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THE EFFECTS OF AMBIENT BENEVOLENT SEXISM AND ITS IMPLICATIONS

IN THE WORKPLACE

by

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A THESIS

Presented to the Faculty of the Graduate School of the

MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY

In Partial Fulfillment of the Requirements for the Degree

MASTER OF SCIENCE IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

2019

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ABSTRACT

The purpose of this study was to examine women's reactions to witnessing benevolent sexism (i.e., ambient benevolent sexism). Female participants ($n = 59$) witnessed another woman being treated with hostile sexism (HS), benevolent sexism (BS), or no sexism and their reactions were examined in respect to a) working memory capacity, b) task-specific self-efficacy, c) mental intrusions of incompetence, and d) negative affect. The study also examined how participants' personal endorsement of BS impacted the relationship between sexism condition and the outcome variables. Results indicate that there were no direct effects of sexism condition on the outcome variables, though there was an interaction between condition and BS endorsement in predicting negative affect. Specifically, participants who witnessed BS, compared to the control condition, reported higher negative affect to the extent that they endorsed BS. No interactions were found for the other three outcome variables. These results suggest that endorsement of BS may cause women to be more vulnerable to the negative emotional impacts of witnessing BS. As such, these results also suggest that interventions to reduce women's endorsement of BS may help women be able to better cope with or protect themselves from the effects of ambient BS.

ACKNOWLEDGEMENTS

First, I would like to profoundly thank Dr. Jessica Cundiff, my thesis advisor. Without her patience, guidance, insight, and support, this research would not have been possible. I would also like to thank Dr. Devin Burns for his assistance with methodology and analyses, and Dr. Clair Kueny for always keeping me focused on IO. I am eternally grateful for their helpful comments and for always pushing me to be a better writer and researcher.

TABLE OF CONTENTS

Page

APPENDICES

LIST OF ILLUSTRATIONS

LIST OF TABLES

1. INTRODUCTION

1.1. AMBIVALENT SEXISM THEORY

Most people can easily identify the most blatant and explicit forms of sexism, such as beliefs that men should control women, that women are less intelligent or less competent than men, or that women are sexually manipulative toward men. However, sexism does not always manifest itself in such an overt, easily recognizable way. Ambivalent sexism theory (Glick & Fiske, 1996) postulates that sexism is made up of two components: hostile sexism and benevolent sexism. Hostile sexism (HS) is what most often comes to mind when people think of sexism. It involves openly aggressive beliefs or actions toward women, often toward women who violate prescribed gender norms (Glick & Fiske, 1996). HS can occur in three forms: 1) dominative paternalism, or the belief that women need to be controlled by men, 2) competitive gender differentiation, or the belief that biological differences between the sexes justify gender discrimination, and 3) heterosexual hostility, or the tendency to view women only as sex objects and the fear that women may use their sexuality to gain control over men (Glick & Fiske, 1997). In the workplace, HS may manifest as discriminatory exclusion from social networks or workgroups, derogatory comments, or sexual harassment such as explicit sexual jokes or innuendos, unwelcome sexual remarks, or requests for sexual favors.

Benevolent sexism (BS), in contrast, involves seemingly innocuous beliefs or actions that are not outwardly hostile but that still serve to reinforce the traditional, stereotypical view of a woman. BS can also occur in three forms that are parallel to those

of HS, though BS is focused more on praising women's traditional feminine values than on a desire to dominate women. These three forms are: 1) protective paternalism, or the belief that women need to be protected and men have a responsibility to take care of them, 2) complementary gender differentiation, or admiration of women's stereotypically nurturing characteristics and adherence to traditional gender roles, and 3) heterosexual intimacy, or the belief that men are not complete without having the love of a woman (Glick & Fiske, 1997). In the workplace, for example, women may be passed over for travel opportunities because of presumed family responsibilities, may be tasked with administrative or clerical work with the justification that women are naturally better at those tasks, or may be given less challenging assignments in an attempt to protect them from some form of hardship.

