

# A Real Time Social Norms Intervention to Reduce Male Sexism

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Published online: 30 April 2008  
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**Abstract** College males' overestimation of peers' sexism may result in reluctance to challenge these toxic attitudes. Researchers investigated the power of a brief intervention to correct these cognitive distortions in Southeastern U.S. undergraduate samples of unacquainted ( $N=65$ ; 86.2% Caucasian) and acquainted males ( $N=63$ ; 82% Caucasian). Participants first reported self-perceptions of attitudes toward women and then estimated the attitudes of other men present. Intervention participants attended brief presentations that included feedback on discrepancies between actual and perceived norms within their groups. At 3 week follow up, there was a significant decrease in perceptions of peers' sexism for intervention groups, indicating that a brief intervention may be useful in sexism reduction.

**Keywords** Sexual assault · Prevention · Sexism · Social norms

## Introduction

Sexist attitudes undergird physical and psychological violence against women, a problem of epidemic proportions nearly everywhere in the world. Egalitarian men may be reluctant to challenge these attitudes in peers for fear of

being ostracized. Several researchers (Bruce 2002; Kilmartin et al. 1999; White 2002) have demonstrated that college men overestimate the sexism and rape-supportive attitudes of male peers, and this cognitive distortion is thought to create an atmosphere where men collude to support toxic attitudes in those men who may be prone toward sexual aggression. If one could design an effective intervention to demonstrate to men that their male peers are less sexist than they perceive them to be, they may feel more willing to challenge these men and contribute to a more positive peer culture. The purpose of the present studies is to investigate the extent to which college undergraduate men overestimate male peers' sexist attitudes, and if so, the extent to which a brief intervention can result in a correction of this cognitive distortion. We also investigated the differences and similarities of misperceptions between men who are unacquainted (Experiment 1) and those who are acquainted (Experiment 2) with one another.

According to Social Norms Theory, people are often negatively influenced by inaccurate perceptions of how other members of their social group act or think (Berkowitz 2003; Haines 1997). When making decisions about their behavior, people consciously or unconsciously take into account what "most people" in their same social position appear to be doing. When people misperceive peers' attitudes toward risky health behaviors (e.g., drug use, disordered eating, sexual assault), they may be more likely to engage in these behaviors than they would be if their perceptions were accurate. Therefore, correcting misperceptions of peers' attitudes should decrease the likelihood of engaging in problematic behavior (Haines 1997).

According to Berkowitz (2003), there are two common types of misperceptions. Pluralistic ignorance is the assumption that one is in the minority, when in fact he or she is in the majority. For example, someone who does not

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The authors wish to thank the Virginia Department of Health and the University of Mary Washington Advisory Council on Diversity and Community Values for financial support of this project, and Christine McBride for her help in the preparation of the manuscript.

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smoke may believe that most people smoke, when in fact they do not. False consensus is the belief that one is in the majority when in fact he or she is in the minority, e.g., college high-risk drinkers may believe that most other college students engage in similar drinking patterns, when in fact they do not. Pluralistic ignorance encourages people to partake in behaviors in which they think the majority of people engage and to suppress their own attitudes, which they incorrectly assume are in the minority. False consensus encourages those whose behaviors are actually in the minority to continue engaging in the behavior without the awareness that they are doing something non-normative and perhaps dangerous for the self and/or others.

The extreme behaviors of people who engage in false consensus are often more visible than the healthier behaviors of people who are actually in the majority (Toch and Klofas 1984, as cited in Berkowitz 2003). Because others are more likely to notice this minority than they are to notice those engaging in the majority behavior, there is a tendency to assume that the minority behavior is more common than it actually is. For example, a college student who attends a party may be more likely to notice others who are consuming large amounts of alcohol than those who are not, and a man in a single-sex social conversation may be more likely to notice his peers who make sexist comments than he would be to notice the men who do not, as action is generally more noticeable than inaction.

Social norms interventions are attempts to reduce risk behavior in a population by persuading people that the majority of those within the population engage in healthy behaviors, i.e., by undermining pluralistic ignorance. These interventions were originally designed to reduce high-risk drinking in college students (Haines 1997). Their effectiveness in doing so is a matter of some controversy. Wechsler et al. (2003) reported no decrease in alcohol consumption at institutions that used social norms marketing compared with those that did not. However, DeJong et al. (2006) demonstrated significantly lowered levels of alcohol consumption in a multiple site, randomized trial of social norms marketing campaigns, and several universities are reporting that their campaigns are successful (Hoover 2004).

