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## Stereotype Deduction About Bisexual Women

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Bisexuals are an invisible sexual minority. However, at the same time, bisexuals are stereotypically associated with confusion and promiscuity. Stereotype learning theories suggest that individuals who are unfamiliar with a social group are less likely to have stereotypical beliefs about its members. In contrast, it has been recently hypothesized that stereotypes about bisexuality are not necessarily learned but rather deduced based on common conceptualizations of sexuality. Because stereotypes are suppressed only if they are recognized as offensive, lack of knowledge regarding bisexual stereotypes should actually enhance their adoption. To assess the strength of the two competing accounts, we examined the relationship between explicit knowledge of bisexual stereotypes and stereotypical evaluation of bisexual individuals. Heterosexual participants ( $N = 261$ ) read a description of two characters on a date and evaluated one of them. Bisexual women were evaluated as more confused and promiscuous relative to nonbisexual women. Moreover, the stereotypical evaluations of bisexual women were inversely related to knowledge about these stereotypes. The findings support the notion that bisexual stereotypes are not learned but rather deduced from shared assumptions about sexuality. Consequently, public invisibility not only exists alongside bisexual stereotypes but might also exacerbate their uninhibited adoption.

Bisexual people suffer from higher rates of anxiety, depression, and suicidality as compared to heterosexuals, lesbians, and gay men (for reviews, see Dodge & Sandfort, 2007; Marshal et al., 2011; Pompili et al., 2014). According to several researchers, these disparities are linked to social stressors unique to bisexuals (Brewster, Moradi, DeBlaere, & Velez, 2013; Friedman et al., 2014; Miller, Andre, Ebin, & Bessonova, 2007). Specifically, two social phenomena have been implicated: public invisibility and social stereotypes.

Public invisibility refers to the lack of public awareness of bisexuality and of issues related to bisexual individuals (Firestein, 1996). Bisexuals have little political influence as a social group, even within the lesbian, gay, bisexual, and transgender (LGBT) social movement (Gurevich, Bower, Mathieson, & Dhayanandhan, 2007), and are disproportionately underrepresented in various media outlets (San Francisco Human Rights Commission, 2011). Moreover, health professionals and psychologists lack knowledge concerning bisexuality and concerning the social issues confronted by bisexuals (Barker, 2007; Petford, 2003).

Social stereotypes are fixed, biased associations between a social group and specific traits. Firsthand reports from bisexual individuals suggest that bisexuals are perceived by heterosexuals, gay men, and lesbians as (1) confused, (2) sexually promiscuous, (3) less disposed to monogamous relationships (henceforth, nonmonogamous), and (4) untrustworthy (e.g., Hutchins & Kaahumanu, 1991; McLean, 2007; Ochs & Rowley, 2005; Udis-Kessler, 1996). Several studies provided empirical evidence that people do, in fact, have stereotypical beliefs regarding bisexuals as a group (Burke & LaFrance, 2016; Dodge et al., 2016; Eliason, 1997; Mohr & Rochlen, 1999; Rust, 1993; Yost & Thomas, 2012). For example, Burke and LaFrance (2016) found that heterosexuals, as well as gay men and lesbians, view bisexuality as a less stable sexual orientation than heterosexuality and homosexuality. Two studies further showed that heterosexuals use these stereotypes when evaluating bisexual individuals (Spalding & Peplau, 1997; Zivony & Lobel, 2014). For example, Zivony and Lobel (2014, Study 2) provided participants with a description of two characters on a first date: a target character who was either a heterosexual, gay, or bisexual man, and a nontarget character who was either a gay man or a heterosexual woman. Participants were then asked to evaluate the target character's personality on various scales.

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Bisexual men were evaluated as equally agreeable, conscientious, emotionally stable, and extraverted as heterosexual and gay men. However, bisexual men were evaluated as more confused, sexually promiscuous, nonmonogamous, and untrustworthy than heterosexual and gay men, thereby conforming to the description of the bisexual stereotype.

While the negative consequences of public invisibility and social stereotypes on bisexuals have been previously documented, the relationship between the two phenomena is not yet clear. If an individual has little or no awareness of bisexuals as a social group, it seems unlikely for that individual to hold onto specific social stereotypes regarding bisexuals. Indeed, according to contemporary theories of stereotype formation (for reviews, see Hilton & Von Hippel, 1996; Stangor, 2009), stereotypical associations are learned after repeated social contact with the stereotyped group, either directly or through socially transmitted ideas (e.g., representations in mass media). Therefore, lack of social contact with a group should reduce the likelihood of its members being evaluated stereotypically.

The gradual acquisition of stereotypes is accompanied by the recognition that they are not personal opinions but rather widely held beliefs. Therefore, to gauge awareness of a social group and its associated stereotypes, researchers often measure stereotype knowledge, defined as knowledge of the traits society associates with that group (Augoustinos, Ahrens, & Innes, 1994; Devine, 1989; Gordijn, Koomen, & Stapel, 2001; Lepore & Brown, 1997). For well-known groups, with whom social contact is commonplace, stereotype knowledge is prevalent in prejudiced and unprejudiced individuals alike (Augoustinos et al., 1994; Devine, 1989; Lepore & Brown, 1997). However, in the case of a relatively unknown social group, such as bisexuals, stereotype knowledge is not expected to be prevalent or uniform. According to the stereotype learning account, individuals who lack stereotype knowledge about bisexuals are less likely to use stereotypes in their evaluation, as they have a weaker foundation on which to base their stereotypes. From this perspective, it follows that bisexual stereotype knowledge and stereotypical evaluation should be positively correlated: the less aware people are of certain stereotypes, the less they can adhere to them.

Recently, however, Zivony and Lobel (2014) theorized that stereotypical evaluation of bisexuals can occur even in the absence of stereotype knowledge. They suggested that stereotypes of bisexuals are not necessarily learned through social contact but can instead be deduced based on a shared understanding of human sexuality (see also Rust, 2002). Specifically, as males and females are perceived as “opposite sexes,” sexual attraction to males and sexual attraction to females are viewed as two contradictory attractions. Thus, even though self-identified bisexual individuals perceive their sexuality in various ways (Ochs, 2007; Rust, 2000a), bisexuality is rigidly understood by nonbisexuals as having two opposite attractions at the same time. This understanding can easily lead

to the deduction that bisexuality entails a persistent conflict between attractions, which, in turn, creates a need to be with multiple partners and an inability to remain faithful to a single romantic partner. In other words, it is possible that bisexual stereotypes are deduced, rather than learned. According to this stereotype deduction account, stereotype knowledge about bisexuals is not a necessary condition for stereotypical evaluation, as individuals can deduce these stereotypes regardless of their familiarity with bisexuals as a social group.

