research to manipulate cognitive busyness (Gilbert & Osborne, 1989; Lalwani, 2009; Pontari & Schlenker, 2000). Participants assigned to the nonbusy condition ( $n = 139$ ) did not receive these instructions and proceeded directly to the sexual orientation judgment task.

**Sexual orientation judgments.** Participants learned that they would be shown several male faces and asked to determine whether each individual was gay or straight. They were given no information regarding how many of the targets identified as gay or straight. All participants were shown the same 30 White male faces from Study 1, one at a time in random order. They categorized each face by checking one of two boxes (labeled *gay* and *straight*) and pressed a button to submit their response. As before, participants were given as much time as they needed to make their judgments.

**Cognitive load manipulation check and political ideology.** To ensure that participants in the cognitively busy condition were mentally rehearsing the code, every time they completed five judgments, a screen appeared and they were asked to type in the code that was presented at the beginning of the study. Because participants made 30 judgments, participants assigned to the cognitively busy condition were asked to enter the code a total of six times. We made the a priori decision to exclude participants from analyses if they made two or more errors in reporting the code, insofar as they were probably not rehearsing the code and therefore not cognitively busy. On the basis of this criterion, 14 participants (5%) were excluded from the overall sample, as noted above.

To collect additional information concerning the effects of cognitive busyness, all participants responded to the following two items, which were adapted from Skitka et al. (2002): "How difficult was it to concentrate while making the sexual orientation judgments?" and "How distracted did you feel while making the sexual orientation judgments?" Participants responded to these items on a response scale ranging from 1 (*not at all distracted*) to 7 (*extremely distracted*). Participants then completed the Attitudes Toward Gay Men Scale ( $\alpha = .91$ ; Herek, 1988; higher numbers indicate greater levels of prejudice); indicated how frequently they interacted with gay men (ranging from 1 = *never* to 7 = *daily*); reported their political ideology in response to the question "Where on the following scale of political orientation would you place yourself?" (1 = *extremely liberal*; 5 = *moderate*; 9 = *extremely conservative*); and provided basic demographic information, including their age, sex, and sexual orientation. As in Study 1, ideology scores were close to the scale midpoint but slightly liberal on average ( $M = 4.20$ ,  $SD = 2.26$ ).



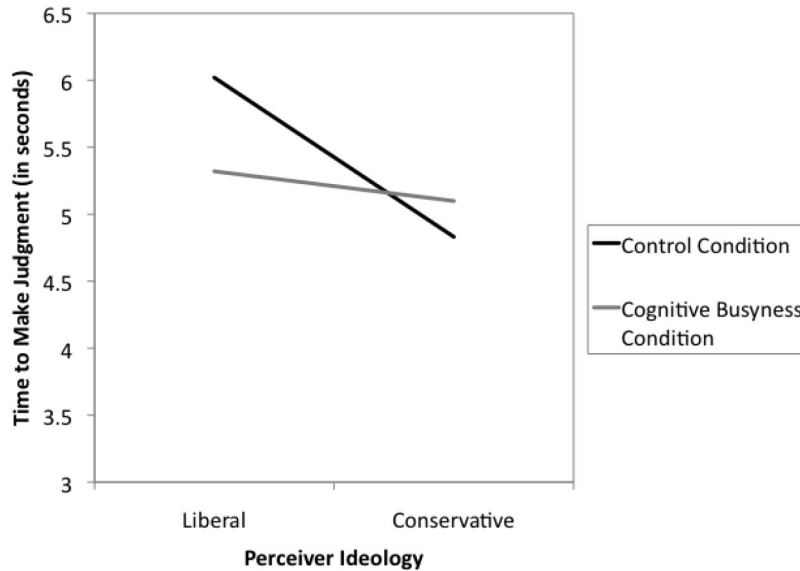


Figure 3. Time taken to categorize targets by condition (cognitive busyness, control) according to perceiver ideology, plotted at one standard deviation below and above the ideology mean (Study 2).

## Results

**Cognitive load manipulation check.** Because each participant provided a single response to each of the cognitive busyness manipulation check items, we analyzed responses to the concentration and distraction items using ordinary least squares regression. As expected, participants who were asked to rehearse the code while making their judgments reported that it was more difficult to concentrate ( $B = .32$ ,  $SE = .11$ ),  $t(258) = 2.88$ ,  $p = .004$  (control condition:  $M = 3.99$ ,  $SD = 1.73$ ; cognitive load condition:  $M = 4.61$ ,  $SD = 1.87$ ), and that they felt significantly more distracted while making their sexual orientation judgments ( $B = .45$ ,  $SE = .12$ ),  $t(258) = 3.71$ ,  $p < .001$  (control condition:  $M = 3.88$ ,  $SD = 1.99$ ; cognitive load condition:  $M = 4.75$ ,  $SD = 1.85$ ). There were neither main effects of ideology nor interactions between ideology and the cognitive load condition on the manipulation check items ( $ps > .28$ ).

**Analytic strategy.** As in Study 1, we used GEE to estimate all models in order to adjust for nonindependence in participants' judgments across their ratings of the 30 faces (Ballinger, 2004; Zeger & Liang, 1986). All models included main effects of political ideology (grand mean centered), targets' sexual orientation (coded 1 = Gay and  $-1$  = Straight), targets' gender inversion scores (grand mean centered), and the cognitive busyness manipulation (coded Cognitive Busyness Condition = 1 and Control Condition =  $-1$ ). All two-, three-, and four-way interactions were included in the model. Because the faces were presented in random order, an exchangeable correlation matrix was specified for all models (see Ballinger, 2004).

**Time to categorize.** We first tested the hypothesis that liberals would take longer to make their judgments than would conservatives, but only in the absence of cognitive busyness. The time taken to make each judgment, measured in seconds, constituted the dependent variable. The analysis revealed a significant main effect of ideology ( $B = -.16$ ,  $SE = .05$ ,  $p = .001$ ,  $z = -3.26$ ), such that

liberals took longer to categorize targets than did conservatives. There were no significant main effects of targets' sexual orientation ( $B = .02$ ,  $SE = .05$ ,  $p = .75$ ,  $z = 0.32$ ) or gender inversion ( $B = .03$ ,  $SE = .05$ ,  $p = .60$ ,  $z = 0.54$ ). The main effect of cognitive busyness was not significant ( $B = -.11$ ,  $SE = .12$ ,  $p = .38$ ,  $z = -0.89$ ), indicating that perceivers who were cognitively busy took approximately the same amount of time to make their judgments as participants assigned to the control condition. As expected, the main effect of ideology was qualified by an interaction with the cognitive load manipulation ( $B = .11$ ,  $SE = .05$ ,  $p = .03$ ,  $z = 2.24$ ), indicating that the association between ideology and time taken to categorize the targets differed as a function of the cognitive load manipulation. No other two-, three-, or four-way interactions were significant ( $ps > .19$ ).

We unpacked the interaction between perceiver ideology and cognitive busyness by looking at the association between perceiver ideology and categorization latency separately for perceivers who received the cognitive load manipulation and those who did not. Figure 3 displays the predicted values for liberal (1 *SD* below the ideology mean) and conservative (1 *SD* above the ideology mean) perceivers in the control condition and cognitive load condition.<sup>4</sup> In the control condition, there was a main effect of perceiver ideology ( $B = -.26$ ,  $SE = .08$ ,  $p = .001$ ,  $z = -3.35$ ), indicating that liberals took more time to make their judgments than did conservatives. This finding replicates the results of Study 1. For

<sup>4</sup> It also possible to unpack the interaction by testing for the simple main effect of the cognitive load manipulation for liberal (1 *SD* below the ideology mean) and conservative (1 *SD* above the ideology mean) perceivers. For liberal participants, there was a simple main effect of cognitive load ( $B = -.35$ ,  $SE = .17$ ,  $p = .04$ ,  $z = -2.04$ ), indicating that liberals who were cognitively busy took significantly less time, on average, to make their judgments than did liberals assigned to the control condition. As anticipated, the simple main effect of cognitive load was not significant for conservatives ( $B = .13$ ,  $SE = .15$ ,  $p = .39$ ,  $z = 0.87$ ).

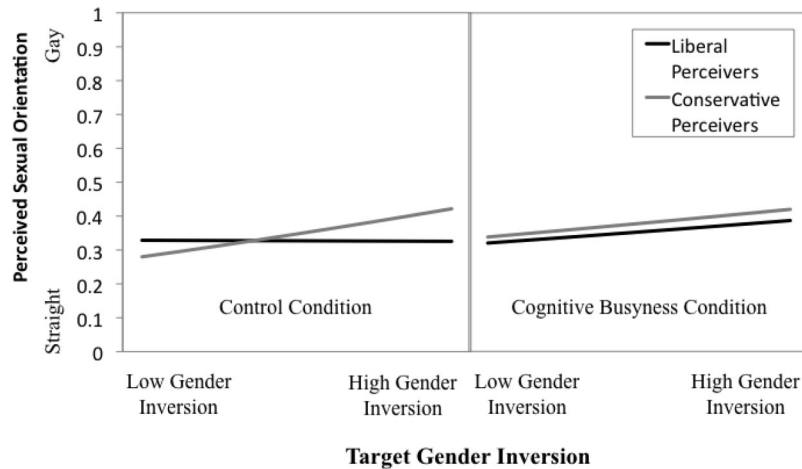


Figure 4. Likelihood of categorizing a target as gay as a function of gender inversion, plotted at one standard deviation above and below the gender inversion mean. Separate graphs are presented for cognitively busy and nonbusy perceivers, and separate lines refer to liberal and conservative perceivers at one standard deviation below and above the ideology mean, respectively (Study 2).

perceivers who were cognitively busy, however, there was no main effect of perceiver ideology ( $B = -.05, SE = .05, p = .36, z = -0.92$ ), revealing that liberals and conservatives took similar amounts of time to make their judgments. In sum, then, liberals took significantly longer than conservatives to make their sexual orientation judgments, but only in the absence of cognitive load.

**Perceived sexual orientation.** We tested the hypothesis that the association between targets' gender inversion and the likelihood of categorizing a target as gay would differ for liberals and conservatives, but this difference would be attenuated under cognitive load. For this model, the outcome variable was perceivers' sexual orientation judgments (0 = straight and 1 = gay). A binary logistic model was specified, and all effects refer to an increase in the likelihood of categorizing a target person as gay. Consistent with past research (Hodson & Busseri, 2012; Jost et al., 2004), political ideology was associated with attitudes toward gay men,  $r(262) = .37, p < .001$ , and contact with gay men,  $r(262) = -.31, p < .001$ , such that greater liberalism predicted more positive attitudes toward, and more prior contact with, gay men. To determine whether prejudice and contact with gay men explained why liberals and conservatives differed in gendered cue usage, we first included prejudice and social contact as covariates in all models. Adjusting for prejudice and social contact did not affect any results, suggesting that they did not explain ideological differences in cue usage. Thus, they were trimmed from the final models reported below.