More recently, social norms interventions have been expanded to include other areas such as sexual assault prevention, bystander intervention, and the reduction of eating disordered behavior (Berkowitz 2003). The effectiveness of this approach for these areas has not yet been empirically established.

Most social norms interventions take the form of public information campaigns that describe what “average people” do or think. However, people may also be influenced by the perceived behaviors of people they know. In a study of alcohol consumption among college students, Campo et al.

(2003) found that drinking behavior was much more influenced by the perceived norms of friends than they were by the perceived norm of the “average person.” It may be the case that even credible information about the average within the population is limited in its ability to persuade because the “average person” is an abstraction. Interventions that target actual people (e.g., your friends or the others with whom you are participating), thus providing “local” norms, can augment the more common interventions that describe “global” norms.

Kilmartin et al. (1999) found that a public information campaign was effective in correcting men’s misperceptions of global norms in rape supportive and sexist attitudes of average men, but that men’s misperceptions of close friends were virtually unaffected by the intervention. The present study is an attempt to apply a social norms intervention with college men to a significant risk factor for sexual assault, negative attitudes toward women, using feedback on the misperception of the attitudes of male peers who are physically present and providing that feedback in real time, i.e., immediately after men report the perception.

According to Kilmartin and Berkowitz (2005), three conditions are necessary for a sexual assault to occur. First, male perpetrators of heterosexual sexual assault have several psychological characteristics that distinguish them from normal and healthy men, such as adversarial sexual beliefs (ASB) (the view of men and women as enemies), perceptions of having been hurt or betrayed by women, hostile feelings toward women, hypermasculinity, and motivations of dominance, anger, and interpersonal power (Lisak and Roth 1988). Second is the decision to commit a crime. Regardless of his characteristics, personal history, and attitudes, a perpetrator is responsible and accountable for his decision, except perhaps in the extremely rare circumstance in which he is psychotic. The third condition is peer support—the social environment that encourages men who have the aforementioned characteristics to commit a sexual assault. When a man makes a sexist comment within an all-male group and others laugh, show agreement, or remain silent, the group overtly or tacitly approves a negative attitude toward women that is a strong predictor of sexual assault. As Berkowitz (2003) states, “Individuals who do not personally engage in the problematic behavior may contribute to the problem in the way that they talk about the behavior...For a norm to be perpetuated, it is not necessary for the majority to believe it, but only for the majority to believe that the majority believes it.” (p. 260).

Several researchers (Bruce 2002; Kilmartin et al. 1999; White 2002) have demonstrated that men overestimate the extent to which other men are sexist; thus they experience social pressure to display sexism even if they privately hold non-sexist attitudes. As a result, they may exacerbate the

false consensus in potentially aggressive men that their actions are normative and acceptable and/or encourage peers to engage in other sexist behavior. Boswell and Spade (1996) noted that sexist attitudes and behaviors are on display in fraternities that are at high risk for sexual assault and concluded that, “When together in groups with other men, [members of high risk fraternities] sensed a pressure to be disrespectful towards women” (p. 277). The overestimation of peers’ sexism is thought to underlie men’s reluctance to voice their disapproval of disrespectful behavior. Developing an intervention that will address this cognitive distortion should result in a greater willingness to intervene by challenging peers’ expression of sexism. We hypothesized that: 1) College males will overestimate the sexist attitudes of the other men currently in the room with them, and 2) a social norms intervention delivered immediately after they report their attitudes and their estimation of their peers’ attitudes will significantly reduce the overestimation of the sexist attitudes of the average male in the room compared with the control group. A second study was necessary to investigate the third hypothesis: that those who reported knowing one another well would be more influenced by the intervention than men who did not. This hypothesis was exploratory in nature and based on the theory that people are influenced most strongly by others whom they perceive as being like themselves (Cialdini 1993). Men who know one another well are presumed to view themselves as having more in common than men who do not. On the other hand, men who have social interactions with one another have many opportunities for interpersonal influence, and so these frequent interactions may dilute the effectiveness of the intervention.

The independent variable in both experiments is a brief intervention in which a presenter explains to intervention group participants how and why misperceptions of other men’s attitudes occur, accompanied by feedback on misperceptions within their group. Control group participants were merely dismissed after completing the instruments. The dependent variables were measures of sexism, adversarial sexual beliefs, and discomfort with other men’s sexism. All dependent measures were administered twice, once in description of the participant’s attitudes, and once in his estimation of the attitudes of other men present.