While these two components of sexism may seem to be contradictory at first glance, they are actually deeply connected. Both forms of sexism share the assumption that women are weaker and less competent than men and aim to maintain the status quo that places men above women in the patriarchal social hierarchy. Indeed, the main impetus behind the existence of both HS and BS is the desire to uphold female gender norms, in essence praising women who appear to conform and punishing those who do not.

Benevolent sexism tends to be viewed in a positive light. That is, men who perpetuate BS often feel genuinely affectionate toward women and, because their beliefs and actions are coming from a subjectively positive place, they tend to have trouble seeing the underlying patronizing connotations of BS (Glick & Fiske, 1997). However, even women cannot always identify the sexist undertones of BS. For example, Barreto

and Ellemers (2005) found that men who voice benevolently sexist views are evaluated more positively than men who voice hostile sexist views. Through mediation analyses, the authors discovered that, because benevolently sexist men are viewed positively and thus do not fit the hostile view of a prototypical sexist, both men and women were less likely to view BS, compared to HS, as a type of prejudice or discrimination. HS tends to be much easier to identify as sexist and is considered much less socially acceptable than BS (Kilianski & Rudman, 1998), whereas BS is often perceived positively and tends to go unchallenged.

The result is that BS may actually be more damaging to women's advancement than HS because it undermines gender equality in a more discrete, often unnoticed way. Because HS is an overt form of sexism and easily recognizable as discrimination, women may find its effects less damaging because they can more easily write off sexist comments or behavior as being a reflection of the perpetrator and not a reflection of themselves. That is, a woman may be able to better cope with experiencing HS because it is easier for her to recognize that the person is doing and saying sexist things because they are a sexist person and not because of any personal failings on her own part. Conversely, because BS is much subtler and is construed as positive on the surface, it may be more difficult for women to recognize the sexism and take similar measures to protect themselves against it. In this way, experiencing BS may have more harmful effects than experiencing HS because it is harder for women to guard against BS and explain away incidents of BS as just being sexism. That is, women who are exposed to BS may be more likely to internalize feelings of inferiority versus making external attributions for the sexist behavior. Additionally, BS may be more harmful than HS in

some situations because it induces intrusive thoughts about women's incompetence, which can affect their concentration and task performance. For example, Dardenne, Dumont, & Bollier (2007) found that, when treated with BS in the context of a job interview, women performed worse on a cognitive test than women who were treated with hostile sexism or no sexism due to BS causing women to experience mental intrusions of incompetence.

1.2. THE CURRENT STUDY

The current research aims to further our understanding of the potential negative consequences of being exposed to sexism in the workplace. Much of the previous research regarding sexism in the workplace has focused on hostile or overt sexism (e.g., Fitzgerald et al., 1997; Willness, Steel, & Lee, 2007), with less research looking at the impact of experiencing benevolent or more subtle forms of sexism. However, some research suggests that benevolent sexism may have more severe consequences than hostile sexism (e.g., Dardenne et al., 2007; Jones et al., 2014). Additionally, the majority of sexism research has examined how women can be affected by experiencing direct sexism, or sexism directed toward them specifically, while significantly less research has focused on the effects of indirect or ambient sexism; that is, how witnessing sexism can impact bystanders. The research that does exist on ambient sexism almost exclusively looks at the effects of ambient HS (e.g., Glomb et al., 1997; Miner-Rubino & Cortina, 2007; Cunningham, Miner, & Benavides-Espinoza, 2012), with nearly no research on ambient BS. The current research addresses this gap in the literature by investigating how being exposed to ambient BS can impact women's self-perception, mood, and

performance in the workplace. Ultimately, this research aims to explore whether the negative outcomes of BS are more pervasive than previously thought by studying how exposure to benevolent sexism impacts bystanders. If the current research proves fruitful, it can have important implications for how organizations choose to tackle the issue of sexism and gender discrimination in the workplace.

1.3. HOW SEXISM IMPACTS TARGETS

This section briefly examines research concerning the effects of direct hostile and benevolent sexism, or the impact of experiencing sexism directly targeted toward oneself.