Results revealed a main effect of sexual orientation ( $B = .08, SE = .02, p = .001, z = 3.32$ ), indicating that gay targets were more likely to be categorized as gay than as straight. A main effect of target gender inversion ( $B = .15, SE = .02, p < .001, z = 6.26$ ) was also obtained, indicating that the likelihood that a target would be categorized as gay increased as gender inversion increased. There were no main effects of ideology ( $B = .02, SE = .02, p = .25, z = 1.15$ ) or cognitive busyness ( $B = .06, SE = .04, p = .15, z = 1.46$ ). An Ideology  $\times$  Gender inversion interaction emerged ( $B = .04, SE = .01, p = .002, z = 3.08$ ), which was qualified by

the hypothesized three-way Perceiver Ideology  $\times$  Gender Inversion  $\times$  Cognitive Load interaction ( $B = -.03, SE = .01, p = .008, z = -2.67$ ). No other two-, three-, or four-way interactions were significant ( $ps > .21$ ). To unpack the three-way interaction, we explored the Perceiver Ideology  $\times$  Gender Inversion two-way interaction separately for each experimental condition.<sup>5</sup>

**Control condition.** As shown in Figure 4, there was a significant Ideology  $\times$  Gender Inversion interaction for perceivers assigned to the control condition ( $B = .07, SE = .02, p < .001, z = 4.08$ ). We decomposed this interaction by looking at the association between targets' gender inversion and the likelihood of categorizing a target as gay separately for conservatives (1 SD above the ideology mean) and liberals (1 SD below the ideology mean). Replicating the results of Study 1, the likelihood that targets would be categorized as gay increased with gender inversion for conservative perceivers ( $B = .31, SE = .06, p < .001, z = 5.25$ ), but not for liberal perceivers ( $B = -.01, SE = .04, p = .87, z = -0.16$ ). Furthermore, the simple two-way interaction between targets' gender inversion and sexual orientation was not significant for conservatives ( $B = -.06, SE = .06, p = .28, z = -1.07$ ), indicating once again that they applied gender inversion cues to categorize targets, regardless of the targets' actual sexual orientation.

<sup>5</sup> Another way to unpack the Cognitive Load  $\times$  Ideology  $\times$  Gender Inversion interaction is to inspect the Cognitive Load  $\times$  Gender Inversion interaction separately for conservatives and liberals. The interaction was not significant for conservatives ( $B = -.06, SE = .04, p = .16, z = -1.41$ ), suggesting that the association between targets' gender inversion and the likelihood of categorizing targets as gay was unaffected by the cognitive load manipulation. As hypothesized, the interaction was significant for liberals ( $B = .07, SE = .03, p < .05, z = 2.21$ ). As gender inversion increased, the likelihood that liberals would categorize a target as gay increased for those under cognitive load ( $B = .14, SE = .05, p = .006, z = 2.75$ ), but not for those assigned to the control condition ( $B = -.01, SE = .04, p = .87, z = -0.16$ ).

**Cognitive load condition.** The analysis yielded a significant simple main effect of gender inversion for perceivers who were cognitively busy while making their judgments ( $B = .16$ ,  $SE = .03$ ,  $p < .001$ ,  $z = 4.48$ ; see Figure 4). As gender inversion increased, the likelihood that targets would be categorized as gay increased. In this condition, the Ideology  $\times$  Gender Inversion simple interaction was not significant ( $B = .01$ ,  $SE = .02$ ,  $p = .75$ ,  $z = 0.35$ ), revealing that the relationship between targets' gender inversion and the likelihood of categorizing targets as gay did not differ for liberals and conservatives when under cognitive load. Thus, cognitively busy perceivers used gender inversion cues to make sexual orientation judgments regardless of their political ideology.

**Ruling out prejudice and contact as proxies for ideology.** As noted above, adjusting for prejudice and social contact with gay men did not change the findings reported above. Furthermore, we sought to rule out the possibility that prejudice and social contact were simply proxies for political ideology.

**Testing prejudice as a proxy for ideology.** To investigate the possibility that prejudice would show the same effects as ideology and predict gendered cue usage, we tested a model in which attitudes toward gay men, target gender inversion, target sexual orientation, cognitive load, and all interactions predicted perceivers' sexual orientation judgments. For this model, the outcome variable was perceivers' sexual orientation judgments (0 = straight and 1 = gay). A binary logistic model was specified, and all effects refer to the increase in likelihood of categorizing a target person as gay. Results revealed a main effect of sexual orientation ( $B = .08$ ,  $SE = .02$ ,  $p = .001$ ,  $z = 3.27$ ), indicating that gay targets were more likely to be categorized as gay than straight. There was also a main effect of gender inversion ( $B = .15$ ,  $SE = .02$ ,  $p < .001$ ,  $z = 5.85$ ), indicating that the likelihood that targets would be categorized as gay increased as gender inversion increased. Importantly, however, neither the two-way Gender Inversion  $\times$  Prejudice interaction ( $B = -.001$ ,  $SE = .02$ ,  $p = .98$ ,  $z = -0.03$ ) nor the three-way Cognitive Load  $\times$  Gender Inversion  $\times$  Prejudice interaction ( $B = -.003$ ,  $SE = .02$ ,  $p = .87$ ,  $z = -0.16$ ) were significant. Thus, perceivers' levels of prejudice did not affect the likelihood of using gendered facial cues to make sexual orientation judgments, regardless of whether the perceiver was under cognitive load or not. No other main effects or interactions were significant ( $ps > .12$ ).

**Testing social contact as a proxy for ideology.** To consider the possibility that contact with gay men would show the same effects as ideology and predict gendered cue usage, we ran the same model replacing attitudes toward gay men with prior contact with gay men. This analysis revealed a main effect of sexual orientation ( $B = .08$ ,  $SE = .02$ ,  $p = .001$ ,  $z = 3.35$ ), indicating that gay targets were more likely to be categorized as gay than straight, and a main effect of gender inversion ( $B = .14$ ,  $SE = .02$ ,  $p < .001$ ,  $z = 5.83$ ), indicating that the likelihood that targets would be categorized as gay increased as gender inversion increased. Both the two-way Gender Inversion  $\times$  Contact interaction ( $B = -.02$ ,  $SE = .01$ ,  $p = .23$ ,  $z = -1.19$ ) and the three-way Gender Inversion  $\times$  Cognitive Load  $\times$  Contact interaction ( $B = .02$ ,  $SE = .01$ ,  $p = .26$ ,  $z = 1.12$ ) were not significant. Thus, contact with gay men did not influence the likelihood of using gender inversion cues to make sexual orientation judgments, regardless of whether perceivers

were under cognitive load or not. No other main effects or interactions were significant ( $ps > .11$ ).

**Accuracy.** We investigated the hypothesis that the relationship between targets' gender inversion and the likelihood of making an accurate judgment would differ for conservatives and liberals, but only in the absence of cognitive load. In this binary logistic GEE analysis, accuracy was the dependent variable (0 = inaccurate judgment and 1 = accurate judgment). We first included prejudice and social contact with gay men as covariates in all models to determine whether they explained ideological differences in the relationship between targets' gender inversion and the likelihood of making an accurate judgment. Adjusting for prejudice and social contact did not affect any results, so they were trimmed from the final models reported below.

Results revealed a significant main effect of sexual orientation ( $B = -.61$ ,  $SE = .04$ ,  $p < .001$ ,  $z = -14.41$ ). Straight targets were more accurately categorized than gay targets. The main effect of ideology was not significant ( $B = .01$ ,  $SE = .01$ ,  $p = .21$ ,  $z = 1.26$ ), indicating that liberals and conservatives did not differ in the overall accuracy of their judgments. There were no significant main effects of gender inversion ( $B = -.02$ ,  $SE = .03$ ,  $p = .42$ ,  $z = -0.80$ ) or cognitive busyness ( $B = -.01$ ,  $SE = .02$ ,  $p = .79$ ,  $z = -0.29$ ). As in Study 1, the analysis yielded a significant Sexual Orientation  $\times$  Gender Inversion interaction ( $B = .15$ ,  $SE = .02$ ,  $p < .001$ ,  $z = 6.23$ ) and an Ideology  $\times$  Sexual Orientation  $\times$  Gender Inversion interaction ( $B = .04$ ,  $SE = .01$ ,  $p = .002$ ,  $z = 3.17$ ). No other two- or three-way interactions attained significance ( $ps > .14$ ). Importantly, the hypothesized four-way Ideology  $\times$  Sexual Orientation  $\times$  Gender Inversion  $\times$  Cognitive Load interaction was significant ( $B = -.03$ ,  $SE = .01$ ,  $p = .007$ ,  $z = -2.67$ ). To decompose this four-way interaction, we explored the three-way Ideology  $\times$  Sexual Orientation  $\times$  Gender Inversion simple interaction separately for perceivers assigned to each experimental condition.<sup>6</sup>

<sup>6</sup> There are several different ways to unpack the four-way Cognitive Load  $\times$  Ideology  $\times$  Gender Inversion  $\times$  Sexual Orientation interaction. One possibility is to inspect the three-way Cognitive Load  $\times$  Gender Inversion  $\times$  Sexual Orientation interaction separately for conservatives and liberals. The three-way interaction was not significant for conservatives ( $B = -.06$ ,  $SE = .04$ ,  $p = .15$ ,  $z = -1.44$ ), suggesting that the interaction between gender inversion and target sexual orientation was unaffected by cognitive load. As expected, the three-way interaction was significant for liberals ( $B = .08$ ,  $SE = .03$ ,  $p = .03$ ,  $z = 2.23$ ). Consistent with the analysis reported in the main text, the simple two-way Gender Inversion  $\times$  Sexual Orientation interaction was not significant for liberals assigned to the control condition ( $B = -.01$ ,  $SE = .04$ ,  $p = .85$ ,  $z = -0.18$ ). However, this interaction was significant for liberals who were cognitively busy ( $B = .14$ ,  $SE = .05$ ,  $p = .006$ ,  $z = 2.75$ ). As gender inversion increased, cognitively busy liberals became marginally more accurate in their judgments of gay targets ( $B = .12$ ,  $SE = .07$ ,  $p = .10$ ,  $z = 1.62$ ) and less accurate in their judgments of straight targets ( $B = -.16$ ,  $SE = .08$ ,  $p = .05$ ,  $z = -1.97$ ). Another way to decompose this three-way simple interaction for liberal perceivers is to look at the Cognitive Load  $\times$  Gender Inversion simple interaction separately for gay and straight targets. For judgments of straight targets, the interaction was marginally significant ( $B = -.09$ ,  $SE = .05$ ,  $p = .06$ ,  $z = -1.86$ ), indicating that the association between straight targets' gender inversion and liberal perceivers' accuracy of straight targets differed as a function of cognitive load. The Cognitive Load  $\times$  Gender Inversion interaction was not significant for judgments of gay targets ( $B = .06$ ,  $SE = .05$ ,  $p = .24$ ,  $z = 1.18$ ).

**Control condition.** As shown in Figure 5, the three-way Ideology  $\times$  Gender Inversion  $\times$  Sexual Orientation interaction was significant for perceivers assigned to the control condition ( $B = .07, SE = .02, p < .001, z = 4.17$ ). We decomposed this interaction by looking at the simple two-way Gender Inversion  $\times$  Sexual Orientation interaction separately for conservatives (1 *SD* above the ideology mean) and liberals (1 *SD* below the ideology mean). Unpacking the interaction in this way allowed us to see whether the association between targets' level of gender inversion and the likelihood of accurately categorizing gay and straight targets differs for conservatives and liberals. In other words, this analysis provided an opportunity to replicate the results of Study 1.