Even if certain stereotypes can be deduced in the absence of previous social contact with bisexuals, having stereotype knowledge should nevertheless influence the adherence to these stereotypes. Theories of stereotype control (Devine & Sharp, 2009; Kunda & Spencer, 2003) differentiate between the availability of stereotypical associations and the actual adoption of these stereotypes. All the stereotypes associated with a social group automatically become available in one’s mind in the presence of its members. However, some individuals try to avoid using these stereotypes and to suppress them to comply with egalitarian values. By its nature, suppression of stereotypes will occur only if one recognizes that these associations are offensive stereotypes, that is, it requires stereotype knowledge. An individual who has deduced that bisexuals should have certain traits, but is unaware that these associations are stereotypes, should adhere to these conclusions more freely. In other words, stereotype knowledge might not affect the availability of stereotypes associated with bisexuals, but such knowledge is necessary for the suppression of these stereotypes. Accordingly, the stereotype deduction account yields the novel prediction that stereotype knowledge and the stereotypical evaluation of bisexuals should actually be negatively correlated: while the stereotypes can be deduced by all individuals in society, those who are more aware that these beliefs are stereotypes are more likely to avoid using them. The main goal of the current study was to investigate whether bisexual stereotypes are learned or deduced by examining the relationship between stereotype knowledge and stereotypical evaluation.

The second goal of this study is to extend Zivony and Lobel’s (2014) findings about stereotypical evaluation of bisexual men to that of bisexual women. Gender plays an important factor in determining attitudes toward sexual minorities. Previous studies show that bisexuality in women is generally more accepted than bisexuality in men (Eliason, 1997; Herek, 2002; Yost & Thomas, 2012), a pattern which mirrors the greater acceptance of homosexuality in women than in men (Herek, 1994; Kite & Wheatley, 1996). However, studies that focused on stereotypes found little or no difference between the stereotypical evaluation of bisexual women and bisexual men (Burke & LaFrance, 2016; Dodge et al., 2016; Spalding & Peplau, 1997). Given these latter results, we expected to find that, similarly to bisexual men, people use stereotypes in their evaluations of bisexual women.

To meet the goals of this study, we used a variant of Zivony and Lobel’s (2014) paradigm, which allowed us to gauge both stereotype knowledge and stereotypical evaluation. First, we asked participants to self-generate socially held stereotypes of various groups, including those of bisexual women, which would indicate their levels of stereotype knowledge. Next, we presented participants with a description of a first date between two characters: a target character, who was always a woman, and a nontarget character, who was either a lesbian or a heterosexual man. We also manipulated the sexual orientation of the target character to be either bisexual or not. Thus, participants were divided into four conditions: (1) a bisexual woman on a same-gender date; (2) a bisexual woman on a different-gender date; (3) a lesbian on a same-gender date; and (4) a heterosexual woman on a different-gender date. We expected that bisexual women would be evaluated stereotypically as more confused, promiscuous, nonmonogamous, and untrustworthy than lesbians and heterosexual women. We also examined evaluation of additional traits that comprise the “big five” basic domains of personality (McCrae & Costa, 1987): agreeableness, conscientiousness, neuroticism (i.e., emotional stability), extraversion, and openness to new experiences. Similarly to Zivony and Lobel (2014), we did not expect any differences between the evaluation of bisexuals and nonbisexuals for these traits. Finally, we examined the relationship between stereotype knowledge and stereotypical evaluation of bisexual women to see whether the two factors are positively correlated (as predicted by the stereotype learning account) or negatively correlated (as predicted by the stereotype deduction account).

**Method**

**Participants**

Participants were 300 U.S. residents recruited online using Amazon’s Mechanical Turk (MTurk) Web site who were randomly and equally distributed among the four experimental conditions. Participants were paid \$2.50 to complete the study, which took approximately 10 to 15 minutes. Given the small number of participants from sexual minority groups in the sample, we focused only on self-identified heterosexual participants, excluding 38 self-identified lesbian, gay, and bisexual participants. One participant indicated awareness of the purpose of the experiment and was therefore excluded as well. Out of the remaining 261 participants, 154 were men and 107 were women. The age of these respondents ranged from 19 to 67 years ( $M = 34.13$ ,  $SD = 10.64$ ). Full demographic distribution for each experimental group is reported in Table 1.

**Procedure**

Participants entered the online questionnaire, gave their voluntary consent, and read written instructions. The instructions stated that participants would take part in two

**Table 1.** Demographic Characteristics As a Function of the Experimental Group

| Experimental Group          | Bisexual Woman Dating a man (N = 64) | Bisexual Woman Dating a Woman (N = 68) | Heterosexual Woman (N = 68) | Lesbian Woman (N = 61)   |
|-----------------------------|--------------------------------------|--|-----------------------------|--------------------------|
| Gender                      |                                      |  |                             |                          |
| Men                         | 36 (56%)                             | 42 (62%)                               | 43 (63%)                    | 31 (51%)                 |
| Women                       | 28 (44%)                             | 26 (38%)                               | 25 (37%)                    | 30 (49%)                 |
| Formal education            |                                      |  |                             |                          |
| High school                 | 27 (42%)                             | 24 (35%)                               | 21 (31%)                    | 16 (26%)                 |
| Bachelor’s degree           | 28 (44%)                             | 36 (53%)                               | 38 (56%)                    | 36 (59%)                 |
| Master’s degree or PhD      | 7 (11%)                              | 3 (4%)                                 | 8 (12%)                     | 6 (10%)                  |
| Other                       | 2 (3%)                               | 5 (7%)                                 | 1 (1%)                      | 3 (5%)                   |
| Race/ethnicity              |                                      |  |                             |                          |
| Caucasian                   | 49 (77%)                             | 50 (74%)                               | 53 (78%)                    | 46 (75%)                 |
| African American            | 6 (9%)                               | 1 (1%)                                 | 3 (4%)                      | 4 (7%)                   |
| Asian                       | 5 (8%)                               | 8 (12%)                                | 7 (10%)                     | 6 (10%)                  |
| Latino/a                    | 4 (6%)                               | 8 (12%)                                | 4 (6%)                      | 5 (8%)                   |
| Other                       | 0 (0%)                               | 1 (1%)                                 | 1 (1%)                      | 0 (0%)                   |
| Religion                    |                                      |  |                             |                          |
| Christian/Catholic          | 24 (38%)                             | 26 (33%)                               | 30 (44%)                    | 23 (38%)                 |
| Atheist                     | 21 (33%)                             | 39 (50%)                               | 24 (35%)                    | 20 (33%)                 |
| Other                       | 19 (30%)                             | 13 (17%)                               | 14 (21%)                    | 18 (30%)                 |
| Marital status              |                                      |  |                             |                          |
| Single                      | 31 (48%)                             | 37 (54%)                               | 32 (47%)                    | 37 (61%)                 |
| Married                     | 26 (41%)                             | 25 (37%)                               | 29 (43%)                    | 18 (30%)                 |
| Other                       | 7 (11%)                              | 6 (9%)                                 | 7 (10%)                     | 6 (10%)                  |
| Religiosity (7-point scale) | $M = 2.6$<br>$SD = 2.12$             | $M = 2.3$<br>$SD = 2.03$               | $M = 2.5$<br>$SD = 1.95$    | $M = 2.7$<br>$SD = 2.05$ |

Note. Results represent N per group (% out of experimental group) unless otherwise stated.

unrelated studies. The first study was said to regard attitudes toward different social groups. The instructions to this section of the questionnaire were identical to those in Devine’s (1989) study of stereotype knowledge, that is, participants were asked to list the “widely held, relatively simplified and fixed images or ideas regarding a social group.” It was emphasized that the researchers were not interested in the participant’s personal opinions but rather in their knowledge of common social attitudes. Participants were asked to give as many descriptors as they could. Self-generated stereotype descriptions are commonly used as a measure of stereotype knowledge (Augoustinos et al., 1994; Devine, 1989; Gordijn et al., 2001; Lepore & Brown, 1997). This method has gained the favor of social psychologists over the previously used method of recognizing items from an adjective list (e.g., Williams & Bennett, 1975), because participants’ responses are not limited by the researchers’ conceptualization of the stereotype (Devine, 1989).