1.3.1. Hostile Sexism. A large body of research has investigated the harmful effects of sexism, particularly hostile sexism, on the well-being of targets. In particular, research has tended to focus on the negative effects that come with experiencing sexual harassment in organizations. For example, Fitzgerald et al. (1997) found that sexual harassment influences a variety of outcomes, including directly influencing work outcomes (e.g., job satisfaction) and psychological health (e.g., anxiety and depression), and indirectly influencing physical health via psychological health. A meta-analysis by Willness et al. (2007) corroborates these findings, identifying outcomes of workplace sexual harassment to include lower job satisfaction and organizational commitment, lower productivity, higher work withdrawal, poorer physical and mental health, lower life satisfaction, and even higher rate of symptoms of post-traumatic stress disorder.

1.3.2. Benevolent Sexism. While BS may seem outwardly harmless and trivial, and while some women may like the feeling of being protected and revered, directly experiencing BS can have significant negative impacts on many facets of a woman's life.

For example, being a target of paternalistic BS at work can imply to a woman that she is not capable of doing things on her own, which can cause her to lose faith in her own abilities and ultimately impair her cognitive and task performance (Dardenne et al., 2007; Yamamoto & Ohbuchi, 2011). Additionally, women who are a target of BS are often perceived to be less competent at their jobs (Good & Rudman, 2010; Good, 2011) and tend to be provided with less challenging assignments and developmental opportunities (King et al., 2012), all of which may prevent women from advancing to high-level positions in an organization and may contribute to the underrepresentation of women in top leadership.

1.4. HOW SEXISM IMPACTS BYSTANDERS

Whereas prior work has demonstrated the harms of being the direct target of both benevolent and hostile sexism, the literature has only begun to explore the effects of *witnessing* incidents of sexism. What research *has* shown, however, is that witnessing HS tends to produce similar harmful outcomes as directly experiencing HS firsthand. For example, LaCosse, Sekaquaptewa, and Bennett (2016) found that witnessing another woman being treated in an overtly sexist manner caused women to question women's abilities in STEM and doubt how much they themselves belonged in STEM fields. Past research (Adams et al., 2006) has also indicated that merely being exposed to the suggestion that HS may occur, though not actually experiencing it, can impair a woman's learning and task performance. Specifically, Adams et al. (2006) found that raising concerns about the possibility of being a target of HS led women to become more vigilant for cues that they would be treated unfairly, which distracted them from the task at hand.

Furthermore, individuals who are indirectly exposed to sexual harassment, a form of HS, experience similar outcomes as do the targets of the harassment themselves because sexual harassment incites a stressful work environment for both target and observers (Glomb et al., 1997). These outcomes include lower job satisfaction, higher rate of psychological conditions, and more work withdrawal. Glomb et al. (1997) suggested that ambient exposure may cause stress to observers of sexual harassment because 1) observers may become worried that they will become a target of harassment themselves, 2) they may see that there is a lack of support toward the victim or that there is a negative response from the victim's coworkers or from the organization, or 3) they may feel that they are powerless in coming to the aid of a coworker who is experiencing sexual harassment. Further research has also indicated that witnessing hostile sexism can have negative impacts on women's well-being and can contribute to organizational withdrawal (Miner-Rubino & Cortina, 2007).

Much of the previous research has focused on the impact of witnessing HS, whereas only one study to my knowledge has explicitly focused on the impact of witnessing BS. Bradley-Geist, Rivera, and Geringer (2015) found that women who witnessed BS experienced a decrease in performance-based self-esteem and lowered career aspirations. However, the authors did not examine the impact of ambient BS on cognitive performance, which is a key aspect of the current research. Experiencing indirect hostile sexism results in many of the same outcomes as experiencing direct hostile sexism; I suspect the same to be true of direct and indirect benevolent sexism. If a woman sees another woman be a target of BS, thus priming her to expect that she may be treated in the same benevolently sexist manner (Adams et al., 2006; Glomb et al., 1997),

it may impair her performance just as well as if she had been targeted by the sexism firsthand.