For conservatives assigned to the control condition, the two-way Gender Inversion  $\times$  Sexual Orientation interaction was significant ( $B = .31, SE = .06, p < .001, z = 5.29$ ). As gender inversion increased, conservatives' accuracy in judging gay targets increased ( $B = .24, SE = .08, p = .002, z = 3.06$ ), but their accuracy in judging straight targets decreased ( $B = -.37, SE = .09, p < .001, z = -4.34$ ). For liberals assigned to the control condition, neither the simple main effect of gender inversion ( $B = .02, SE = .04, p = .66, z = 0.45$ ) nor the two-way Gender Inversion  $\times$  Sexual Orientation interaction was significant ( $B = -.01, SE = .04, p = .85, z = -0.18$ ). Thus, as in Study 1, targets' gender inversion was associated with categorization accuracy for conservatives but not liberals.

We next tested our prediction that conservatives would be more accurate than liberals in the control condition, but only to the extent that the stereotypical cues possessed validity. As before, we compared conservatives' and liberals' levels of accuracy separately for gay and straight targets who were high (1 *SD* above the mean) and low (1 *SD* below the mean) in gender inversion. As illustrated in Figure 5, conservatives were significantly more accurate than liberals in judging gay targets who were high in gender inversion ( $B = .09, SE = .03, p = .01, z = 2.58$ ), and they were marginally more accurate in judging straight targets who were low in gender inversion ( $B = .08, SE = .04, p = .056, z = 1.92$ ).

Conservatives, however, were less accurate than liberals in judging straight targets who were high in gender inversion ( $B = -.10, SE = .04, p = .009, z = -2.62$ ). There were no differences between liberals and conservatives in the accuracy of judgments of gay targets who were low in gender inversion ( $B = -.02, SE = .04, p = .66, z = -0.44$ ). As in Study 1, then, conservatives consistently relied on stereotypes linking gendered facial cues to sexual orientation when categorizing targets. This led them to be more accurate than liberals when the stereotypic association between targets' gender inversion and sexual orientation held and less accurate when it did not.

**Cognitive load condition.** As shown in Figure 6, the Gender Inversion  $\times$  Sexual Orientation interaction was significant for perceivers who were distracted by cognitive load ( $B = .15, SE = .03, p < .001, z = 4.45$ ). As gender inversion increased, these participants became more accurate in their judgments of gay targets ( $B = .14, SE = .05, p = .006, z = 2.73$ ) and less accurate in their judgments of straight targets ( $B = -.17, SE = .05, p = .001, z = -3.30$ ). As hypothesized, the three-way Gender Inversion  $\times$  Sexual Orientation  $\times$  Ideology interaction was not significant ( $B = .01, SE = .02, p = .75, z = 0.29$ ), indicating that the relationship between targets' degree of gender inversion and the likelihood that they would be accurately categorized as gay or straight did not differ for liberals and conservatives. That is, cognitively busy liberals as well as conservatives used gender inversion cues to make their judgments; therefore, the accuracy of their judgments depended heavily on the validity of the cues.

**Discussion**

Although lower levels of prejudice and more contact with gay men are indeed associated with greater liberalism, these factors did not seem to influence the process of making judgments about sexual orientation, nor did they account for ideological differences in the use of gender inversion cues. Rather, as we theorized, political ideology interacted with cognitive busyness to predict the

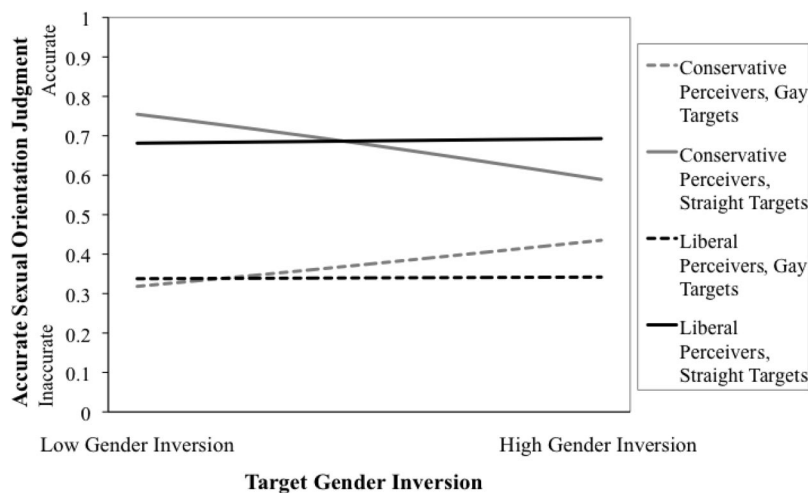


Figure 5. Likelihood of liberal and conservative perceivers (plotted on separate lines at 1 *SD* above and below the ideology mean) in the control condition accurately categorizing a target's sexual orientation as a function of the target's gender inversion, plotted at one standard deviation above and below the gender inversion mean (Study 2).

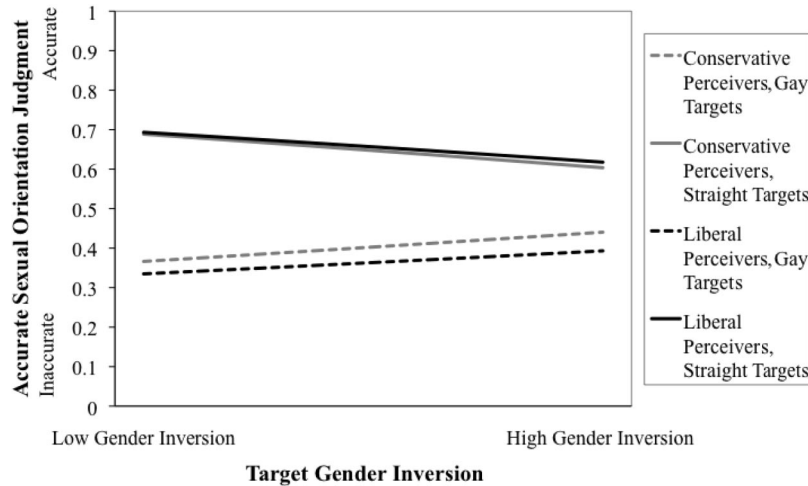


Figure 6. Likelihood of liberal and conservative perceivers (plotted on separate lines at 1 SD below and above the ideology mean) in the cognitively busy condition accurately categorizing a target's sexual orientation as a function of the target's degree of gender inversion, plotted at one standard deviation above and below the gender inversion mean (Study 2).

use of stereotypical cues in making sexual orientation judgments. As hypothesized, cognitive load prevented liberals from engaging in an effortful correction process, leading them to rely on gender inversion cues to the same extent as conservatives (cf. Skitka et al., 2002). Under cognitive load, liberals were just as accurate as conservatives when cues were valid (i.e., for gay targets high in gender inversion and straight targets low in gender inversion) and just as inaccurate when the cues were invalid (i.e., for gay targets low in gender inversion and straight targets high in gender inversion).

These results suggest that liberals and conservatives do not differ in terms of their automatic associations between gender inversion and sexual orientation. The relationship between targets' gender inversion and the likelihood of categorizing targets as gay was the same for liberals and conservatives under cognitive load, suggesting that there is no ideological difference in the perception of gender inversion. Rather, it appears that liberals and conservatives perceived the same facial cues and automatically linked them to the targets' sexual orientations. Where liberals and conservatives differ is in terms of their use of stereotypical cues in their deliberative judgments. When liberals possessed sufficient cognitive resources, they engaged in an effortful process of stereotype correction, adjusting their initial judgments in a counterstereotypical direction.

Although this study provides additional support for our theoretical argument, it remains unclear *why* liberals but not conservatives would engage in a secondary process of correction when it comes to making sexual orientation judgments. In Study 3, we investigated the possibility that ideological differences in cognitive style may lead liberals to be less likely than conservatives to assume that gender inversion cues possess validity. That is, we sought to determine whether liberals correct their initial judgments because they are less likely than conservatives to believe that the cues are valid indicators of a person's sexual orientation.

### Study 3

There were four main goals of Study 3. First, we sought to determine the extent to which stereotypes about gender inversion and sexual orientation are generally shared. In other words, we measured the extent to which perceivers have similar cultural *knowledge* of stereotypes linking gendered facial cues to sexual orientation. It is at least conceivable that perceivers have their own idiosyncratic stereotypes about how gay men look (cf. Kenny, 1994) and may not be very familiar with stereotypes linking gendered facial cues to sexual orientation. However, to the extent that perceivers are using shared stereotypes to infer targets' sexual orientation in their initial judgments, they should be relatively knowledgeable about these stereotypes. We also explored whether liberals and conservatives would differ in their awareness of these stereotypes. Although gender inversion stereotypes saturate mainstream culture (Blashill & Powlishta, 2009; Kite & Deaux, 1986, 1987; McConaghy & Zamir, 1995), it is possible that liberals would report less knowledge of these stereotypes, and this could explain why they are less likely to use gender inversion cues. This seemed unlikely, given that liberals did use gendered facial cues to the same extent as conservatives when they were cognitively busy in Study 2. Nevertheless, we decided to compare liberals' and conservatives' cultural knowledge of stereotypes about gendered facial features and sexual orientation directly.

Second, we sought to test the hypothesis that liberals would be less likely than conservatives to believe that gender inversion cues are valid (i.e., that gender-inverted faces are more likely to be gay). Participants in Study 3 rated the extent to which they believe gay men possess stereotypically feminine facial features. Recall that at the end of Study 1, we had participants list features that they had used to make their sexual orientation judgments. We used these same features in Study 3 to measure the extent to which perceivers *endorse* stereotypes about how gay men look. Comparing liberals

and conservatives in terms of stereotype endorsement allowed us to examine *why* the characteristic cognitive style of liberals would lead them to partake in a corrective process when making sexual orientation judgments.

Third, we sought to augment the findings of Study 2, which suggested that engaging in effortful processing helps to explain ideological differences in the use of gender inversion cues. We did so by measuring the *motivation* to engage in effortful thought as an individual-difference variable. Measuring cognitive style in this way allowed us to focus on the process by which political ideology is related to stereotype endorsement and application. We hypothesized that liberals would be less likely than conservatives to believe that gendered facial cues are associated with sexual orientation, at least in part because they prefer to engage in more complex, effortful thought. To test this hypothesis, we measured participants' need for cognition, which captures the extent to which perceivers enjoy and engage in effortful cognitive activity (Cacioppo & Petty, 1982; Cacioppo, Petty, Kao, & Rodriguez, 1986). Prior research has found that liberals report a greater need for cognition than do conservatives (Federico & Schneider, 2007; Sargent, 2004), which might help to explain why liberals would process information in a more detailed and complex manner when making decisions (Jost et al., 2003; Tetlock, 1983).