## Experiment 1

There are two hypotheses for Experiment 1: 1) College males will overestimate the sexist and rape supportive attitudes of the other men currently in the room with them as measured by both scales of the Ambivalent Sexism

Inventory (ASI), the Discomfort with Sexism (DWS) measure, and the Adversarial Sexual Beliefs Scale, and 2) A social norms intervention delivered immediately after participants report their attitudes and their estimation of their peers’ attitudes will significantly reduce the overestimation of the sexist attitudes of the average male in the room at 3-week follow up compared with the control group.

## Method

### *Participants*

Sixty-five male undergraduate psychology students from a medium-sized (approximately 4,000 students) liberal arts college in the Southeastern United States participated in exchange for course credit. The average age of participants was 19.2 years. Ethnicity largely reflected the lack of ethnic diversity in the student population of the college, with a large majority (86.2%) of Caucasian participants. African-American participants comprised 1.5% of the sample, Hispanic/Latino, 4.6%, and Asian/Pacific Islander, 6.2%. One participant listed his ethnicity as Asian/Caucasian. Sixty-one of the original 65 participants completed the follow-up survey, and the pretests from the other four participants were discarded.

### *Measure*

In addition to completing a demographic questionnaire asking for age, year in school, and ethnicity, participants completed several instruments twice: first reporting their own attitudes and then reporting their estimation of “the average man in the room.”

*Hostile sexism scale* (Hostile Sexism (HS), from the Ambivalent Sexism Inventory, Glick and Fiske 2001): an 11-item questionnaire with a 6-point Likert-type scale for each item ranging from “Disagree Strongly” (0) to “Agree Strongly” (6) that measures negative attitudes toward women. A sample item is “Women are too easily offended.” The total score is the mean of all individual items. Across all administrations of the scale in the current study, the average Cronbach’s alpha reliability was .93.

*Benevolent sexism scale* (Benevolent sexism (BS), from the Ambivalent Sexism Inventory, Glick and Fiske 2001): an 11-item questionnaire with a 6-point Likert-type scale for each item ranging from “Disagree Strongly” (0) to “Agree Strongly” (6) that measures the paternalistic belief that women are special and need the protection of men, termed the “women are wonderful effect” by the authors of the instrument. A sample item is “Many women have a quality

of purity that few men possess.” The total score is the mean of all individual items. Across all administrations of the scale in the current study, the average Cronbach’s alpha reliability was .81.

In ASI studies of more than 15,000 participants in 19 countries, Hostile and Benevolent Sexism consistently emerge as meaningful ideologies and separate but positively correlated factors. Hostile Sexism is unidimensional and addresses beliefs that women are manipulative and untrustworthy. Three subfactors emerge in Benevolent Sexism: protective paternalism (beliefs that women should be rescued before men), gender differentiation (that women have a purity that men do not), and heterosexual intimacy (that a man needs a woman to adore). Glick and Fiske (2001) argue that Hostile and Benevolent Sexism are “complementary, mutually supportive justifications of patriarchy and conventional gender relations.” (p 112).

*Adversarial sexual beliefs scale* (ASB; Burt 1980) a 6-point Likert-type scale ranging from “Disagree Strongly” (0) to “Agree Strongly” (5) that measures the belief that sexual relationships are exploitive and manipulative. A sample item is “Women are usually sweet until they’ve caught a man, but then they let their true self show.” Scores are computed by adding ratings on all items. The mean Cronbach’s alpha reliability in the current study was .81.

Adversarial Sexual Beliefs are seen in higher intensity in sexually aggressive men compared with non-aggressive men (Lisak and Ivan 1995; Yost and Zurbriggen 2006), and in men who show a high likelihood to sexually harass women (Lucero et al. 2006).

*Discomfort with sexism scale* (DWS; Kilmartin et al. 1999): presents social situations in all-male groups and asks the participant to rate their level of comfort-discomfort on a 7-point Likert scale ranging from “Very Comfortable” (1) to “Very Uncomfortable” (7). A sample item is “You and some male friends are walking down campus walk, as a woman that you have never seen before walks past. After you pass her, one of your friends says, ‘I’d bend that over and nail her in a heartbeat.’” This scale was developed as a rough measure of men’s reactions to other men’s sexism, and the psychometric properties of the scale have not been established. Scores are computed by adding ratings of all items. Across all administrations of the scale in the current study, the average Cronbach’s alpha reliability was .83.