To reduce knowledge of the purpose of the experiment, participants were told they would be asked to describe three randomly selected social groups, and a lag of five seconds between sections simulated the randomization process. In fact, each participant provided descriptions of the same

three groups: heterosexual women, lesbians, and bisexual women. The order of presentation for these three sections was counterbalanced among subjects. Because preliminary analysis showed no significant order effect in any of the tests reported here (all  $F$ s < 1), we collapsed all data across these conditions.

The second part of the questionnaire was said to regard the evaluation of romantic potential between two individuals. Participants read descriptions of two characters (see date description in the section that follows) and then evaluated the target character on a list of items. To reduce knowledge of the purpose of this part of the experiment, participants were told that all dates were selected at random from a larger pool of real individuals, and a lag of five seconds simulated the randomization process.

## Materials

**Date description.** Participants were presented with one of two possible illustrations (a woman and a man or two women) depicting a couple on a date.<sup>1</sup> The illustrations were drawn based on stock photos and were constructed so that poses, eye level, and distance between individuals would be the same for all couples. All characters were portrayed smiling and holding cups of coffee. The participants read one of two possible descriptions of the nontarget character: Sarah, a lesbian woman, or James, a heterosexual man. The nontarget characters were described as 24-year-old college students currently looking for a long-term relationship. The date was described to take place in the nontarget's favorite coffee shop.

Participants then read a script describing a series of 11 questions and answers that the nontarget character asked the target, Laura, on their date. The set of questions was originally composed by Zivony and Lobel (2014) and included 10 neutral questions, such as "What is your favorite reality TV show?" These questions and answers were tested to make sure they did not give a biased impression of the target. The fifth question out of a total of 11 questions concerned the target's sexual orientation. The sexual orientation of the target was manipulated by the answer to the question "Do you ever find yourself attracted to women?" if asked by the heterosexual nontarget or "Do you ever find yourself attracted to men?" if asked by the lesbian nontarget. The answer of the bisexual targets was always "I'm bisexual, so yes." And the answer of the heterosexual and lesbian targets was "No." Note that the question was embedded among other questions to further reduce the participant's awareness of the study goals. A manipulation check at the end of the study ensured that participants registered Laura's sexual orientation. Next, participants were asked to try to imagine Laura's likeness and then help Sarah/James by evaluating the target on a series of measures.

## Measures

**Stereotype knowledge.** The self-generated descriptions, provided by the participants in the first stage of the experiment (see Procedure section), were used as the basis of the stereotype knowledge measure. Evaluation of an individual's stereotype knowledge took place in several stages. First, we followed the coding procedure based on the stereotype knowledge literature (e.g., Devine, 1989; Lepore & Brown, 1997) to decide which categories participants considered to be stereotypical. The purpose of this procedure was to provide a relatively small number of categories that would cover as many of the stereotypical beliefs regarding the selected social groups as possible. Initial categories were created by the researchers based on known stereotypes (Eliason, Donelan, & Randall, 1992; Israel & Mohr, 2004; Williams & Bennett, 1975). Second, two independent judges, blind to the purpose of the experiment and participants' responses on any other measure, were presented with the categories and asked to code individual responses. The judges were not obligated to use the categories and were allowed to add additional categories if they deemed them appropriate for a large number of the responses. If a response did not match any of these categories, the judges were allowed to code a response under three dummy categories: a "negative—miscellaneous" category, a "positive—miscellaneous" category, and a "neutral descriptions" category, which were not analyzed. The judges coded approximately 3,000 responses and agreed on 91% of the responses coded into the regular categories. Disagreements were resolved through discussion. Finally, to ensure that the stereotype knowledge measure included a relatively small number of descriptions, categories mentioned by less than 10% of the participants were interpreted to be nonindicative of stereotype knowledge and were therefore discarded.<sup>2</sup> Overall, eight categories were created to describe the stereotypes of bisexual women, seven categories to describe the stereotypes of lesbians, and nine categories to describe the stereotypes of heterosexual women. The final list of categories and the percentage of participants that reported each category are presented in Table 2.

The second step, after the final lists of categories were created, was to evaluate the participants' stereotype knowledge. Knowledge of a specific category was measured by a person's indication of that category, and multiple indications of the same category were counted only once. Participants' overall stereotype knowledge was measured as the percentage of categories that they mentioned out of the number of categories that were included in the final list. For example, a participant that mentioned all the stereotypes of bisexual women would have bisexual stereotype knowledge of 100%, whereas a participant that indicated that bisexual women are perceived as "promiscuous" and "confused" but did not mention any other stereotype would have bisexual stereotype knowledge of 25% (two categories out

<sup>1</sup> The illustrations are available from the corresponding author upon request.

<sup>2</sup> To make sure that the arbitrary 10% cutoff point did not affect the reported results, we repeated the statistical analyses reported below with a 5% cutoff point with no change in the results.

**Table 2.** Final Lists of Stereotypical Descriptions and the Percentage of Participants That Reported Each Description

| Bisexual Women          | Lesbians | Heterosexual Women         |
|-------------------------|----------|----------------------------|
| Promiscuous             | 53%      | Masculine 77%              |
| Confused                | 47%      | Weak 55%                   |
| Not really bisexual     | 30%      | Man-hating 32%             |
| Attractive or seductive | 21%      | Emotional 54%              |
| Socially outgoing       | 19%      | Aggressive 28%             |
| Masculine               | 15%      | Lower capabilities 42%     |
| Nonmonogamous           | 15%      | Strong and independent 18% |
| Open-minded             | 15%      | Conflictual 33%            |
|                         |          | Giving 28%                 |
|                         |          | Unattractive 17%           |
|                         |          | Sexual 15%                 |
|                         |          | Mothers and housewives 25% |
|                         |          | Feminist 15%               |
|                         |          | Compassionate 23%          |
|                         |          | Self-centered 15%          |
|                         |          | Sexual 13%                 |

of eight possible categories). Table 3 summarizes the average stereotype knowledge for the three social groups. As can be seen from the table, women showed more stereotype knowledge than men. However, this difference was statistically significant for stereotype knowledge of heterosexual women,  $t(259) = 2.16, p = .03$ , but not of bisexual women or lesbians, both  $ps > .15$ .