Fourth, we sought to understand why egalitarianism and out-group contact failed to account for ideological differences in the use of gender inversion cues in Study 2. According to past research, low-prejudiced individuals eschew stereotypes that are explicitly negative and that are used to justify discrimination against disadvantaged groups (Devine, 1989). This allows them to maintain an egalitarian self-concept and to minimize discomfort resulting from transgressions of personal standards (Monteith, 1993; Monteith, Devine, & Zuwerink, 1993). Conversely, individuals who hold negative attitudes toward a group are more likely to endorse negative stereotypes about that group (Allport, 1954/1979; Monteith, 1993; Whitley, 1999), possibly to justify the expression of prejudice (Crandall & Eshleman, 2003). It is conceivable that stereotypes linking gendered facial cues to sexual orientation do not possess the same negative valence as other more pernicious stereotypes about gay men—such as stereotypes that gay men are sexually promiscuous (Herek, 1984) or more likely to be pedophiles (Bosson, Haymovitz, & Pinel, 2004; Herek, 2002). In other words, facial feature stereotypes may be used simply to categorize sexual orientation and not necessarily to stigmatize gay men. Thus, associations between facial features and sexual orientation might be seen as neutral or perhaps even positive in valence. If so, we would not expect an association between prejudice and stereotype endorsement. To investigate this issue, we asked participants about the perceived valence of stereotypes linking facial features to sexual orientation.

## Method

**Participants.** Ninety participants (45 women;  $M_{\text{age}} = 35.0$  years,  $SD = 11.54$ , age range = 18–65 years; 73 heterosexual, three gay/lesbian, eight bisexual, four “other” sexual orientation, and two no sexual orientation specified) were recruited online through Amazon's Mechanical Turk website.

**Procedure.** At the end of Study 1, participants were asked what facial features they had used to determine targets' sexual

orientations. On the basis of these responses, we generated a list of the most commonly mentioned facial features. These features were *clear skin, long eyelashes, groomed eyebrows, styled hair, a slender face, and high cheekbones*. Past research has indeed found that these features are generally regarded as feminine attributes (Burris, Little, & Nelson, 2007; Cunningham, 1986; Cunningham, Roberts, Wu, Barbee, & Druen, 1995; Freimuth & Hornstein, 1982; Johnston, Hagel, Franklin, Fink, & Grammer, 2001; Pronin, Steele, & Ross, 2004), so that males possessing a greater number of these features would be considered higher in gender inversion. To mitigate the possibility that participants would report familiarity with *any* stereotype (whether authentic or fake) so as to appear knowledgeable, we added two features that participants in Study 1 did not mention, namely having *large eyes* and *moles*.

Participants were provided with a link on Mechanical Turk's website that took them to the experiment, which was programmed using Qualtrics software. To measure participants' *stereotype knowledge*, they indicated the extent to which they were familiar with the belief that gay men possess each of the eight facial features noted above (1 = *not at all familiar*; 4 = *somewhat familiar*; 7 = *very familiar*). To measure perceived *stereotype valence*, participants also rated the extent to which beliefs about gay men possessing each of these features were positive or negative (1 = *extremely negative*; 4 = *neither positive nor negative*; 7 = *extremely positive*). To measure *stereotype endorsement*, participants were asked to indicate the extent to which they believed that gay men possessed each of the features using a 1–7 response scale (1 = *do not believe at all*; 4 = *somewhat believe*; 7 = *strongly believe*).

Afterward, participants completed the Need for Cognition Scale (Cacioppo & Petty, 1982), the Attitudes Toward Gay Men Scale (Herek, 1988), indicated how frequently they interacted with gay men (ranging from 1 = *never* to 7 = *daily*), and reported their political ideology in response to the question “Where on the following scale of political orientation would you place yourself?” (1 = *extremely liberal*; 5 = *moderate*; 9 = *extremely conservative*). Ideology scores were again slightly skewed in the liberal direction ( $M = 4.06$ ,  $SD = 2.19$ ). Finally, participants provided the same demographic information requested in the prior studies.

## Results

**Stereotype knowledge.** To gauge the extent to which participants possessed cultural knowledge of stereotypes linking facial features to sexual orientation, we conducted a series of one-sample *t* tests comparing participants' reported knowledge of the stereotypes against the midpoint of the scale (4 = *somewhat familiar*). We reasoned that if perceivers reported being more than “somewhat familiar” with a given stereotype linking facial cues to sexual orientation, then the stereotype would likely affect sexual orientation judgments. However, if perceivers reported being less than “somewhat familiar” with a stereotype, then it seemed unlikely that it would be used to infer sexual orientation. As shown in Table 1, reported knowledge of stereotypes about how gay men look exceeded the midpoint of the scale for all of the facial features except for large eyes and moles (the ones we invented).

To determine whether liberals and conservatives differed in their cultural knowledge of these stereotypes, we correlated self-reported knowledge of each stereotype with political ideology.

**Table 1**  
Means, Standard Deviations, and One-Sample *t* Statistics (Tested Against the Scale Midpoint) for Cultural Knowledge of Stereotypes (Study 3)

Stereotype	<i>M</i>	<i>SD</i>	<i>t</i>
Clear skin	4.73	1.73	4.01***
Long eyelashes	4.97	1.59	5.77***
Groomed eyebrows	5.17	1.64	6.73***
Styled hair	5.39	1.22	10.76***
Slender face	4.70	1.53	4.34***
High cheek bones	4.56	1.76	2.99**
Large eyes	3.07	1.63	-5.42***
Moles	2.80	1.38	-8.23***

\*\* *p* < .01. \*\*\* *p* < .001.

None of the correlations reached statistical significance (all *r*lrs < .08, *ps* > .46), indicating that liberals and conservatives were equally aware of the stereotypes linking facial features to sexual orientation.

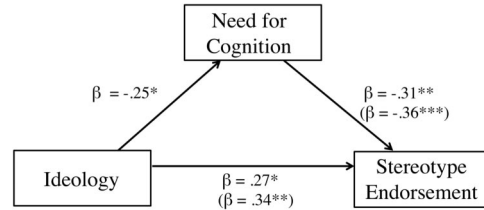
**Stereotype valence.** To determine the extent to which participants rated stereotypes linking facial features to sexual orientation as either positive or negative in valence, we conducted a series of one-sample *t* tests, again comparing actual ratings against the midpoint of the scale (4). The tests revealed that all of the facial feature stereotypes were rated as either neutral (i.e., not significantly different from 4) or positive (see Table 2). For every stereotypical cue, the perceived valence was not significantly correlated with ideology (all *r*lrs < .14, *ps* > .19), revealing that liberals and conservatives perceived the valence of the cues in a similar fashion.

**Stereotype endorsement.** We hypothesized that liberals would be less likely than conservatives to endorse stereotypes about gender inversion and sexual orientation because of their higher need for cognition. To assess this prediction, we first created a composite score based on participants' endorsement of each facial stereotype ( $\alpha = .76$ ). We then tested the mediation model illustrated in Figure 7, using political ideology to predict stereotype endorsement through the need for cognition ( $\alpha = .93$ ; higher numbers indicate greater need for cognition). We included attitudes toward gay men ( $\alpha = .92$ ; higher numbers indicate more negative attitudes) and contact with gay men (higher numbers indicate more contact) as additional predictors of stereotype endorsement to investigate whether the effect of ideology on cue

**Table 2**  
Means, Standard Deviations, and One-Sample *t* Statistics (Tested Against the Scale Midpoint) for Perceived Valence of Stereotypes (Study 3)

Stereotype	<i>M</i>	<i>SD</i>	<i>t</i>
Clear skin	5.19	1.26	8.94***
Long eyelashes	3.96	1.10	-0.38
Groomed eyebrows	4.16	1.20	1.23
Styled hair	4.79	1.22	6.08***
Slender face	4.02	1.00	0.21
High cheek bones	4.07	.88	0.72

\*\*\* *p* < .001.



**Figure 7.** Mediation model in which political ideology predicted stereotype endorsement as mediated by the need for cognition (Study 3). All values are standardized coefficients and represent relationships in which attitudes toward gay men and social contact with gay men are included as covariates. Values in parentheses represent direct relationships; values without parentheses represent relationships after including all variables in the model. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

endorsement through need for cognition was independent of anti-gay prejudice and social contact (correlations among variables are listed in Table 3). Using bootstrapping, the 95% confidence interval of the indirect effect of political ideology on cue endorsement did not contain zero [.01, .08], indicating that the mediation was significant at  $\alpha = .05$ . Thus, liberals were less likely to endorse stereotypical beliefs about how gay men look at least in part because of their higher need for cognition.

**Discussion**

Study 3 revealed that liberals were less likely than conservatives to endorse stereotypes about how gay men look, and this was related to the fact that they are dispositionally higher on the need for cognition. Furthermore, attitudes toward gay men were not associated with the endorsement of stereotypes about gendered facial features. This could be due to the fact that all of the facial stereotypes were perceived as neutral or positive in valence, so the endorsement of these cues would not threaten a low-prejudiced person's egalitarian self-concept. Furthermore, the amount of contact participants reported having with gay men was unrelated to their endorsement of the stereotypes, suggesting that ideological differences in stereotype application are probably not driven by liberals' greater exposure to gay men. Rather, these results support the notion that liberals are more likely than conservatives to adjust their sexual orientation judgments because of ideological differences in cognitive style (i.e., need for cognition) rather than because of egalitarianism or social contact.

**Table 3**  
Zero-Order Correlations Among Study Variables (Study 3)

Measure	1	2	3	4	5
1. Political ideology	—				
2. Need for cognition	-.27**	—			
3. Contact with gay men	-.36***	.08	—		
4. Attitudes toward gay men	.43***	-.18†	-.27*	—	
5. Stereotype endorsement	.33**	-.37***	-.13	.11	—

*Note.* For political ideology, higher scores indicate greater conservatism (or lesser liberalism).  
† *p* < .10. \* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001.

## General Discussion

In the present research program, we have investigated the possibility that liberals and conservatives differ in the process by which they make sexual orientation judgments because of differences in cognitive style. Specifically, we hypothesized that liberals and conservatives alike would make quick, preliminary judgments based on stereotypical gender inversion cues, but liberals would be more likely than conservatives to engage in a secondary process of judgment adjustment. Thus, in Study 1, we observed that liberals were indeed less likely than conservatives to use gender inversion cues in their deliberative judgments, and they also took longer to make their judgments, suggesting that they may have been thinking more about their judgments. In Study 2, we found that differences between liberals and conservatives were eliminated by disrupting the perceiver's ability to engage in effortful processing. Under cognitive load, liberals failed to adjust their initial judgments and, like conservatives, relied on gender inversion cues. In Study 3, we provided more direct evidence that differences in cognitive style underlie ideological differences in judgments of sexual orientation. Specifically, we found that liberals were less likely than conservatives to endorse stereotypes about gender inversion and sexual orientation, and this difference in stereotype endorsement was partially explained by liberals' greater need for cognition.

We also ruled out several alternative explanations for our findings. Past work has suggested that differences in levels of prejudice can produce differences in decision-making processes, especially when such decisions involve stereotypes that are negatively valenced (e.g., Hugenberg & Bodenhausen, 2004; Skitka et al., 2002). Somewhat surprisingly, we found no evidence that ideological differences in prejudice levels accounted for our effects. Statistically adjusting for prejudice had no bearing on our results (Studies 2 and 3), and prejudice failed to moderate cue use (Study 2). This may be due to the fact that facial cues associated with gender inversion were not seen as negatively valenced. Indeed, virtually all of the stereotypical cues that participants in Study 1 reported using were rated as neutral or positive by participants in Study 3. When it comes to judgments of sexual orientation, it appears that gendered facial features are one type of cue used to assign individuals into one category or another (a process that is referred to colloquially as "gaydar"), but they do not necessarily entail negative judgments about the target.