### Procedure

The researchers recruited male participants through the introductory psychology research participant pool and randomly assigned them to Intervention ( $N=31$ ) and

Control ( $N=30$ ) conditions. There were four groups in each condition, ranging in size from five to nine participants each. All participants completed an informed consent form and all measures from both the perspective of the self and from the estimated perspective of “the average person in the room.” The Control group was debriefed and dismissed. The intervention group received an approximately 20-min presentation based upon Far and Miller’s (2003) Small Group Model Norms Challenging Intervention, which was designed to reduce alcohol abuse by increasing accurate perceptions of student alcohol consumption (Far and Miller 2001). All participants returned approximately 3 weeks later to complete the same instruments from both the self-report and estimation of others’ perspectives.

The intervention was a presentation facilitated by a male member of the research team. The content included:

1. A scenario in which a young woman under the influence of alcohol receiving unwanted sexual advances from a man. The facilitator conducted a very brief discussion about what participants would do and how they would feel in that situation.
2. “Everybody thinks”: basic information on social norms and the finding that people tend to overestimate negative behaviors and underestimate positive behaviors.
3. “Why do people make perceptual errors?” The facilitator describes the availability heuristic (the tendency to overestimate events that are more visible than the majority of events) (Myers 2007), and the distortion that results from a comparison of one’s inner experience with another person’s appearance. For example, watching another person laugh at a joke would lead one to believe that he or she thought that the joke was funny, even if the person did not like the joke but was laughing just to be polite.
4. “How do misperceptions affect behaviors?” The facilitator discusses conformity and the consequent failure to challenge problematic behaviors in others.
5. “Misperceived Norms.” The facilitator gives feedback in graph form on the group’s actual responses and misperceptions of those responses by comparing the actual norm (mean of group’s self-perceptions) and the perceived norm (mean of the group’s estimation of the other men in the room) compiled by research team members during the first part of the intervention and delivered to the facilitator.
6. “Bystander Behaviors” explains the steps one must take in order to intervene in a problematic situation (Latané and Darley 1970) and applied to the scenario at the beginning of the presentation. To intervene, one must notice the behavior, interpret it as problematic, take responsibility for intervening, decide on a course of action, and implement the strategy.

## Results

### *Do Men Overestimate the Sexist Attitudes of Other Men?*

Dependent samples *t*-tests were run to determine if there were significant differences between the perceived (e.g. “the average person in the room”) and actual (e.g. rating of own attitudes) scores on each of the four dependent variables. The results supported Hypothesis 1. Participants believed that others in the room were significantly higher on Hostile Sexism, Benevolent Sexism, and Adversarial Sexual Beliefs than the others reported. Participants also believed that others in the room would be more comfortable with sexism than they reported. Means, standard deviations, and statistical results of these analyses are in Table 1.

### *Does a Social Norms Intervention Change Perceptions of Others?*

To evaluate Hypothesis 2, a two-way mixed multivariate analysis of variance (MANOVA) was run using condition (control group vs. experimental group) as the between-groups variable and pre/post ratings of the average other in the room for each dependent variable as repeated measures variables. A MANOVA was chosen because the four dependent variables are conceptually related. The results showed a nonsignificant multivariate effect for condition,  $F(4, 57)=2.07, p=.097$ . However, significant multivariate effects were found for time (pre/post),  $F(4, 57)=5.35, p=.001$ , and for the interaction,  $F(4, 57)=4.63, p=.003$ . This significant interaction indicates that the difference between the control and experimental groups on the linear combination of the four dependent variables was different at pre-test than at post-test.

To evaluate the significant multivariate interaction, follow-up analyses of variance (ANOVAs) were run separately for each dependent variable. Of particular interest is whether the control group scores stayed the same from pre-test to post-test and experimental group scores changed in the predicted direction from pre-test to post-test. This pattern of results would indicate that the intervention