**Nonstereotypical traits: Ten-Item Personality Inventory.** After reading the description of the target, participants rated the target on the Ten-Item Personality Inventory (TIPI), a very brief measure of the “big five” personality domains (Gosling, Rentfrow, & Swann, 2003). The purpose of this measure was to examine whether participants’ perception of bisexual women’s nonstereotypical personality traits was biased. Instructions were given to rate the target to the extent to which the participants agreed that the pair of characteristics applied to their evaluation of Laura, even if one characteristic applied more strongly than the other. All items were rated on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The TIPI includes the following items: “calm, emotionally stable” and “anxious, easily upset” (subscales of neuroticism); “sympathetic, warm” and “critical, quarrelsome” (subscales of agreeableness); “dependable, self-disciplined” and “disorganized, careless” (subscales of conscientiousness); “extraverted, enthusiastic” and “reserved, quiet” (subscales of extraversion); “conventional, uncreative” and “open to new experiences, complex” (subscales of openness to new experiences). Although not as reliable as the longer versions of the “big five” inventories, the TIPI has an acceptable test-retest reliability of .72 and was found to

**Table 3.** Average Stereotype Knowledge Regarding Bisexual Women, Lesbians, and Heterosexual Women, As a Function of Participants’ Gender

|         | Bisexual Women | Lesbians      | Heterosexual Women |
|---------|----------------|---------------|--------------------|
| Overall | 26.1% (13.9%)  | 28.9% (14.0%) | 31.9% (13.6%)      |
| Men     | 25.5% (13.8%)  | 27.9% (13.5%) | 30.4% (12.8%)      |
| Women   | 27.1% (14.1%)  | 30.3% (14.6%) | 34.1% (14.5%)      |

Note. Standard deviations are presented in parentheses.

converge with widely used instruments (Gosling et al., 2003). As the TIPI includes only one item for each subscale, it was not possible to calculate internal consistency. However, in Gosling et al.’s (2003) original study, each pair of items was found to be significantly correlated, which indicates that both items measured the same overall trait. In the current sample, the correlations between the subsets of items were all significant: (1) “calm, emotionally stable” and “anxious, easily upset,”  $r(259) = -.52, p < .001$ ; (2) “sympathetic, warm” and “critical, quarrelsome,”  $r(259) = -.33, p < .001$ ; (3) “dependable, self-disciplined” and “disorganized, careless,”  $r(259) = -.38, p < .001$ ; (4) “extraverted, enthusiastic” and “reserved, quiet,”  $r(259) = -.51, p < .001$ ; (5) “open to new experiences, complex” and “conventional, uncreative,”  $r(259) = -.45, p < .001$ . Therefore, each pair of subscales were averaged (after reversal of the negative item) to form the five traits of the “big five” personality domains (neuroticism, agreeableness, conscientiousness, extraversion, and openness to experiences).

**Stereotypical traits.** Participants evaluated the target character on items that measured traits stereotypically associated with bisexuality. These items were based on Zivony and Lobel (2014). First, the trait of confusion was evaluated in a similar fashion to the TIPI, using two items: “indecisive, confused” and “mature, at peace with oneself.” Afterward, participants were requested to answer a set of six questions, specifically designed to assess other stereotypes of bisexual women. All the questions began with “I think Laura” and continued with “is not a trustworthy person”; “is an honest person” (the two items measuring the trait of trustworthiness); “has had many previous romantic relationships in the past”; “has had many previous sexual relationships in the past” (the two items measuring the trait of promiscuity); “will be satisfied with a single partner”; and “will be afraid to commit to a relationship” (the two items measuring the trait of inclination to nonmonogamy). All these questions were evaluated on a 7-point Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The correlations between the subsets of items that represent the different traits were all significant: (1) “confused, indecisive” and “mature, at peace with oneself,”  $r(259) = -.45, p < .001$ ; (2) “untrustworthy” and “honest,”  $r(259) = -.47, p < .001$ ; (3) “many previous romantic relationships” and “many previous sexual relationships,”  $r(259) = .83, p < .001$ ; and (4) “afraid to commit to a relationship” and “satisfied with a single partner,”  $r(259) = -.72, p < .001$ . Therefore, subscale pairs were averaged (after reversal of the negative item) to form the following stereotypical traits: confusion, promiscuity, nonmonogamy, and untrustworthiness.

**Demographics and manipulation check.**

Participants’ age, gender, sexual orientation, education level, ethnicity, religious preference, and religiosity were gauged using standard questions. None of the demographic variables significantly differed among the four experimental groups (all  $ps > .50$ ). An open question asked participants to share their thoughts about the study

and to indicate whether they remembered the target character's sexual orientation.

**Results**

**Evaluation of the Target Character**

All nine traits (confusion, promiscuity, nonmonogamy, untrustworthiness, neuroticism, conscientiousness, agreeableness, extraversion, and openness to experiences) were entered as dependent variables to a series of three-way analyses of variance (ANOVAs) with target's bisexuality (bisexual versus nonbisexual), gender match between the target and nontarget characters (same gender versus different gender), and participants' gender (men versus women) as between-subject variables. For the sake of clarity, we report in the text only the significant results and divide the report according to the three independent variables.<sup>3</sup> Mean evaluations as a function of the experimental condition are presented in Table 4, and the results of all the statistical tests are reported in Table 5.

**Effect of target's bisexuality.** As can be seen from the two rightmost columns of Table 4 (bisexuals versus nonbisexuals), the target's bisexuality had a substantial effect on the evaluation of the target in eight out of the nine characteristics. Bisexuals were evaluated as more confused, promiscuous, nonmonogamous, neurotic, extraverted, and open to experiences, and were evaluated as less agreeable and conscientious. As can be seen from the leftmost column of Table 5, these observations were confirmed by a significant main effect of the target's bisexuality in all these traits: confusion,  $F(1, 252) = 16.05, p < .001$ ; promiscuity,  $F(1, 252) = 21.87, p < .001$ ; nonmonogamy,  $F(1, 252) = 28.42, p < .001$ ; neuroticism,  $F(1, 252) = 7.17, p = .007$ ; extraversion,  $F(1, 252) = 11.91, p < .001$ ; openness to experiences,  $F(1, 252) = 10.46, p = .001$ ; agreeableness,  $F(1, 252) = 11.71, p < .001$ ; and conscientiousness,  $F(1, 252) = 11.59, p < .001$ . The main effect of the target's bisexuality on untrustworthiness was not significant,  $F < 1$ .

**Effect of gender match between characters.** While gender match between target and nontarget did not yield any significant main effect (see Table 5, second column), it did moderate the effect of the target's bisexuality on evaluation of extraversion and openness to experiences, as indicated by significant two-way interactions between the two factors,  $F(1, 252) = 6.32, p = .01$ , and  $F(1, 252) = 4.82, p = .029$ , respectively

<sup>3</sup> Effects with  $p$  values below .05 are reported. However, a conservative Bonferroni correction for multiple ANOVAs would suggest that only  $p$  values below .0055 should be considered significant. In that case, the effect of target's bisexuality on neuroticism ( $p = .007$ ), the interaction between target's bisexuality and gender match on extraversion ( $p = .01$ ) and on openness to experience ( $p = .029$ ) should be considered to be approaching statistical significance.