Ideological differences in prior contact experiences with gay men failed to explain why liberals corrected their sexual orientation judgments in the absence of cognitive load (Study 2) and why they were less likely to endorse gender inversion stereotypes (Study 3). Furthermore, liberals and conservatives did not differ in terms of their cultural knowledge of stereotypes linking gender inversion cues to sexual orientation or their evaluation of gender inversion stereotypes (Study 3). These results suggest that stereotype awareness and valence cannot explain why liberals are more likely than conservatives to engage in a secondary correction process. Taken in conjunction, all of these findings indicate that underlying cognitive style—rather than prejudice, social contact, or cultural knowledge of stereotypes—explains why liberals and conservatives differ with respect to the process of categorizing individuals as gay or

straight. We do assume, however, that prejudice could play an important role in the application of stereotypes once categorization has already taken place.

## The Role of Prejudice

Although we found no evidence that perceivers' levels of prejudice contributed to the use of gender inversion stereotypes, it seems likely that prejudice would play a role in downstream judgmental processes that occur once a given individual has been categorized as gay. Stereotypes that are activated once a target has been categorized as a member of a stigmatized group can readily be used to justify discrimination against the target (e.g., Allport, 1954/1979; Jost & Banaji, 1994; Jost & Hamilton, 2005). Therefore, the attitudes that a perceiver holds concerning the target group tend to shape the application of stereotypes in making subsequent judgments of the target person (Blair, 2002; Monteith, Sherman, & Devine, 1998; Skitka et al., 2002; Wittenbrink, Judd, & Park, 2001).

The present findings, in conjunction with past research, suggest that prejudice may not influence the process of categorization when the stereotypical cues are perceived as neutral or positive, but it may well influence evaluations of targets after categorization judgments have been made. For example, Monteith, Spicer, and Tooman (1998) found that when participants were provided with a picture of a same-sex male couple and asked to write about a typical day in the life of that couple, low-prejudiced participants were less likely to use stereotypes about gay men in their description about the couple than were high-prejudiced participants. Furthermore, Skitka et al. (2002) found that liberals were more likely than conservatives to modify their initial dispositional attributions about a target individual's negative outcomes (e.g., a man losing his job) and to incorporate situational information in a subsequent phase of judgment correction. The researchers suggested that initial dispositional judgments often conflict with liberals' low-prejudiced and egalitarian values (e.g., assuming that a man lost his job because he is lacking in ability or motivation), and so liberals would be more likely to alter their initial judgments to minimize conflict with egalitarian values (e.g., deciding that the man might have lost his job because the company had financial troubles). In research by Monteith, Spicer, and Tooman (1998) and Skitka et al. (2002), the experimenter categorized targets in advance (i.e., as gay and unemployed, respectively), and low- (but not highly) prejudiced perceivers eschewed stereotypes when describing or making effortful attributions about members of these stigmatized groups.

It is possible to incorporate all of these various findings into a single, overarching theoretical framework. First, we have demonstrated that political ideology predicts the use of stereotypical cues in making categorization judgments with respect to an ambiguous social category. Second, once a given target person has been categorized, prejudice and egalitarian values are likely to moderate the application of additional stereotypes in making effortful judgments about a target's behavior and outcomes (Skitka et al., 2002)—and perhaps even general evaluations of his or her character. Given that research has only recently begun to explore how features of the perceiver inform categorization with respect to perceptually ambiguous social groups (such as groups based on sexual orientation), an integrative framework such as this provides



a novel, multistage account of how potentially stigmatized individuals are categorized, judged, evaluated, and treated.

In the present research, we focused on ideological differences in cognitive style, focusing on liberals' stronger motivation to engage in effortful thought (Study 3). However, other situational goals and motivations presumably impact the accessibility and application of stereotypes in judgments (Kunda & Spencer, 2003). For example, feelings of scarcity (Rodeheffer, Hill, & Lord, 2012) and vulnerability to harm (Miller, Maner, & Becker, 2010) lead individuals to use different strategies when categorizing individual members of a perceptually ambiguous group. Moreover, if perceivers were making explicitly political judgments, it seems likely that motivational factors could influence the extent to which liberals and conservatives would be willing to categorize individual targets as ingroup or outgroup members, as well as their use of stereotypical cues (Samochowiec, Wanke, & Fiedler, 2010; Yzerbyt, Leyens, & Bellour, 1995).

It is also possible that prejudice would play a more decisive role with respect to the use of stereotypical cues when additional motivations are active during the categorization process (Bodenhausen & Peery, 2009; Hugenberg & Bodenhausen, 2003, 2004), such as when the categorization process is linked to maintaining social hierarchy (Sidanius & Pratto, 1999) or justifying the status quo (Jost & Banaji, 1994). Future research could explore whether temporarily activating these motives would lead individuals to use stereotypical cues differently when making sexual orientation judgments, and whether prejudice would play a stronger role under such circumstances.

### Implications for Other Ambiguous-Category Judgments

Do the present findings extend to other perceptually ambiguous social categories? Although we focused solely on judgments of sexual orientation, it seems likely that cognitive style differences between liberals and conservatives would affect a wide range of decision-making processes (see, e.g., Jost et al., 2003). For instance, a perceiver's ideology could come into play any time that judgments are made indirectly through reliance on stereotypical cues, especially under circumstances of ambiguity (Crawford & Skowronski, 1998, Study 4; Perlini & Hansen, 2001). Other quotidian examples of perceptually ambiguous social categories include religious affiliation and political party membership. Prior research has revealed that both of these types of group memberships are perceived indirectly—and often surprisingly accurately—on the basis of facial images (Allport & Kramer, 1946; Rice & Mullen, 2003; Rule & Ambady, 2010; Rule, Garrett, & Ambady, 2010). With respect to these types of categorization judgments, we would hypothesize that—as long as perceivers are aware of the stereotypical cues that can be used to make such judgments but their cognitive style leads them to suspect that the cues lack validity—liberals would be more likely than conservatives to make secondary adjustments to their judgments in a nonstereotypical direction. If, however, liberals are unaware of the cues used to make certain judgments (e.g., dominance with respect to political party categorization; see Rule & Ambady, 2010), or believe that the cues are entirely valid (see Wegener, Clark, & Petty, 2006), we would not expect them to correct their initial judgments. As with respect to sexual orientation, the implications for judgmental ac-

curacy directly depend on the extent to which stereotypical cues are indeed valid indicators of group membership.

Moving beyond social category judgments, ideology may also influence judgments of targets on other dimensions, such as personality traits, at least to the extent that these judgments are made indirectly on the basis of heuristic cues. For instance, Gosling and colleagues have found that social environments—bedrooms, offices, personal web pages, and music lists—provide indirect cues that perceivers can use to infer personality characteristics such as extraversion or neuroticism (Gosling et al., 2002; Mehl, Gosling, & Pennebaker, 2006; Rentfrow & Gosling, 2003). These cues often carry shared cultural meanings (e.g., a clean office is indicative of a conscientious person), which means that endorsing stereotypical associations that link such cues to personality characteristics is integral to the process of judgment making. Given the relationship that we have observed between political ideology and stereotype endorsement (Study 3), it is possible that when it comes to inferring personality traits on the basis of indirect environmental cues, liberals' greater need for cognition might lead them to rely on these cues less than conservatives, in part because they would be more likely to doubt that such cues necessarily serve the interest of making an accurate judgment. Future work would do well to consider the implications of the ideological differences we have observed for a variety of judgmental processes, including the extent to which liberals and conservatives use contextual cues to draw inferences about the traits and behaviors of individuals and groups. By varying the number of cues as well as their validity and task relevance, researchers would be well poised to learn when liberals and conservatives do and do not use informational cues differently.

### Implications for Accuracy in Naturalistic Contexts

In Studies 1 and 2, we observed no main effect of the perceiver's ideology when it comes to the overall accuracy of sexual orientation judgments. Instead, we found that (in the absence of cognitive load) ideological differences in accuracy were dependent on the validity of the cues. Because conservatives relied more consistently on the cues than did liberals, they were more accurate for the subset of faces that were stereotype-consistent (e.g., gay males with feminine facial features) and less accurate when the cues were stereotype-inconsistent (e.g., straight males with feminine facial features).

To the extent that stereotypes linking gender inversion to sexual orientation possess some degree of validity in general (Freeman et al., 2010, Study 2; Rieger et al., 2008), our results suggest that conservatives may possess better "gaydar" than liberals overall. However, given that gender inversion stereotypes are often exaggerated (Kite & Deaux, 1987; McConaghy & Zamir, 1995) and much heterogeneity exists with respect to the actual association between gendered facial features and sexual orientation (Freeman et al., 2010), the correlation between gendered facial features and actual sexual orientation in the "real world" is probably modest. This fact, coupled with the procedural detail that the percentage of gay targets in our sample exceeded that of documented population estimates (which vary from 1% to 21%; Gates, 2011; Kinsey, Pomeroy, & Martin, 1948; Savin-Williams, 2006), may explain why there were no ideological differences in terms of accuracy in general.

One might ask whether including an equal number of gay and straight targets in our sample of facial stimuli affected the relationship between cue usage and accuracy and, if so, how. There are two main reasons why it is unlikely that base-rate knowledge led to the observed differences in accuracy between liberals and conservatives. First, it is likely that knowledge or assumptions about base rates in the population would lead to an overall response bias, so that participants would judge more targets to be straight than gay. This is indeed what we observed in Studies 1 and 2, which suggests that participants were at least somewhat aware of base rates. However, there was no evidence that liberals and conservatives differed in terms of their use of base-rate information. In both Studies 1 and 2, liberals and conservatives did not differ in terms of the overall likelihood that they would categorize targets as gay (vs. straight). Additionally, from a signal detection perspective (see Footnote 3), overall accuracy is unaffected by variability in perceived base rates (see, e.g., Macmillan & Creelman, 2005). Second, in the present research, we were mainly interested in how liberals and conservatives differed in the relationship between cue usage and judgment accuracy. Although base-rate information contributes to an overall response bias in judgments, there is no reason to think that base-rate information would affect the use of gender inversion cues in rendering judgments about sexual orientation. For instance, if a given perceiver assumes that 10% of the population is gay, this assumption would not necessarily influence his or her judgment that gay men possess feminine facial features. Thus, it is unlikely that assumptions about base rates could account for differences between liberals and conservatives in terms of gendered cue usage. Nevertheless, it would be possible to conduct studies that systematically varied information about population base rates to determine whether it would influence liberals' and conservatives' cue use and judgmental accuracy to different degrees; this would be an interesting direction for future research.

Ultimately, the question of whether conservatives are more accurate than liberals in categorizing sexual orientation depends on both the actual correlation between gender inversion and sexual orientation in the general population and the proportion of gay versus straight individuals in society. Both issues remain challenging and somewhat contentious, however, with estimates of homosexuality ranging widely from 1% to 21% (Savin-Williams, 2006), and in light of continued debate among developmental and social psychologists (as well as social theorists) regarding the magnitude of the relationship between gender nonconformity and homosexuality (Bailey, Miller, & Willerman, 1993; Bem, 1996; D'Emilio, 1983; Gottschalk, 2003; McConaghy & Zamir, 1995; Rieger et al., 2008; Weber, 1998). Thus, although it may be possible to assess ideological differences in accuracy under circumscribed conditions, it remains extremely difficult to estimate the magnitude of such differences in ecologically valid settings.