was having an effect on the experimental group and provide strong support for Hypothesis 2. For perceptions of others’ Hostile Sexism, there was no difference between the pre-test and posttest conditions for the control group,  $F(1, 30)=.326, p=.572$ . However, in the experimental group ratings of others’ Hostile Sexism decreased in the post-test condition when compared to the pre-test condition,  $F(1, 30)=21.81, p<.001$ . For perceptions of Adversarial Sexual Beliefs, there was no difference between the pre-test and post-test conditions for the control group,  $F(1, 30)=1.45, p=.238$ . However, in the experimental group ratings of others’ Adversarial Sexual Beliefs decreased in the post-test condition when compared to the pre-test condition,  $F(1, 30)=18.96, p<.001$ . For perceptions of Discomfort with Sexism, there was no difference between the pre-test and post-test conditions for the control group,  $F(1, 30)=.152, p=.700$ . However, in the experimental group, ratings of others’ Discomfort with Sexism increased in the post-test condition when compared to the pre-test condition,  $F(1, 30)=16.28, p<.001$ . For Benevolent Sexism, there was no difference between the pre-test and post-test conditions for the control group,  $F(1, 30)=.457, p=.504$ . However, in the experimental group ratings of others’ Benevolent Sexism decreased in the post-test condition when compared to the pre-test condition,  $F(1, 30)=3.09, p=.045$ . Means and standard deviations for each of these analyses are in Table 2.

## Experiment 2

The results of Experiment 1 provided support for both hypotheses. Participant ratings of the average other in the room were significantly different from ratings of the self on all variables measured (Hypothesis 1). In addition, the results showed that after an intervention, the participants’ perceptions of others changed in the predicted direction on all four dependent measures, with a decrease in perception of peers’ Hostile Sexism, Benevolent Sexism, and Adversarial Sexual Beliefs, and an increase in the perception of peers’ Discomfort with Sexism (Hypothesis 2). Experiment 2 hypotheses were: 1) Undergraduate males who are

**Table 1** Dependent sample *t*-tests: perceived average vs. actual average, pre-intervention, Experiment 1.

	Perceived average		Actual average		<i>t</i>	<i>P</i>
	Mean	SD	Mean	SD		
Hostile sexism	3.58	.74	2.81	.92	6.75	.001
Benevolent sexism	2.88	.54	2.59	.80	2.42	.009
Adversarial sexual beliefs	25.98	5.95	15.69	6.55	11.51	.001
Discomfort with sexism	17.08	6.45	23.50	5.99	-6.96	.001

Scale for hostile sexism and benevolent sexism range=0 to 5. Scale for adversarial sexual beliefs range=0 to 45. Scale for discomfort with sexism range=5 to 35 with high scores indicating discomfort with sexism.

**Table 2** Mean scores of perceptions of the average other for control and Experimental groups, Experiment 1.

	Control group				Experimental group				<i>d</i>
	Pre mean	SD	Post mean	SD	Pre mean	SD	Post mean	SD	
Hostile sexism	3.63	.74	3.58	.75	3.53	.75	2.87	.90	.88
Adversarial sexual beliefs	25.61	5.50	26.68	5.42	26.36	6.44	19.90	7.57	1.00
Discomfort with sexism	16.81	6.48	17.26	6.89	17.36	6.51	21.77	6.42	.68
Benevolent sexism	2.74	.50	2.69	.58	3.02	.55	2.80	.71	.40

Effect size (*d*) only calculated on Experimental groups where significant change occurred in the predicted direction using formula=(pre mean–post mean)/(pre SD). Scale for hostile sexism and benevolent sexism range=0 to 5. Scale for adversarial sexual beliefs range=0 to 45. Scale for discomfort with sexism range=5 to 35 with high scores indicating discomfort with sexism.

acquainted with one another will overestimate the sexist and rape supportive attitudes of the other men currently in the room with them as measured by the Hostile Sexism, the Discomfort with Sexism measure, and the Adversarial Sexual Beliefs scale, 2) A social norms intervention delivered immediately after participants report their attitudes and their estimation of their peers' attitudes will significantly reduce the overestimation of the sexist attitudes of the average male in the room at 3-week follow up compared with the control group, and 3) Intervention participants would be more strongly influenced than those in Experiment 1.

Because the goal was to study men who were acquainted with one another, it was necessary to use a different recruitment strategy for participants in the second experiment.

## Method

### Participants

Sixty-three undergraduate college males from the same college as Experiment 1 participated in this study and were compensated with \$5 restaurant gift certificates for their participation in each session. One man from each group organized his group's participation and he was compensated by two additional gift certificates. All certificates were given after the completion of the follow up session to avoid attrition, and all participants returned for the follow up session. The average age of the participants was 19.62. The reported ethnicities of participants were 82% Caucasian, 10% Asian, 3% Native American, 3% Middle Eastern, and 1% Hispanic. One participant reported "other" as his ethnicity.