**Table 4.** Mean Rating of the Target Character As a Function of the Experimental Condition

|                         | Experimental Condition      |                               |                    |               |                | Condition Averaged Across Gender Match |  |
|-------------------------|-----------------------------|-------------------------------|--------------------|---------------|----------------|--|--|
|                         | Bisexual Woman Dating a Man | Bisexual Woman Dating a Woman | Heterosexual Woman | Lesbian Woman | Bisexual Women | Nonbisexual Women                      |  |
| Stereotypical traits    |                             |                               |                    |               |                |  |  |
| Confusion               | 2.90 (0.13)                 | 2.97 (0.13)                   | 2.45 (0.13)        | 2.35 (0.13)   | 2.94 (0.09)    | 2.40 (0.10)                            |  |
| Promiscuity             | 4.68 (0.14)                 | 4.39 (0.14)                   | 3.73 (0.14)        | 3.96 (0.14)   | 4.54 (0.10)    | 3.85 (0.10)                            |  |
| Nonmonogamy             | 3.54 (0.20)                 | 3.60 (0.16)                   | 2.63 (0.14)        | 2.68 (0.15)   | 3.58 (0.13)    | 2.66 (0.10)                            |  |
| Untrustworthiness       | 2.20 (0.13)                 | 2.46 (0.13)                   | 2.36 (0.13)        | 2.20 (0.13)   | 2.34 (0.09)    | 2.28 (0.09)                            |  |
| Nonstereotypical traits |                             |                               |                    |               |                |  |  |
| Neuroticism             | 3.13 (0.13)                 | 2.92 (0.11)                   | 2.66 (0.11)        | 2.64 (0.14)   | 3.03 (0.10)    | 2.66 (0.09)                            |  |
| Conscientiousness       | 4.01 (0.13)                 | 4.06 (0.11)                   | 4.38 (0.11)        | 4.55 (0.12)   | 4.03 (0.08)    | 4.46 (0.08)                            |  |
| Agreeableness           | 4.17 (0.11)                 | 4.30 (0.11)                   | 4.50 (0.10)        | 4.73 (0.11)   | 4.23 (0.08)    | 4.61 (0.07)                            |  |
| Extraversion            | 5.29 (0.14)                 | 4.72 (0.14)                   | 4.43 (0.14)        | 4.59 (0.14)   | 5.01 (0.10)    | 4.52 (0.10)                            |  |
| Openness to experiences | 5.59 (0.13)                 | 5.14 (0.14)                   | 5.00 (0.14)        | 4.84 (0.14)   | 5.37 (0.10)    | 4.92 (0.10)                            |  |

Note. Standard errors are presented in parentheses.

Table 5. *F-Statistics From ANOVAs on the Evaluations of the Target Character*

|                         | Main Effects |       |          | Interactions        |                |                      |                              |
|-------------------------|--------------|-------|----------|---------------------|----------------|----------------------|------------------------------|
|                         | (1)          | (2)   | (3)      | (4)                 | (5)            | (6)                  | (7)                          |
|                         | Bisexuality  | Match | Gender   | Bisexuality × Match | Match × Gender | Bisexuality × Gender | Bisexuality × Match × Gender |
| Stereotypical traits    |              |       |          |                     |                |                      |                              |
| Confusion               | 16.05***     | 0.01  | 8.80**   | 0.39                | 1.27           | 0.21                 | 0.01                         |
| Promiscuity             | 21.87***     | 0.05  | 5.27*    | 3.12                | 0.07           | 0.17                 | 1.67                         |
| Nonmonogamy             | 28.43***     | 0.36  | 1.76     | 0.02                | 3.15           | 1.20                 | 0.25                         |
| Untrustworthiness       | 0.15         | 0.13  | 0.39     | 2.55                | 0.00           | 0.02                 | 0.56                         |
| Nonstereotypical traits |              |       |          |                     |                |                      |                              |
| Neuroticism             | 7.17**       | 0.52  | 12.29*** | 0.80                | 0.17           | 1.01                 | 0.45                         |
| Conscientiousness       | 11.59***     | 0.66  | 8.39***  | 0.11                | 0.03           | 0.24                 | 0.16                         |
| Agreeableness           | 11.71***     | 2.13  | 11.11*** | 0.01                | 0.06           | 0.00                 | 0.00                         |
| Extraversion            | 11.90***     | 2.02  | 0.04     | 6.32*               | 2.04           | 0.37                 | 0.05                         |
| Openness to experiences | 10.45***     | 1.18  | 2.62     | 4.82*               | 0.01           | 2.20                 | 2.76                         |

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . Exact  $p$  values for significant results above .001 are reported in the text.

(see Table 5, fourth column). Follow-up analyses revealed that in both cases a bisexual woman dating a man was perceived as more extraverted and more open to experience than a heterosexual woman,  $F(1, 252) = 7.88, p = .005$ , and  $F(1, 252) = 14.59, p < .001$ , respectively. In contrast, bisexual women dating a woman were not perceived as more extraverted or open to experience than lesbians (both  $F$ s  $< 1$ ). There were no differences between a bisexual woman dating a man and a bisexual woman dating a woman in any of the other traits, as indicated by the nonsignificance of the effects (main effect and interactions) involving the gender match variable.

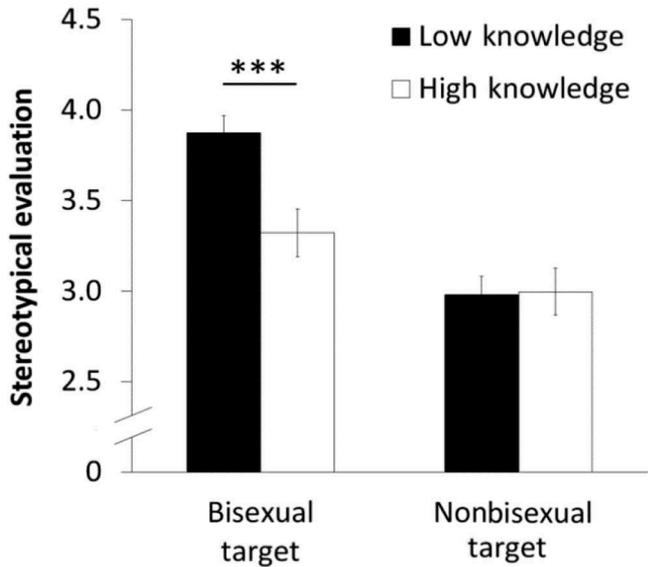
**Effect of participants' gender.** Women tended to give more favorable evaluations than men, regardless of the target character's sexual orientation, as indicated by significant main effects of the participants' gender in five out of the nine characteristics (Table 5, third column). Women evaluated the target as more conscientious,  $F(1, 252) = 8.39, p = .004$  ( $M = 4.46$  versus  $M = 4.10$ ); more agreeable,  $F(1, 252) = 11.11, p < .001$  ( $M = 4.64$  versus  $M = 4.26$ ); less confused,  $F(1, 252) = 8.80, p = .003$  ( $M = 2.47$  versus  $M = 2.87$ ); less promiscuous,  $F(1, 252) = 5.27, p = .02$  ( $M = 4.03$  versus  $M = 4.36$ ); and less neurotic,  $F(1, 252) = 12.29, p < .001$  ( $M = 3.03$  versus  $M = 2.58$ ). Importantly, men and women were equally affected by the target's bisexuality, as indicated by the nonsignificance of the interactions between these factors (Table 5, sixth and seventh columns).