### Concluding Remarks

The repeal of the Don't Ask, Don't Tell policy in 2012 officially integrated openly gay service members in the armed forces, the Matthew Shepard and James Byrd, Jr. Hate Crimes Prevention Act now protects sexual minorities from hate crimes, and schools throughout the country fight a daily battle against the harassment of sexual minorities. As issues concerning the perception and categorization of sexual orientation continue to saturate main-

stream culture (as well as political discourse), a scientific understanding of the relevant psychological and ideological processes is timely and important. We have demonstrated that ideological differences in cognitive style affect the processes involved in making categorical judgments about sexual orientation. This discovery adds to the growing awareness of psychological differences between liberals and conservatives (e.g., Graham, Haidt, & Nosek, 2009; Jost, 2006). Given that contemporary societies are only now beginning to grapple with the complexities of sexual orientation and the consequences of its categorization, the study of how motivations and other characteristics of perceivers affect social categorization processes has acquired a new sense of historical urgency.

### References

- Aiken, L., & West, S. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Albright, L., Kenny, D. A., & Malloy, T. E. (1988). Consensus in personality judgments at zero-acquaintance. *Journal of Personality and Social Psychology, 55*, 387–395. doi:10.1037/0022-3514.55.3.387
- Allport, G. W. (1979). *The nature of prejudice*. Cambridge, MA: Addison-Wesley. (Original work published 1954)
- Allport, G. W., & Kramer, B. M. (1946). Some roots of prejudice. *Journal of Psychology: Interdisciplinary and Applied, 22*, 9–39. doi:10.1080/00223980.1946.9917293
- Ambady, N., Hallahan, M., & Conner, B. (1999). Accuracy of judgments of sexual orientation from thin slices of behavior. *Journal of Personality and Social Psychology, 77*, 538–547. doi:10.1037/0022-3514.77.3.538
- Anderson-Minshall, D. (2012). *Republican congressman says OK to fire gays*. Retrieved from <http://www.advocate.com>
- Bailey, J. M. (2003). *The man who would be queen: The science of gender-bending and transsexualism*. Washington, DC: Joseph Henry Press.
- Bailey, J. M., Miller, J. S., & Willerman, L. (1993). Maternally rated childhood gender nonconformity in homosexuals and heterosexuals. *Archives of Sexual Behavior, 22*, 461–469. doi:10.1007/BF01542559
- Ballinger, G. A. (2004). Using generalized estimating equations for longitudinal data analysis. *Organizational Research Methods, 7*, 127–150. doi:10.1177/1094428104263672
- Bem, D. J. (1996). Exotic becomes erotic: A developmental theory of sexual orientation. *Psychological Review, 103*, 320–335. doi:10.1037/0033-295X.103.2.320
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*, 155–162. doi:10.1037/h0036215
- Blair, I. V. (2002). The malleability of automatic stereotypes and prejudice. *Personality and Social Psychology Review, 6*, 242–261. doi:10.1207/S15327957PSPR0603\_8
- Blair, I. V., Judd, C. M., Sadler, M. S., & Jenkins, C. (2002). The role of Afrocentric features in person perception: Judging by features and categories. *Journal of Personality and Social Psychology, 83*, 5–25. doi:10.1037/0022-3514.83.1.5
- Blashill, A. J., & Powlishta, K. K. (2009). Gay stereotypes: The use of sexual orientation as a cue for gender-related attributes. *Sex Roles, 61*, 783–793. doi:10.1007/s11199-009-9684-7
- Block, J., & Block, J. (1951). An investigation of the relationship between intolerance of ambiguity and ethnocentrism. *Journal of Personality, 19*, 303–311. doi:10.1111/j.1467-6494.1951.tb01104.x
- Bodenhausen, G. V., & Peery, D. (2009). Social categorization and stereotyping in vivo: The VUCA challenge. *Social and Personality Psychology Compass, 3*, 133–151. doi:10.1111/j.1751-9004.2009.00167.x

- Bosson, J. K., Haymovitz, E. L., & Pinel, E. C. (2004). When saying and doing diverge: The effects of stereotype threat on self-reported versus non-verbal anxiety. *Journal of Experimental Social Psychology, 40*, 247–255. doi:10.1016/S0022-1031(03)00099-4
- Brewer, M. B. (1988). A dual process model of impression formation. In T. K. Srull & R. S. Wyer, Jr. (Eds.), *Advances in social cognition* (Vol. 1, pp. 1–36). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Brown, R., & Hewstone, M. (2005). An integrative theory of intergroup contact. *Advances in Experimental Social Psychology, 37*, 255–343. doi:10.1016/S0065-2601(05)37005-5
- Brunswick, E. (1955). Representative design and probabilistic theory in a functional psychology. *Psychological Review, 62*, 193–217. doi:10.1037/h0047470
- Brunswick, E., & Kamiya, J. (1953). Ecological cue-validity of 'proximity' and other Gestalt factors. *American Journal of Psychology, 66*, 20–32. doi:10.2307/1417965
- Buhrmester, M. D., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*, 3–5.
- Burriss, R. P., Little, A. C., & Nelson, E. C. (2007). 2D:4D and sexually dimorphic facial characteristics. *Archives of Sexual Behavior, 36*, 377–384. doi:10.1007/s10508-006-9136-1
- Bytheway, B. (2005). Ageism and age categorization. *Journal of Social Issues, 61*, 361–374. doi:10.1111/j.1540-4560.2005.00410.x
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology, 42*, 116–131. doi:10.1037/0022-3514.42.1.116
- Cacioppo, J. T., Petty, R. E., Kao, C. F., & Rodriguez, R. (1986). Central and peripheral routes to persuasion: An individual difference perspective. *Journal of Personality and Social Psychology, 51*, 1032–1043. doi:10.1037/0022-3514.51.5.1032
- Cosmides, L., Tooby, J., & Kurzban, R. (2003). Perceptions of race. *Trends in Cognitive Sciences, 7*, 173–179. doi:10.1016/S1364-6613(03)00057-3
- Crandall, C. S., & Eshleman, A. (2003). A justification suppression model of the expression and experience of prejudice. *Psychological Bulletin, 129*, 414–446. doi:10.1037/0033-2909.129.3.414
- Crawford, M. T., & Skowronski, J. J. (1998). When motivated thought leads to heightened bias: High need for cognition can enhance the impact of stereotypes on memory. *Personality and Social Psychology Bulletin, 24*, 1075–1088. doi:10.1177/01461672982410005
- Cunningham, M. R. (1986). Measuring the physical in physical attractiveness: Quasi-experiments on the sociobiology of female facial beauty. *Journal of Personality and Social Psychology, 50*, 925–935. doi:10.1037/0022-3514.50.5.925
- Cunningham, M. R., Roberts, A. R., Wu, C-H., Barbee, A. P., & Druen, P. B. (1995). "Their ideas of beauty are, on the whole, the same as ours": Consistency and variability in the cross-cultural perception of female physical attractiveness. *Journal of Personality and Social Psychology, 68*, 261–279. doi:10.1037/0022-3514.68.2.261
- D'Emilio, J. (1983). *Sexual politics, sexual communities: The making of a homosexual minority in the United States, 1940–1970*. Chicago, IL: University of Chicago Press.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology, 56*, 5–18. doi:10.1037/0022-3514.56.1.5
- Ding, J. Y. C., & Rule, N. O. (2012). Gay, straight, or somewhere in between: Accuracy and bias in the perception of bisexual faces. *Journal of Nonverbal Behavior, 36*, 165–176. doi:10.1007/s10919-011-0129-y
- Everly, B. A., Shih, M. J., & Ho, G. C. (2012). Don't ask, don't tell? Does disclosure of gay identity affect partner performance? *Journal of Experimental Social Psychology, 48*, 407–410. doi:10.1016/j.jesp.2011.08.005
- Federico, C. M., & Schneider, M. (2007). Political expertise and the use of ideology: Moderating effects of evaluative motivation. *Public Opinion Quarterly, 71*, 221–252. doi:10.1093/poq/nfm010
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 1–74). San Diego, CA: Academic Press. doi:10.1016/S0065-2601(08)60317-2
- Freeman, J. B., & Ambady, N. (2011). A dynamic interactive theory of person construal. *Psychological Review, 118*, 247–279. doi:10.1037/a0022327
- Freeman, J. B., Ambady, N., Rule, N. O., & Johnson, K. L. (2008). Will a category cue attract you? Motor output reveals dynamic competition across person construal. *Journal of Experimental Psychology: General, 137*, 673–690. doi:10.1037/a0013875
- Freeman, J. B., Johnson, K. L., Ambady, N., & Rule, N. O. (2010). Sexual orientation perception involves gendered facial cues. *Personality and Social Psychology Bulletin, 36*, 1318–1331. doi:10.1177/0146167210378755
- Freeman, J. B., Pauker, K., Apfelbaum, E. P., & Ambady, N. (2010). Continuous dynamics in the real-time perception of race. *Journal of Experimental Social Psychology, 46*, 179–185. doi:10.1016/j.jesp.2009.10.002
- Freimuth, M. J., & Hornstein, G. A. (1982). A critical examination of the concept of gender. *Sex Roles, 8*, 515–532. doi:10.1007/BF00287716
- Funder, D. C. (1995). On the accuracy of personality judgment: A realistic approach. *Psychological Review, 102*, 652–670. doi:10.1037/0033-295X.102.4.652
- Funder, D. C., & Colvin, C. R. (1988). Friends and strangers: Acquaintanceship, agreement, and the accuracy of personality judgment. *Journal of Personality and Social Psychology, 55*, 149–158. doi:10.1037/0022-3514.55.1.149
- Funder, D. C., & Sneed, C. D. (1993). Behavioral manifestations of personality: An ecological approach to judgmental accuracy. *Journal of Personality and Social Psychology, 64*, 479–490. doi:10.1037/0022-3514.64.3.479
- Gates, G. J. (2011). *How many people are lesbian, gay, bisexual, and transgender?* Retrieved from <http://williamsinstitute.law.ucla.edu/research/census-lgbt-demographics-studies/how-many-people-are-lesbian-gay-bisexual-and-transgender/>
- Gilbert, D. T., & Osborne, R. E. (1989). Thinking backward: Some curable and incurable consequences of cognitive busyness. *Journal of Personality and Social Psychology, 57*, 940–949. doi:10.1037/0022-3514.57.6.940
- Gilbert, D. T., Pelham, B. W., & Krull, D. S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality and Social Psychology, 54*, 733–740. doi:10.1037/0022-3514.54.5.733
- Gosling, S. D., Ko, S. J., Mannarelli, T., & Morris, M. E. (2002). A room with a cue: Judgments of personality based on offices and bedrooms. *Journal of Personality and Social Psychology, 82*, 379–398. doi:10.1037/0022-3514.82.3.379
- Gottschalk, L. (2003). Same-sex sexuality and childhood gender non-conformity: A spurious connection. *Journal of Gender Studies, 12*, 35–50. doi:10.1080/0958923032000067808
- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology, 96*, 1029–1046. doi:10.1037/a0015141
- Hall, J. A., & Carter, J. D. (1999). Gender-stereotype accuracy as an individual difference. *Journal of Personality and Social Psychology, 77*, 350–359. doi:10.1037/0022-3514.77.2.350
- Heaven, P., & Oxman, L. N. (1999). Human values, conservatism and stereotypes of homosexuals. *Personality and Individual Differences, 27*, 109–118. doi:10.1016/S0191-8869(98)00216-5