1.5. PREDICTED IMPACT OF AMBIENT BENEVOLENT SEXISM

This section reviews literature on the impact of direct benevolent sexism on cognitive performance, task-specific self-efficacy, mental intrusions of incompetence, and negative affect, and makes predictions as to the impact of ambient benevolent sexism on these variables. The section also investigates how endorsement or rejection of benevolent sexism may impact the strength of these relationships.

1.5.1. Cognitive Performance. Previous research has demonstrated that women's cognitive performance is impaired when they are exposed to direct BS before completing a cognitive task (Jones et al., 2014; Yamamoto & Ohbuchi, 2011). Some have proposed that this outcome may be due to the paternalistic nature of BS causing women to internalize the notion that they are not able to do things on their own and promoting intrusive thoughts that they are incompetent at the task at hand (Dardenne et al., 2007; Dumont, Sarlet, & Dardenne, 2010), thus interfering with cognitive performance. In this vein, paternalistic BS, or the belief that women should be protected and cared for by men, subtly reinforces the belief that women are the weaker sex and evokes the stereotype that women are incompetent. It has been well documented that priming these types of negative stereotypes can lead to lower performance among women and other stigmatized minorities (e.g., Steele & Aronson, 1995; Spencer, Steele, & Quinn, 1999; Nguyen & Ryan, 2008; Schmader, Johns, & Forbes, 2008; Inzlicht & Schmader, 2012). This phenomenon, known as stereotype threat, is thought to occur because individuals become

concerned that their poor performance may be taken as confirmation of a negative

stereotype against their social group, which distracts them from performing to their

fullest potential (Steele, 1997). That is, making stereotypes salient, particularly

stereotypes that have to do with performance such as the stereotype of women having

poor skills in math, can cause pressure on individuals to worry about confirming the

stereotype, which can then result in poorer performance of which they would otherwise

be capable.

One result of stereotype threat may be to impair working memory capacity

(WMC), which involves the ability to temporary store pieces of information as well as

the ability to focus attention on that information and ignore distractors (Engle, 2001). For

example, Schmader and Johns (2003) found that women performed worse on a working

memory test when the test was described as a measure of quantitative capacity compared

to a control condition where this description of the test was omitted. Seeing another

woman be a victim of BS, or even just being aware of an environment of BS that exists in

her workplace, may prime a woman to be more aware of the negative stereotypes about

women. Even if she was not a direct target of BS herself, women may worry about

confirming those stereotypes in the eyes of others or worry that they may be treated

unfairly, which can then distract them from their work and potentially impair their

cognitive performance, in the form of impairing WMC. Even though both HS and BS

invoke negative stereotypes of women and may impair cognitive performance to some

extent, I predict that being exposed to ambient BS may be more damaging for women's

performance than ambient HS. This could occur due to women having more trouble

coping with the negative outcomes of BS, which may cause BS to lead to more self-doubt than HS. That is, women may be better able to cope with ambient HS because it is more easily recognized as sexism and may promote feelings of anger and motivation to perform, but it would not necessarily lead to self-doubt in the same way that ambient BS would.

H1: Women who are exposed to ambient BS will demonstrate lower WMC than women who are exposed to ambient HS and women who are not exposed to sexism.

1.5.2. Task-Specific Self-Efficacy and Mental Intrusions of Incompetence. Women's self-perceptions can be negatively affected by exposure to BS. For example, research has shown that being a target of paternalistic BS can negatively impact women's self-efficacy, or how much they believe in their own ability to achieve goals or complete tasks (Jones et al., 2014). Additionally, Dumont et al. (2010) found that women who experienced BS reported having more intrusive thoughts and memories regarding feelings of incompetence than those who experienced HS or a control condition. A similar pattern was found by Dardenne et al. (2007), who found that BS inhibits cognitive performance in women by causing them to experience mental intrusions of incompetence, which distracts them from completing the task to the best of their ability. These findings suggest that BS, more so than HS, can lead women to feel incompetent and experience lowered self-efficacy. In the current study, I expect a similar relationship.

H2-3: Women who are exposed to ambient BS will demonstrate lower task-specific self-efficacy (H2) and more mental intrusions of incompetence (H3) than

women who are exposed to ambient HS and women who are not exposed to sexism.