### Relationship Between Stereotype Knowledge and Stereotypical Evaluation

Having found that bisexual women were evaluated stereotypically relative to lesbians and heterosexual women, we turned to examine the relationship between stereotype knowledge and stereotypical evaluation of bisexual women. Prior to analysis, the original data were transformed in two ways: First, to conform to previous literature on stereotype knowledge (e.g., Devine, 1989; Zivony & Lobel, 2014), we divided participants into high and low stereotype knowledge groups, based on the median split<sup>4</sup> in their overall stereotype knowledge score.<sup>5</sup> Second, to avoid multiple comparisons, we calculated a single measure that encapsulated the four

<sup>4</sup>To avoid possible problems from dichotomizing continuous data (MacCallum, Zhang, Preacher, & Rucker, 2002), we also examined the correlation between bisexual stereotype knowledge and stereotypical evaluations. The correlation was highly significant among participants who evaluated a bisexual target,  $r(129) = -.245, p = .005$ , but not among participants who evaluated a nonbisexual target  $r(127) = .016, p = .85$ . Analysis with Fisher's  $r$ -to- $z$  transformation confirmed that the difference between the two correlations was significant,  $z = 2.1, p = .036$ .

<sup>5</sup>Note that the bisexual stereotype knowledge score included knowledge of stereotypes that were not evaluated in this study (e.g., masculine). However, all the analyses yielded the same conclusions when we calculated the participants' stereotype knowledge based on their indication of the four most stereotypically related categories (promiscuous, confused, not really bisexual, and nonmonogamous).



**Figure 1.** Average stereotypical evaluation (confusion, promiscuity, non-monogamy, and untrustworthiness) as a function of target's bisexuality and participants' knowledge of bisexual stereotypes; \*\*\* $p < .001$ .

hypothesized stereotypical traits: confusion, promiscuity, non-monogamy, and untrustworthiness.<sup>6</sup> Reliability analysis with Cronbach's alpha on all eight subscales of the stereotypical traits produced a result of  $\alpha = 0.79$ . We therefore calculated the average of the four traits as our measure of stereotypical evaluation.

We subjected the average stereotypical evaluation measure to a two-way ANOVA with the target's bisexuality (bisexual versus nonbisexual) and the participants' knowledge of bisexual stereotypes (low versus high) as between-subject variables. The average results are presented in Figure 1. As can be seen in the figure, having bisexual stereotype knowledge did not affect the evaluations of nonbisexual targets, but as predicted by the stereotype deduction account, having bisexual stereotype knowledge was associated with a less stereotypical evaluation of bisexual targets. This observation was confirmed by a statistically significant interaction between stereotype knowledge and the target's bisexuality,  $F(1, 252) = 6.07, p = .014$ , and a significant simple effect of stereotype knowledge for the evaluation of bisexual targets,  $F(1, 130) = 11.41, p < .001$ , but not for the nonbisexual targets,  $F < 1$ . For the sake of completeness, we examined whether this particular pattern emerged in any of the nonstereotypical traits. To do so, we subjected the evaluations of the five nonstereotypical traits to a series of the same two-way ANOVAs, but the interaction between target's bisexuality and stereotype knowledge did not reach significance in any of these analyses, all  $ps > .05$ .

<sup>6</sup> We included untrustworthiness into the new measure of stereotypical evaluation, even though it did not significantly differ between bisexuals and nonbisexuals, as it was part of the originally hypothesized pattern. Removing untrustworthiness from the analysis did not change any of the reported results.

## Discussion

This study examined heterosexuals' evaluations of bisexual women. We replicated earlier studies showing that heterosexuals use specific social stereotypes in their evaluation of bisexual individuals (Spalding & Peplau, 1997; Zivony & Lobel, 2014). Bisexual women were evaluated as more confused, promiscuous, and less inclined to monogamous relationships than lesbians and heterosexual women, thereby conforming to the bisexual stereotype. We also found that individuals who were less aware of the traits society associates with bisexuals (i.e., had less stereotype knowledge) were more inclined to use stereotypes in their evaluation of bisexual women. In the following sections we expand on these results and explore their meaning.

### The Stereotypes of Bisexual Women

Subjective reports from bisexual individuals indicate that they are evaluated prejudicially in light of specific social stereotypes (e.g., Hutchins & Kaahumanu, 1991; McLean, 2007; Ochs & Rowley, 2005; Udis-Kessler, 1996). Previous empirical studies that asked participants to evaluate bisexual individuals have focused on either a subset of these stereotypes (Spalding & Peplau, 1997) or have focused on the stereotypes of bisexual men (Zivony & Lobel, 2014). The results reported here extend these previous studies and show that heterosexuals use bisexual stereotypes in their evaluation of bisexual women.

Interestingly, whereas Zivony and Lobel's (2014) study showed that the evaluation of bisexual men conformed only to bisexual stereotypes, as described by previous authors (e.g., Israel & Mohr, 2004), the evaluations of bisexual women extended to other personality traits: Bisexual women were evaluated as less dependable, less emotionally stable, and less agreeable than lesbians and heterosexual women. Bisexual women were also evaluated as more extroverted and open to experiences, especially if dating a man, (However, the difference between bisexual women who date men and those who date women should be interpreted cautiously, as they did not meet the more conservative criteria for significance after correction for multiple tests; see note 2.) Finally, while bisexual men in Zivony and Lobel (2014) were evaluated as untrustworthy relative to gay and heterosexual men, no such effect was found for bisexual women. To account for these disparities, we offer nonexclusive explanations, though these were formulated post hoc and should be regarded as such.

First, previous authors noted that whereas the legitimacy of bisexuality is questioned for bisexual men and women alike, the reasoning behind this questioning is qualitatively different (e.g., Flanders & Hatfield, 2014; Steinman, 2001; Rust, 2000b). Bisexual men are often considered to be closeted gay men who are lying (to their partners or to themselves) in order to hide from the social stigmas revolving around same-sex behavior in men (Flanders & Hatfield, 2014). In contrast, same-sex

**Table 6.** *Partial Correlations Between Evaluations Related to Sexual Activity (Promiscuity and Nonmonogamy) and Personality Traits (Agreeableness, Conscientiousness, and Neuroticism)*

| Sexual Activity | Agreeableness | Conscientiousness | Neuroticism |
|-----------------|---------------|-------------------|-------------|
| Promiscuity     | -.04          | -.14*             | .16*        |
| Nonmonogamy     | -.26***       | -.23***           | .32***      |

Note. Each analysis controls for the target's bisexuality, gender match between target and nontarget, and the participant's gender.