- Herek, G. M. (1984). Beyond “homophobia”: A social psychological perspective on attitudes toward lesbians and gay men. *Journal of Homosexuality*, *10*, 1–21. doi:10.1300/J082v10n01\_01
- Herek, G. M. (1988). Heterosexuals’ attitudes toward lesbians and gay men: Correlates and gender differences. *Journal of Sex Research*, *25*, 451–477. doi:10.1080/00224498809551476
- Herek, G. M. (2002). Gender gaps in public opinion about lesbians and gay men. *Public Opinion Quarterly*, *66*, 40–66. doi:10.1086/338409
- Herek, G. M., & Capitanio, J. P. (1996). “Some of my best friends”: Intergroup contact, concealable stigma, and heterosexuals’ attitudes toward gay men and lesbians. *Personality and Social Psychology Bulletin*, *22*, 412–424. doi:10.1177/0146167296224007
- Hill, H., Bruce, V., & Akamatsu, S. (1995). Perceiving the sex and race of faces: The role of shape and colour. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences*, *261*, 367–373.
- Hodson, G., & Busseri, M. A. (2012). Bright minds and dark attitudes: Lower cognitive ability predicts greater prejudice through right-wing ideology and low intergroup contact. *Psychological Science*, *23*, 187–195. doi:10.1177/0956797611421206
- Hong, S. H., & Garbarino, J. (2012). Risk protective factors for homophobic bullying in schools: An application of the social-ecological framework. *Educational Psychology Review*, *24*, 271–285. doi:10.1007/s10648-012-9194-y
- Hugenberg, K., & Bodenhausen, G. V. (2003). Facing prejudice: Implicit prejudice and the perception of facial threat. *Psychological Science*, *14*, 640–643. doi:10.1046/j.0956-7976.2003.psci.1478.x
- Hugenberg, K., & Bodenhausen, G. V. (2004). Ambiguity in social categorization: The role of prejudice and facial affect in race categorization. *Psychological Science*, *15*, 342–345. doi:10.1111/j.0956-7976.2004.00680.x
- Johnson, K. L., Freeman, J. B., & Pauker, K. (2012). Race is gendered: How covarying phenotypes and stereotypes bias. *Journal of Personality and Social Psychology*, *102*, 116–131. doi:10.1037/a0025335
- Johnson, K. L., & Ghavami, N. (2011). At the crossroads of conspicuous and concealable: What race categories communicate about sexual orientation. *PLoS ONE*, *6*, e18025. doi:10.1371/journal.pone.0018025
- Johnson, K. L., Gill, S., Reichman, V., & Tassinari, L. G. (2007). Swagger, sway, and sexuality: Judging sexual orientation from body motion and morphology. *Journal of Personality and Social Psychology*, *93*, 321–334. doi:10.1037/0022-3514.93.3.321
- Johnson, K. L., & Tassinari, L. G. (2005). Perceiving sex directly and indirectly: Meaning in motion and morphology. *Psychological Science*, *16*, 890–897. doi:10.1111/j.1467-9280.2005.01633.x
- Johnston, V. S., Hagel, R., Franklin, M., Fink, B., & Grammer, K. (2001). Male facial attractiveness: Evidence for hormone-mediated adaptive design. *Evolution and Human Behavior*, *22*, 251–267. doi:10.1016/S1090-5138(01)00066-6
- Jones, G. V. (1983). Identifying basic categories. *Psychological Bulletin*, *94*, 423–428. doi:10.1037/0033-2909.94.3.423
- Jost, J. T. (2006). The end of the end of ideology. *American Psychologist*, *61*, 651–670. doi:10.1037/0003-066X.61.7.651
- Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, *33*, 1–27. doi:10.1111/j.2044-8309.1994.tb01008.x
- Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology*, *25*, 881–919. doi:10.1111/j.1467-9221.2004.00402.x
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin*, *129*, 339–375. doi:10.1037/0033-2909.129.3.339
- Jost, J. T., & Hamilton, D. L. (2005). Stereotypes in our culture. In J. Dovidio, P. Glick, & L. Rudman (Eds.), *On the nature of prejudice: Fifty years after Allport* (pp. 208–224). Oxford, England: Blackwell.
- Jost, J. T., Kruglanski, A. W., & Simon, L. (1999). Effects of epistemic motivation on conservatism, intolerance, and other system justifying attitudes. In L. Thompson, D. M. Messick, & J. M. Levine (Eds.), *Shared cognition in organizations: The management of knowledge* (pp. 91–116). Mahwah, NJ: Erlbaum.
- Jussim, L. J. (2005). Accuracy in social perception: Criticisms, controversies, criteria, components, and cognitive processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 37, pp. 1–93). San Diego, CA: Elsevier. doi:10.1016/S0065-2601(05)37001-8
- Kimmelmeier, M. (2010). Authoritarianism and its relationship with intuitive-experiential cognitive style and heuristic processing. *Personality and Individual Differences*, *48*, 44–48. doi:10.1016/j.paid.2009.08.012
- Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York, NY: Guilford Press.
- Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). *Sexual behavior in the human male*. Philadelphia, PA: W. B. Saunders.
- Kite, M. E. (1994). When perceptions meet reality: Individual differences in reactions to gay men and lesbians. In B. Greene & G. Herek (Eds.), *Contemporary perspectives in lesbian and gay psychology* (Vol. 1, pp. 25–53). Thousand Oaks, CA: Sage.
- Kite, M. E., & Deaux, K. (1986). Attitudes toward homosexuality: Assessment and behavioral consequences. *Basic and Applied Social Psychology*, *7*, 137–162. doi:10.1207/s15324834basp0702\_4
- Kite, M. E., & Deaux, K. (1987). Gender belief systems: Homosexuality and the implicit inversion theory. *Psychology of Women Quarterly*, *11*, 83–96. doi:10.1111/j.1471-6402.1987.tb00776.x
- Knight, K. (1999). Liberalism and conservatism. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of political attitudes* (pp. 59–158). San Diego, CA: Academic Press.
- Kogan, N. (1979). A study of age categorization. *Journal of Gerontology*, *34*, 358–367.
- Krueger, J. I., & Funder, D. C. (2004). Towards a balanced social psychology: Causes, consequences, and cures for the problem-seeking approach to social behavior and cognition. *Behavioral and Brain Sciences*, *27*, 313–327.
- Kruger, J. (1999). Lake Wobegon be gone! The “below-average effect” and the egocentric nature of comparative ability judgments. *Journal of Personality and Social Psychology*, *77*, 221–232. doi:10.1037/0022-3514.77.2.221
- Kruglanski, A. W., & Freund, T. (1983). The freezing and unfreezing of lay inferences: Effects of impression primacy, ethnic stereotyping, and numerical anchoring. *Journal of Experimental Social Psychology*, *19*, 448–468. doi:10.1016/0022-1031(83)90022-7
- Kruglanski, A. W., Pierro, A., Mannetti, L., & De Grada, E. (2006). Groups as epistemic providers: Need for closure and the unfolding of group-centrism. *Psychological Review*, *113*, 84–100. doi:10.1037/0033-295X.113.1.84
- Kruglanski, A. W., & Webster, D. M. (1991). Group members’ reactions to opinion deviates and conformists at varying degrees of proximity to decision deadline and of environmental noise. *Journal of Personality and Social Psychology*, *61*, 212–225. doi:10.1037/0022-3514.61.2.212
- Kunda, Z., & Spencer, S. J. (2003). When do stereotypes come to mind and when do they color judgment? A goal-based theoretical framework for stereotype activation and application. *Psychological Bulletin*, *129*, 522–544. doi:10.1037/0033-2909.129.4.522
- Lalwani, A. K. (2009). The distinct influence of cognitive busyness and need for closure on cultural differences in socially desirable responding. *Journal of Consumer Research*, *36*, 305–316. doi:10.1086/597214
- Lee, Y., Jussim, L. J., & McCauley, C. R. (Eds.). (1995). *Stereotype accuracy: Toward appreciating group differences*. Washington, DC: American Psychological Association. doi:10.1037/10495-000