Participants were recruited via electronic mail and word of mouth, and took part in the study in groups of six to nine men who reported that they knew each other well. When asked to describe the relationships within the group, 67% of participants reported that they were friends with the other men in their group, 13% listed themselves as living mates (including roommates, suitemates, and dorm mates), 10% were fraternity brothers, 7% were club mates, and 3% were teammates.

### Measure

Participants in Experiment 2 completed the same measures as in Experiment 1. In addition to completing a demographic questionnaire asking for age, year in school, and ethnicity, participants completed several instruments twice: first reporting their own attitudes and then reporting their estimation of "the average man in the room."

*Hostile sexism scale* (HS, from the Ambivalent Sexism Inventory, Glick and Fiske 2001): an 11-item questionnaire with a 6-point Likert-type scale for each item ranging from "Disagree Strongly" (0) to "Agree Strongly" (6) that measures negative attitudes toward women. A sample item is "Women are too easily offended." The total score is the mean of all individual items. Across all administrations of the scale in the current study, the average Cronbach's alpha reliability was .93.

*Benevolent sexism scale* (BS, from the Ambivalent Sexism Inventory, Glick and Fiske 2001): an 11-item questionnaire with a 6-point Likert-type scale for each item ranging from "Disagree Strongly" (0) to "Agree Strongly" (6) that measures the paternalistic belief that women are special and need the protection of men, termed the "women are wonderful effect" by the authors of the instrument. A sample item is "Many women have a quality of purity that few men possess." The total score is the mean of all individual items. Across all administrations of the scale in the current study, the average Cronbach's alpha reliability was .81.

In ASI studies of more than 15,000 participants in 19 countries, Hostile and Benevolent Sexism consistently emerge as meaningful ideologies and separate but positively correlated factors. Hostile Sexism is unidimensional and addresses beliefs that women are manipulative and untrustworthy. Three subfactors emerge in Benevolent Sexism: protective paternalism (beliefs that women should be rescued before men), gender differentiation (that women have a purity that men do not), and heterosexual intimacy

(that a man needs a woman to adore). Glick and Fiske (2001) argue that Hostile and Benevolent Sexism are “complementary, mutually supportive justifications of patriarchy and conventional gender relations.” (p 112).

*Adversarial sexual beliefs scale* (ASB: Burt 1980) a 6-point Likert-type scale ranging from “Disagree Strongly” (0) to “Agree Strongly” (5) that measures the belief that sexual relationships are exploitive and manipulative. A sample item is “Women are usually sweet until they’ve caught a man, but then they let their true self show.” Scores are computed by adding ratings on all items. The mean Cronbach’s alpha reliability in the current study was .81.

Adversarial Sexual Beliefs are seen in higher intensity in sexually aggressive men compared with non-aggressive men (Lisak and Ivan 1995; Yost and Zurbriggen 2006), and in men who show a high likelihood to sexually harass women (Lucero et al. 2006).

*Discomfort with sexism scale* (DWS: Kilmartin et al. 1999): presents social situations in all-male groups and asks the participant to rate their level of comfort-discomfort on a 7-point Likert scale ranging from “Very Comfortable” (1) to “Very Uncomfortable” (7). A sample item is “You and some male friends are walking down campus walk, as a woman that you have never seen before walks past. After you pass her, one of your friends says, ‘I’d bend that over and nail her in a heartbeat’.” This scale was developed as a rough measure of men’s reactions to other men’s sexism, and the psychometric properties of the scale have not been established. Scores are computed by adding ratings of all items. Across all administrations of the scale in the current study, the average Cronbach’s alpha reliability was .83.

### Procedure

Because the goal of the study was to assess the influences of acquainted men on one another, individual random assignment was not possible, so groups of participants were randomly assigned to either the Control condition ( $N=30$ )

or the Intervention condition ( $N=33$ ). There were four groups in each condition, ranging in size from six to nine participants each. Procedures were identical to Experiment 1. All participants completed all instruments, first describing their own attitudes, and then estimating the attitudes of the other men in the room. Control group participants were then dismissed.

Intervention group participants attended the same intervention described in Experiment 1: an approximately 20-min presentation based upon Far and Miller’s (2003) Small Group Model Norms Challenging Intervention (see Experiment 1 for description). All participants returned approximately 3 weeks later to complete the same instruments from both the self report and estimation of others’ perspectives.

### Results

#### *Do Men Overestimate the Sexist Attitudes of Other Men?*

As in Experiment 1, dependent samples *t*-tests were run to determine if there were significant differences between the perceived and actual scores on each of the four dependent variables. Once again, participants believed that others in the room were significantly higher on Hostile Sexism, Benevolent Sexism, and Adversarial Sexual Beliefs than the others reported. Participants also believed that others in the room would be more comfortable with sexism than others reported. Means, standard deviations, and statistical results for these analyses are in Table 3.