\* $p < .05$ ; \*\*\* $p < .001$ .

behavior in women is more accepted, especially when it can be appropriated for the viewing pleasure of heterosexual men (Fahs, 2009; Louderback & Whitley, 1997). Consequently, bisexuality in women is often considered to be a phase of sexual experimentation among young heterosexual women, or even a call for attention. Thus, it is possible that bisexual women were not evaluated as untrustworthy because they are not perceived as dishonest but merely experimenting. Moreover, it is possible that bisexual women dating a man were perceived as being especially extroverted and open to new experiences because they fit more neatly into the image of young women, who “perform bisexuality” but are actually heterosexual (Fahs, 2009).

Second, many social commentators have noted that men who are sexually active are evaluated positively (“studs”), whereas women who are sexually active are evaluated negatively (“sluts”). Specifically, studies have shown that sexually active women are perceived as being less successful, less popular, and less intelligent (Marks & Fraley, 2006). Thus, it is possible that the perception of promiscuity in bisexual women leads to a negative evaluation of bisexual women on other traits. To provide some support for this last speculation, we tested the correlations between two sets of measures: on the one hand, our measures of promiscuity and nonmonogamy, which relate to sexual activity; on the other hand, our measures of neuroticism, conscientiousness, and agreeableness. The target's bisexuality, gender match between target and nontarget, and the participants' gender were used as covariates. This analysis showed that individuals who perceived the target as being sexually active also evaluated her as being less agreeable, less conscientious, and more emotionally unstable (see Table 6), thereby supporting the existence of a negative bias toward sexually active women in our sample.

Whether these speculative explanations are accurate is beyond the scope of the current research. However, the results show that biased evaluations of bisexual women extend the borders of the bisexual stereotype previously described in the literature (e.g., Israel & Mohr, 2004; Rust, 2002). This conclusion contributes to the literature on the social perception of bisexual individuals and can inform future research on the topic.

## The Stereotype Deduction Account

The main finding of this study is that individuals who had less stereotype knowledge about bisexual women were more likely to adhere to these stereotypes. This correlation can serve as a litmus test for competing theories of bisexual stereotypes: It is readily explained by the stereotype deduction account but cannot be explained by the stereotype learning account. Given that bisexuals do receive limited, though highly stereotypical, media representation (San Filippo, 2013; San Francisco Human Rights Commission, 2011), we cannot discount the notion that some learning about bisexual stereotypes is possible. However, if stereotypes can only be learned, social contact should go hand in hand with both stereotype knowledge and the ability to use stereotypes in evaluation. In other words, this account predicts that stereotype knowledge should be positively related to stereotypical evaluation, not inversely related to it. Rejecting the stereotype learning account opens the door to new theories about the origin of bisexual stereotypes. However, before interpreting these results further, we address two possible methodological concerns.

One possible concern is that, as stereotype knowledge was gauged prior to evaluations of the target character, individuals who elaborated on their stereotype knowledge were less inclined to use these stereotypes due to social desirability effects (i.e., responding in a manner which will be deemed favorable by the experimenter). However, results from previous studies, as well as those of the current study, suggest that this concern is unwarranted. First, measurement of stereotype knowledge traditionally precedes the measurement of prejudice. However, the negative correlation between the two factors was only ever found for bisexuals (Zivony & Lobel, 2014, Study 1), and not any other social group (Augoustinos et al., 1994; Devine, 1989; Gordijn et al., 2001; Lepore & Brown, 1997). Second, if social desirability had an effect on evaluations in our study, we would expect to find a similar relationship between evaluations and stereotype knowledge of lesbians and heterosexual women. We examined this possibility with a series of one-way ANOVAs, with stereotype knowledge regarding the relevant group (low versus high, based on median split) as the between-subject factor and the evaluation of the target characters on all nine traits as the dependent variable. Even though some of the evaluations were stereotypically charged (e.g., that heterosexual women are emotionally unstable or that lesbians are not agreeable; see Table 2) and should have been affected by social desirability, none of these tests reached statistical significance, all  $ps > .05$ . These results suggest that having more stereotype knowledge does not always lead to reduced bias, as would be expected if the relationship was mediated by social desirability.

An additional concern is that our measure of stereotype knowledge applies differently to familiar and unfamiliar social groups. Previous stereotype knowledge studies focused on well-known racial minorities (e.g., Australian participants were asked about Aborigines; Augoustinos

et al., 1994), in which case stereotype knowledge can presumably be freely recalled from memory. Perhaps, in a case of a less known social group, participants who fail to describe specific stereotypes would be able to recognize them as stereotypes, if their memories were probed in a different manner. This concern, while possible, does not compromise our use of the stereotype knowledge measure. Note that we do not suggest participants who did not report a certain stereotype were necessarily ignorant of it. Instead, the self-generated measure should be interpreted as a relative indicator of stereotype knowledge, meaning that participants who generated more descriptions are likely to be more knowledgeable about the stereotype than those who generated fewer descriptions. This conservative interpretation nevertheless allows us to examine the way in which stereotype knowledge and stereotypical evaluation covary. Moreover, even if there is some truth to this concern, it does not explain why prejudiced individuals were less likely to report specific stereotypes. Indeed, not only should prejudiced individuals have more knowledge about stereotypes (in case of an unknown social group), they should be more motivated to elaborate on this knowledge to affirm their own beliefs (Gordijn et al., 2001). Therefore, we are quite certain that the negative relationship between stereotype knowledge and stereotypical evaluation in the bisexual group was not caused due to methodological confounds.

If bisexual stereotypes are not learned through social contact, what alternative source of knowledge do individuals rely on for their biased evaluation of bisexuals? According to the stereotype deduction account (Zivony & Lobel, 2014), the stereotypes of bisexuals are based on a shared understanding of sexuality and sexual orientation. More specifically, as males and females are perceived as “opposite sexes,” it follows that sexual orientation has a trajectory. For example, LeVay (1993) conceptualized sexual orientation as “the direction of sexual feelings or behavior toward individuals of the opposite sex (heterosexuality), the same sex (homosexuality), or some combination of the two (bisexuality)” (p. 105). Understanding bisexuality as being pulled in two opposite directions is not necessarily accurate and does not reflect bisexuals’ self-definition (see Ochs, 1996; Ochs & Rowley, 2005). Moreover, this understanding can easily lead to deductions that are conspicuously close to the social stereotypes of bisexuals, starting with the intuition that anyone holding two contradictory attractions should be conflicted, confused, and unsatisfied in any monogamous relationship. This would explain how individuals can use stereotypes in the evaluation of bisexuals, even when they have little prior knowledge about bisexuals or the traits society associates with them.