- Lhomond, B. (1993). Between man and woman: The character of the lesbian. *Journal of Homosexuality*, 25, 63–73. doi:10.1300/J082v25n01\_05
- Liang, K., & Zeger, S. (1986). Longitudinal analysis using generalized linear models. *Biometrika*, 73, 13–22. doi:10.1093/biomet/73.1.13
- Linville, P. W., Fischer, G. W., & Salovey, P. (1989). Perceived distributions of the characteristics of in-group and out-group members: Empirical evidence and a computer simulation. *Journal of Personality and Social Psychology*, 57, 165–188. doi:10.1037/0022-3514.57.2.165
- Linville, S. E. (1998). Acoustic correlates of perceived versus actual sexual orientation in men's speech. *Folia Phoniatica et Logopaedica*, 50, 35–48. doi:10.1159/000021447
- Lippa, R. A. (2005). *Gender, nature, and nurture* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum.
- Macmillan, N. A., & Creelman, C. D. (2005). *Detection theory: A user's guide* (2nd ed.). Mahwah, NJ: Erlbaum.
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, 51, 93–120. doi:10.1146/annurev.psych.51.1.93
- Macrae, C. N., & Martin, D. (2007). A boy primed Sue: Feature-based processing and person construal. *European Journal of Social Psychology*, 37, 793–805. doi:10.1002/ejsp.406
- Macrae, C. N., Milne, A. B., & Bodenhausen, G. V. (1994). Stereotypes as energy-saving devices: A peek inside the cognitive toolbox. *Journal of Personality and Social Psychology*, 66, 37–47. doi:10.1037/0022-3514.66.1.37
- Maddox, K. B. (2004). Perspectives on racial phenotypicality bias. *Personality and Social Psychology Review*, 8, 383–401. doi:10.1207/s15327957pspr0804\_4
- Maddox, K. B., & Gray, S. A. (2002). Cognitive representations of Black Americans: Reexploring the role of skin tone. *Personality and Social Psychology Bulletin*, 28, 250–259. doi:10.1177/0146167202282010
- Martin, D., & Macrae, C. N. (2007). A face with a cue: Exploring the inevitability of person categorization. *European Journal of Social Psychology*, 37, 806–816. doi:10.1002/ejsp.445
- McConaghy, N., & Zamir, R. (1995). Sissiness, tomboyism, sex-role, sex identity and orientation. *Australian and New Zealand Journal of Psychiatry*, 29, 278–283. doi:10.1080/00048679509075921
- Mehl, M. R., Gosling, S. D., & Pennebaker, J. W. (2006). Personality in its natural habitat: Manifestations and implicit folk theories of personality in daily life. *Journal of Personality and Social Psychology*, 90, 862–877. doi:10.1037/0022-3514.90.5.862
- Miller, S. L., Maner, J. K., & Becker, D. V. (2010). Self-protective biases in group categorization: Threat cues shape the psychological boundary between “us” and “them”. *Journal of Personality and Social Psychology*, 99, 62–77. doi:10.1037/a0018086
- Monteith, M. J. (1993). Self-regulation of prejudiced responses: Implications for progress in prejudice-reduction efforts. *Journal of Personality and Social Psychology*, 65, 469–485. doi:10.1037/0022-3514.65.3.469
- Monteith, M. J., Devine, P. G., & Zuwerink, J. R. (1993). Self-directed versus other-directed affect as a consequence of prejudice-related discrepancies. *Journal of Personality and Social Psychology*, 64, 198–210. doi:10.1037/0022-3514.64.2.198
- Monteith, M. J., Sherman, J., & Devine, P. G. (1998). Suppression as a stereotype control strategy. *Personality and Social Psychology Review*, 2, 63–82. doi:10.1207/s15327957pspr0201\_4
- Monteith, M. J., Spicer, C. V., & Tooman, G. D. (1998). Consequences of stereotype suppression: Stereotypes on AND not on the rebound. *Journal of Experimental Social Psychology*, 34, 355–377. doi:10.1006/jesp.1998.1355
- Nicholas, C. L. (2004). Gaydar: Eye-gaze as identity recognition among gay men and lesbians. *Sexuality & Culture*, 8, 60–86. doi:10.1007/s12119-004-1006-1
- Norman, D. A., & Shallice, T. (1986). Attention to action: Willed and automatic control of behavior. In R. J. Davidson, G. E. Schwartz, & D. Shapiro (Eds.), *Consciousness and self-regulation: Advances in research and theory* (pp. 1–18). New York, NY: Plenum Press.
- Pelham, B. W., Sumarta, T. T., & Myaskovsky, L. (1994). The easy path from many to much: The numerosity heuristic. *Cognitive Psychology*, 26, 103–133. doi:10.1006/cogp.1994.1004
- Perlini, A. H., & Hansen, S. D. (2001). Moderating effects of need for cognition on attractiveness stereotyping. *Social Behavior and Personality*, 29, 313–321. doi:10.2224/sbp.2001.29.4.313
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65–85. doi:10.1146/annurev.psych.49.1.65
- Pontari, B. A., & Schlenker, B. R. (2000). The influence of cognitive load on self-presentation: Can cognitive busyness help as well as harm social performance? *Journal of Personality and Social Psychology*, 78, 1092–1108. doi:10.1037/0022-3514.78.6.1092
- Pronin, E., Steele, C. M., & Ross, L. (2004). Identity bifurcation in response to stereotype threat: Women and mathematics. *Journal of Experimental Social Psychology*, 40, 152–168. doi:10.1016/S0022-1031(03)00088-X
- Quattrone, G. A. (1986). On the perception of a group's variability. In S. Worchel & W. Austin (Eds.), *The psychology of intergroup relations* (2nd ed., pp. 25–48). Chicago, IL: Nelson-Hall.
- Reise, J. (2011). *Youth who are bullied based upon perceptions about their sexual orientation*. Retrieved from <http://www.violenceprevention-works.org>
- Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: The structure and personality correlates of music preferences. *Journal of Personality and Social Psychology*, 84, 1236–1256. doi:10.1037/0022-3514.84.6.1236
- Rice, D. R., & Mullen, B. (2003). Isaac, Ishmael, and Janus: Past and future lessons regarding the ethnic categorization of faces. *Applied Cognitive Psychology*, 17, 1129–1147. doi:10.1002/acp.990
- Rieger, G., Linsenmeier, J. A. W., Gygax, L., & Bailey, J. M. (2008). Sexual orientation and childhood gender nonconformity: Evidence from home videos. *Developmental Psychology*, 44, 46–58. doi:10.1037/0012-1649.44.1.46
- Rieger, G., Linsenmeier, J. A. W., Gygax, L., Garcia, S., & Bailey, J. M. (2010). Dissecting “gaydar”: Accuracy and the role of masculinity-femininity. *Archives of Sexual Behavior*, 39, 124–140. doi:10.1007/s10508-008-9405-2
- Rodeheffer, C. D., Hill, S. E., & Lord, C. G. (2012). Does this recession make me look black? The effect of resource scarcity on the categorization of biracial faces. *Psychological Science*. Advance online publication. doi:10.1177/0956797612450892
- Rossion, B. (2002). Is sex categorization from faces really parallel to face recognition? *Visual Cognition*, 9, 1003–1020. doi:10.1080/13506280143000485
- Rule, N. O., & Ambady, N. (2008). Brief exposures: Male sexual orientation is accurately perceived at 50 ms. *Journal of Experimental Social Psychology*, 44, 1100–1105. doi:10.1016/j.jesp.2007.12.001
- Rule, N. O., & Ambady, N. (2010). Democrats and Republicans can be differentiated from their faces. *PLoS ONE*, 5, e8733. doi:10.1371/journal.pone.0008733
- Rule, N. O., Ambady, N., Adams, R. B., Jr., & Macrae, C. N. (2008). Accuracy and awareness in the perception and categorization of male sexual orientation. *Journal of Personality and Social Psychology*, 95, 1019–1028. doi:10.1037/a0013194
- Rule, N. O., Ambady, N., & Hallett, K. C. (2009). Female sexual orientation is perceived accurately, rapidly, and automatically from the face and its features. *Journal of Experimental Social Psychology*, 45, 1245–1251. doi:10.1016/j.jesp.2009.07.010
- Rule, N. O., Garrett, J. V., & Ambady, N. (2010). Places and faces: Geographic environment influences the ingroup memory advantage.

- Journal of Personality and Social Psychology*, 98, 343–355. doi:10.1037/a0018589
- Rule, N. O., Ishii, K., Ambady, N., Rosen, K. S., & Hallett, K. C. (2011). Found in translation: Cross-cultural consensus in the accurate categorization of male sexual orientation. *Personality and Social Psychology Bulletin*, 37, 1499–1507.
- Rule, N. O., Macrae, C. N., & Ambady, N. (2009). Ambiguous group membership is extracted automatically from faces. *Psychological Science*, 20, 441–443. doi:10.1111/j.1467-9280.2009.02314.x
- Samochowiec, J., Wänke, M., & Fiedler, K. (2010). Political ideology at face value. *Social Psychological and Personality Science*, 1, 206–213. doi:10.1177/1948550610372145
- Sargent, M. (2004). Less thought, more punishment: Need for cognition predicts support for punitive responses to crime. *Personality and Social Psychology Bulletin*, 30, 1485–1493. doi:10.1177/0146167204264481
- Savin-Williams, R. C. (2006). Who's gay? Does it matter? *Current Directions in Psychological Science*, 15, 40–44. doi:10.1111/j.0963-7214.2006.00403.x
- Sherman, J. W., Lee, A., Bessenoff, G., & Frost, L. (1998). Stereotype efficiency reconsidered: Encoding flexibility under cognitive load. *Journal of Personality and Social Psychology*, 75, 589–606. doi:10.1037/0022-3514.75.3.589
- Sidanius, J. (1978). Intolerance of ambiguity and socio-political ideology: A multidimensional analysis. *European Journal of Social Psychology*, 8, 215–235. doi:10.1002/ejsp.2420080207
- Sidanius, J. (1985). Cognitive functioning and sociopolitical ideology revisited. *Political Psychology*, 6, 637–661. doi:10.2307/3791021
- Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and oppression*. New York, NY: Cambridge University Press. doi:10.1017/CBO9781139175043
- Skitka, L. J., Mullen, E., Griffin, T., Hutchinson, S., & Chamberlin, B. (2002). Dispositions, ideological scripts, or motivated correction? Understanding ideological differences in attributions for social problems. *Journal of Personality and Social Psychology*, 83, 470–487. doi:10.1037/0022-3514.83.2.470
- Stangor, C., Sechrist, G. B., & Jost, J. T. (2001). Changing racial beliefs by providing consensus information. *Personality and Social Psychology Bulletin*, 27, 486–496. doi:10.1177/0146167201274009
- Swets, J., Tanner, W. J., & Birdsall, T. (1961). Decision processes in perception. *Psychological Review*, 68, 301–340. doi:10.1037/h0040547
- Tajfel, H. (1969). Cognitive aspects of prejudice. *Journal of Social Issues*, 25, 79–97. doi:10.1111/j.1540-4560.1969.tb00620.x
- Tetlock, P. E. (1983). Cognitive style and political ideology. *Journal of Personality and Social Psychology*, 45, 118–126. doi:10.1037/0022-3514.45.1.118
- Tetlock, P. E. (2007). Psychology and politics: The challenges of integrating levels of analysis in social science. In A. W. Kruglanski & E. T. Higgins (Eds.), *Social psychology: Handbook of basic principles* (2nd ed., pp. 888–912) New York, NY: Guilford Press.
- Unger, R. K., & Crawford, M. (1993). Commentary: Sex and gender: The troubled relationship between terms and concepts. *Psychological Science*, 4, 122–124. doi:10.1111/j.1467-9280.1993.tb00473.x
- Van Knippenberg, A., Dijksterhuis, A., & Vermeulen, D. (1999). Judgment and memory of a criminal act: The effects of stereotypes and cognitive load. *European Journal of Social Psychology*, 29, 191–201. doi:10.1002/(SICI)1099-0992(199903/05)29:2/3<191::AID-EJSP923>3.0.CO;2-O
- Vitulli, E. (2010). A defining moment in civil rights history? The employment non-discrimination act, trans-inclusion, and homonormativity. *Sexuality Research and Social Policy*, 7, 155–167. doi:10.1007/s13178-010-0015-0
- Weber, L. (1998). A conceptual framework for understanding race, class, gender, and sexuality. *Psychology of Women Quarterly*, 22, 13–32. doi:10.1111/j.1471-6402.1998.tb00139.x
- Wegener, D. T., Clark, J. K., & Petty, R. E. (2006). Not all stereotyping is created equal: Differential consequences of thoughtful versus non-thoughtful stereotyping. *Journal of Personality and Social Psychology*, 90, 42–59. doi:10.1037/0022-3514.90.1.42
- West, T. V., & Kenny, D. A. (2011). The truth and bias model of judgment. *Psychological Review*, 118, 357–378. doi:10.1037/a0022936
- Whitley, B. E., Jr. (1999). Right-wing authoritarianism, social dominance orientation, and prejudice. *Journal of Personality and Social Psychology*, 77, 126–134. doi:10.1037/0022-3514.77.1.126
- Whitley, B. E., Jr. & Lee, S. E. (2000). The relationship of authoritarianism and related constructs to attitudes toward homosexuality. *Journal of Applied Social Psychology*, 30, 144–170. doi:10.1111/j.1559-1816.2000.tb02309.x
- Wilson, G. D., Ausman, J., & Mathews, T. R. (1973). Conservatism and art preferences. *Journal of Personality and Social Psychology*, 25, 286–288. doi:10.1037/h0033972
- Wittenbrink, B., Judd, C. M., & Park, B. (2001). Spontaneous prejudice in context: Variability in automatically activated attitudes. *Journal of Personality and Social Psychology*, 81, 815–827. doi:10.1037/0022-3514.81.5.815
- Yzerbyt, V., Leyens, J.-P., & Bellour, F. (1995). The ingroup overexclusion effect: Identity concerns in decisions about group membership. *European Journal of Social Psychology*, 25, 1–16. doi:10.1002/ejsp.2420250102
- Zeger, S. L., & Liang, K. (1986). Longitudinal data analysis for discrete and continuous outcomes. *Biometrics*, 42, 121–130. doi:10.2307/2531248

Received August 12, 2012

Revision received October 13, 2012

Accepted November 13, 2012 ■