#### *Does a Social Norms Intervention Change Perceptions of Others?*

As in Experiment 1, a two-way mixed MANOVA was run using condition (control group vs. experimental group) as the between-groups variable and pre/post ratings of the average other in the room for each dependent variable as repeated measures variables. The results showed a nonsignificant multivariate effect for condition,  $F(4, 58)=2.13$ ,  $p=.089$ . However, significant multivariate effects were found for time (pre/post),  $F(4, 58)=3.39$ ,  $p=.015$ , and for

**Table 3** Dependent sample *t*-tests: perceived average vs. actual average, pre-intervention, Experiment 2.

	Perceived average		Actual average		<i>t</i>	<i>P</i>
	Mean	SD	Mean	SD		
Hostile sexism	2.98	.92	2.65	.90	4.09	.001
Benevolent sexism	2.52	.88	2.34	.91	1.94	.029
Adversarial sexual beliefs	22.02	6.83	17.21	6.75	7.92	.001
Discomfort with sexism	21.59	6.67	23.59	6.52	−3.02	.002

Note: Scale for Hostile Sexism and Benevolent Sexism range=0 to 5. Scale for adversarial sexual beliefs range=0 to 45. Scale for discomfort with sexism range=5 to 35 with high scores indicating discomfort with sexism.

the interaction,  $F(4, 58)=3.09, p=.022$ . This significant interaction again indicates that the difference between the control and experimental groups on the linear combination of the four dependent variables was different at pre-test than at post-test.

To evaluate the significant multivariate interaction, the same set of follow-up ANOVAs were run as in Experiment 1. For perceptions of Hostile Sexism, there was no difference between the pre-test and post-test conditions for the control group,  $F(1, 29)=.566, p=.458$ . However, in the experimental group ratings of others' Hostile Sexism decreased in the post-test condition when compared to the pre-test condition,  $F(1, 32)=12.55, p<.001$ . For perceptions of others Adversarial Sexual Beliefs, scores were significantly higher in the pre-test condition than in the post-test condition for the control group,  $F(1, 29)=8.51, p=.007$ . However, in the experimental group there was no difference in the ratings of others' Adversarial Sexual Beliefs between the pre-test and post-test conditions,  $F(1, 32)=1.23, p=.138$ . For perceptions of Discomfort with Sexism, there was no difference between the pre-test and post-test conditions for the control group,  $F(1, 29)=1.04, p=.317$ . However, in the experimental group ratings of Discomfort with Sexism increased in the post-test condition when compared to the pre-test condition,  $F(1, 32)=6.10, p=.010$ . For Benevolent Sexism, there was no difference between the pre-test and post-test conditions for the control group,  $F(1, 29)=.029, p=.867$ . However, in the experimental group, ratings of Benevolent Sexism increased in the post-test condition when compared to the pre-test condition,  $F(1, 32)=8.47, p=.007$ . This unexpected increase in perceptions of others' Benevolent Sexism for the experimental group could be partially due to an unusually low pre-test score for this group. In fact, the pre-test Benevolent Sexism score for the experimental group was significantly lower than the pre-test Benevolent Sexism score for the control group,  $F(1, 61)=4.99, p=.029$ . Means and SD for each of these analyses are in Table 4.

#### *A Direct Comparison of Groups Comprised of Strangers vs. Those Comprised of Friends*

An evaluation of Hypothesis 3 rests on a comparison of groups of non-acquainted and acquainted men. One way to determine if the type of experimental group influenced changes in perceptions of others is to look at the number of dependent variables where change in perception of others occurred in predicted directions. In Experiment 1, where the experimental group was comprised of unacquainted men, change occurred in the predicted direction on all four dependent variables. In Experiment 2, where the experimental group was comprised of acquaintances, change occurred in the predicted direction on only two of the four dependent variables. In addition, for Experiment 1 the average effect size ( $d$ ) for the four variables that changed was .74, whereas the average effect size for the two variables that changed in Experiment 2 was only .41. Thus, Hypothesis 3 was not confirmed. The intervention was somewhat less powerful for acquainted than for unacquainted men, perhaps because acquainted men have vastly more opportunities to influence one another than unacquainted men.