If bisexual stereotypes are deduced, public invisibility should not only coexist with them but also encourage their use in evaluation. The adoption of stereotypes is the result of an interplay between competing mechanisms. Existing stereotypes automatically come to mind in any encounter with members of a social group, but individuals can use cognitive control to avoid using them. However, cognitive

control is effortful and implemented only when the adoption of these associations conflicts with the individuals’ motivations, such as complying with egalitarian values (Devine & Sharp, 2009; Kunda & Spencer, 2003). Accordingly, if an individual does not recognize certain associations as offensive, he or she should have no reason to suppress them. This explains why people not only use bisexual stereotypes in the near absence of stereotype knowledge but are more likely to do so than people who are familiar with bisexual stereotypes. Note that other factors can contribute to the negative correlation between stereotype knowledge and stereotypical evaluation. For example, individuals who have positive attitudes toward bisexuals might also be more likely to seek knowledge about bisexual stereotypes. Nevertheless, this possibility does not change the disconcerting conclusion that if bisexual stereotypes are deduced, lack of public awareness should generally increase the social prejudice experience by bisexuals, not decrease it.

Other aspects of the stereotype deduction account are also indirectly supported by studies of factors that affect prejudice toward bisexuals. The stereotype deduction account places the genesis of the stereotypes of bisexuals in a broader belief system regarding gender and sexual orientation. This notion is supported by the finding that priming traditional gender roles (in comparison to blurred gender roles) increased negative attitudes toward bisexuals in participants who were not personally acquainted with bisexual individuals (Rubinstein, Makov, & Sarel, 2013).

The stereotype deduction account also predicts that bisexual stereotypes should not be maintained in the same way as learned stereotypes. Models of stereotype formation suggest that the motivations for maintaining stereotypes are internal (i.e., to match one’s worldview or uplift one’s self-worth in the face of perceived threats; see McGarty, Yzerbyt, & Spears, 2002; Stephan, Ybarra, & Rios Morrison, 2009). These motivations should not drive the maintenance of deduced stereotypes, which are essentially misconceptions based on inaccurate assumptions. This prediction receives indirect support from studies regarding prejudice-reducing interventions: prejudice toward bisexuals can be reduced by reading a brief informative excerpt regarding bisexuality, but not by reading noninformative personal stories of bisexuals (Bronson, 2006; Perez-Figueroa, Alhassoon, & Wang-Jones, 2013). In contrast, empathy-inducing interventions were more effective than educative interventions in reducing prejudice toward gay men (for review, see Bartos, Berger, & Hegarty, 2014). These findings suggest that, unlike other stereotypes, bisexual stereotypes are founded on inaccurate information.

Finally, the stereotype deduction account yields predictions for future research about other social groups. Stereotypes can be deduced in cases where social groups, by their definition, deviate from a well-established system of shared meaning. For example, the stereotypes that gay men are feminine and lesbians are masculine might be deduced as a reversal of the social roles ascribed to men and women.

In this case, common sense can guide social perception, even without social contact with the stereotyped group. However, such a claim would be difficult to substantiate, as exposure to these groups is common and stereotypes could result from the overgeneralization of uncommon features (Hamilton, 1981). One approach for future research would be to find converging evidence from other relatively unknown social groups. For example, asexuality, or lack of sexual attraction, is considered a distinct sexual orientation by some (Bogaert, 2015) and is often associated with transitional immaturity (MacNeela & Murphy, 2015). This perception possibly stems from the overarching notion that the development of sexual attraction is a necessary outcome of puberty, which would suggest that asexual individuals are underdeveloped and immature. As asexuality is also largely unknown to the general public, the stereotype deduction account predicts that a negative correlation between stereotype knowledge and biased evaluation will emerge in the evaluation of asexuals.

To summarize, the stereotype deduction account provides a novel explanation for the origin of bisexual stereotypes and the factors that affect their implementation in the evaluations of bisexuals. This account is also supported by several pieces of indirect evidence and charts a clear path for future research. The idea that certain stereotypes can be deduced, rather than learned, can inform not only our understanding of bisexual stereotypes but also our understanding of stereotype formation in general.

### Limitations

Our study had some notable limitations. First, stereotype knowledge was rather low in general, even for well-known stereotypes such as the stereotypes of heterosexual women (see Table 3). Given that participants in Internet-based studies are less committed than participants in laboratory settings, it is plausible that this measure did not fully represent stereotype knowledge. Nevertheless, even if this is true, our findings cannot result from a lack of commitment by the participants; had that been the case, then the inverse relationship between evaluations and stereotype knowledge would have been found for all target characters, not just the bisexual characters. Second, multiple statistical tests were conducted, which can lead to alpha inflation. Note, however, that the statistical tests regarding the two main hypotheses (i.e., the stereotypical evaluation of bisexual women and the inverse relationship between these evaluations and stereotype knowledge among people who evaluated bisexual women) remain significant even after conservative corrections to the alpha levels. Third, both target and nontarget characters were illustrated as Caucasian. We recognize that stereotypes surrounding sexuality may vary across racial and ethnic groups. A possibly fruitful avenue for future research would be to examine in what way perceptions regarding racial and ethnic groups interact with perceptions regarding bisexuals. Moreover, as can be seen in Table 1, our sample was predominantly Caucasian, which might limit the generalization of our conclusions. We

examined whether the bias in the evaluation of bisexual targets differed between Caucasians and participants from all other ethnic groups combined and found no significant effects (all  $F$ s < 1). Finally, similar to previous studies (Spalding & Peplau, 1997; Zivony & Lobel, 2014), our sample consisted of heterosexuals only. It would also be interesting if our findings could be generalized to gay and lesbian individuals who, on the one hand, hold prejudicial attitudes toward bisexuals (e.g., Burke & LaFrance, 2016; Mohr & Rochlen, 1999; Rust, 1993) but, on the other hand, should be more aware of bisexuals and the social stereotypes associated with bisexuals.

### Implications

The results of the current and previous studies suggest that bisexual women are stereotyped as promiscuous and confused (Burke & LaFrance, 2016; Spalding & Peplau, 1997; Zivony & Lobel, 2014). Stereotypes of bisexuals can fuel social exclusion and violence (Herek, 2002) and lower the rates of disclosure of bisexual individuals (Mohr, Jackson, & Sheets, 2017), thus aggravating the social isolation experienced by bisexuals even further. Importantly, our conclusions might explain why bisexuals encounter prejudice from otherwise supportive individuals: People who are unfamiliar with the stereotype might simply not be aware they are behaving prejudicially. For example, therapists often try to help their bisexual clients to embrace a gay or lesbian identity and reject bisexuality as a transitory stage (Firestein, 2007), thereby tapping to the stereotype that all bisexual individuals are inherently confused. But our study has some encouraging implications as well. It is possible that some aspects of the prejudice toward bisexuals do not stem from bigotry but rather from ignorance and inaccurate assumptions regarding bisexuality. If that is the case, educating individuals about bisexuality might have immediate beneficial outcomes (Bronson, 2006; Perez-Figueroa et al., 2013), as the behavior of informed individuals is less likely to be guided by uninhibited stereotypes.

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