#### Discussion

The results of Experiments 1 and 2 were somewhat similar. In both studies, college males were found to overestimate the extent of others' sexism and underestimate their comfort with sexism, whether or not they were judging men whom they knew or did not know. In both cases, the discrepancies between the perceived average and the actual average were robust across all scales, indicating that men who are familiar with one another are no more accurate at predicting their peers' attitudes than men who are relative strangers. As men may behave in sexist ways to win the approval of other men (Kilmartin and Berkowitz 2005), the correction of these cognitive distortions is an important first step in

**Table 4** Mean scores of perceptions of the average other for the control and Experimental groups, Experiment 2.

	Control group				Experimental group				d
	Pre Mean	SD	Post Mean	SD	Pre Mean	SD	Post Mean	SD	
Hostile sexism	2.84	1.02	2.76	1.10	3.11	.81	2.75	.92	.44
Adversarial sexual beliefs	22.27	6.83	19.87	8.32	21.82	6.82	20.64	7.09	–
Discomfort with sexism	21.30	5.96	22.33	6.36	21.85	7.34	24.55	4.16	.37
Benevolent sexism	2.77	.87	2.76	.96	2.30	.83	2.63	.81	–

Effect size ( $d$ ) only calculated on Experimental groups where significant change occurred in the predicted direction using formula=(pre mean–post mean)/(pre SD). Scale for hostile sexism and benevolent sexism range=0 to 5. Scale for adversarial sexual beliefs range=0 to 45. Scale for discomfort with sexism range=5 to 35 with high scores indicating discomfort with sexism.



reducing men's display of negative attitudes toward women.

There is ample evidence that a brief intervention was successful at reducing this perceptual distortion in both experiments at 3-week follow up compared with control group participants, but the intervention was more successful with non-acquainted than with acquainted men. In Experiment 1, men's estimation of other men's sexism, adversarial sexual beliefs, and discomfort with other men's sexism all changed in the direction of greater accuracy. In Experiment 2, accuracy of others' attitudes was only significantly improved for two of the four dependent variables, Hostile Sexism and Discomfort with Sexism. It is unclear why the estimations of Benevolent Sexism and Adversarial Sexual Beliefs did not change. Acquainted men obviously have more opportunities to influence one another than non-acquainted men, and so they may have had more interactions around these dimensions than they had around the dimensions that did not change. A full examination of the differences in outcome for acquainted and unacquainted men is important for further study, as perceived similarity to the self is powerful aspect of influence (Cialdini 1993).

In his classic social psychological research, Solomon Asch (1965) illustrated the powerful effect of unanimity in pressuring people to conform to incorrect judgments. Asch also demonstrated that the presence of a single ally who reports the correct response has the effect of sharply reducing conformity. This intervention has the potential to increase the perception of that ally and thus encourage men who are uncomfortable with sexism and rape-supportive attitudes to challenge other men who display these attitudes.

As sexist attitudes are significant risk factors for gender-based violence, this intervention holds promise as a primary prevention strategy. For unacquainted men, the intervention might be useful in settings like first year college student orientation, although it remains to be seen whether group size has an effect on the results. If it does not, then there is the potential to reach men en masse if one has the resources to quickly tabulate and analyze the results and feed them back to the group in real time. For acquainted men, the intervention is useful but may have to be augmented by discussions around Benevolent Sexism and Adversarial Sexual Beliefs.

#### Limitations and Future Research

In addition to the limitations of using a non-diverse group of participants, a relatively small sample, and an instrument (DWS) with unestablished psychometric properties, a major limitation is the lack of longer-term measurement of the effect of the intervention. Future research should include an investigation of how long the impact of the intervention endures. If its effects hold long term, then we will have

developed an easy to use and very economical intervention. If they do not, it will be evidence that prevention specialists will need to apply multiple interventions over time.

Future interventions should also include definition and discussion of the toxicity of benevolent sexism and adversarial sexual beliefs. Size of group and stimulus value of the facilitator would also be worthwhile variables to investigate. Researchers should also attempt to ascertain in debriefing if acquainted participants discussed the issues with others between pretest and post-test, and if so, should be asked to describe the contents of these conversations.

Educating men about their overestimation of their peers' sexism is only a first step in preventing gender-based violence. In subsequent efforts, educators should also teach men specific techniques for challenging sexist behavior in other men. They should also encourage men to strive for aspirational standards (fully respectful relationships and positive social change) and not just minimum standards (refraining from sexual assault and overt sexism) in their sexual and nonsexual relationships with women.

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