Two types of self-efficacy have been measured in prior research: generalized self-efficacy and task-specific self-efficacy. Generalized self-efficacy (GSE; see Schwarzer & Jerusalem, 1995) refers to a person's tendency to feel confident about their performance in general, across a variety of domains. In contrast, task-specific self-efficacy involves a person's confidence that they can perform well on one specific task. Previous research has shown that GSE is trait-like and tends to remain stable over the long-term (Miyoshi, 2012), so it is unlikely that GSE will be greatly impacted by witnessing short-lived incidents of sexism. As such, this study measures a task-specific form of self-efficacy, specifically self-efficacy on a memory task, as opposed to GSE.

1.5.3. Negative Affect. Negative affect, or the experience of unpleasantness or negative emotions, can be affected by exposure to stressful events and can impact a variety of outcomes, including cognitive and task performance. Research has shown that direct exposure to sexist events may induce state negative affect (i.e., negative emotions in response to a particular stimulus that tend to be intense, but short-lasting), particularly anger, anxiety, and depression, due to these events being perceived as stressful (Swim et al., 2001). In addition to directly experiencing sexism, research has also shown that simply *reading* about overtly sexist events can induce emotional distress (Cunningham et al., 2012). In contrast to H1-3, which hypothesized that witnessing BS will result in more negative outcomes than witnessing either HS or no sexism, witnessing HS is predicted to be more harmful than BS for women's negative affect. Because HS is much more overtly negative than BS, it may be more likely than BS to induce negative emotions in both

targets and observers, even if those individuals do not necessarily internalize the sexist message. However, because research suggests that BS may also induce some amount of negative affect, I predict that witnessing BS will induce more negative affect than witnessing no sexism.

H4: Women who are exposed to ambient HS will demonstrate higher negative affect than women who are exposed to ambient BS, who will demonstrate higher negative affect than women who are not exposed to sexism.

1.5.4. Endorsement of Sexism. Women are more likely to endorse benevolent sexism than hostile sexism because BS is, on the surface, a more positive form of sexism (Barreto & Ellemers, 2005). Women can receive tangible benefits from others holding benevolently sexist attitudes toward them, such as reverence, care, and protection from the men in their lives; women who place value on these traits or who feel entitled to this kind of benevolent protection are more likely to endorse BS (Hammond, Sibley, & Overall, 2014). Additionally, the more prevalent HS is in a culture, the more that women tend to endorse BS, possibly in an attempt of self-protection by aligning themselves with benevolently sexist men who will offer them protection from other men's overt hostility (Glick & Fiske, 2001). Additionally, some women may internalize sexist ideals from being repeatedly exposed to society's negative views toward women (Becker, 2010).

Because BS is difficult to recognize as a type of sexism (Barreto & Ellemers, 2005), it may be more damaging than HS regarding certain outcomes (e.g., cognitive performance, self-efficacy) because women are not as easily able to guard against its negative effects. Additionally, women who more strongly endorse BS tend to be less likely to view BS as a type of sexism than women who less strongly endorse BS. This

means that women who strongly endorse BS may be less likely to recognize that men who treat them with BS are perpetuating patronizing patriarchal ideals and may be more likely to attribute the benevolently sexist behavior as genuine commentary about themselves and their own abilities, potentially creating feelings of self-doubt. As such, women who endorse BS may be more likely to experience the negative outcomes that can arise from either directly or indirectly experiencing BS (e.g., impacts on self-efficacy, mental intrusion, negative affect, and working memory capacity) because they are less able to take measures to protect themselves against these outcomes.

Recall that I predict that witnessing BS will result in more negative effects than witnessing HS or no sexism for WMC, memory self-efficacy, and mental intrusion, but that for negative affect, HS will be higher than BS, which will be higher than no sexism. I make similar differential predictions for the interaction of BS endorsement and sexism condition in predicting the outcome variables. Regarding WMC, task-specific self-efficacy, and mental intrusion, I expect that the negative effects of witnessing BS (vs. HS or no sexism) will be stronger among women who strongly endorse BS. However, regarding negative affect, I only expect there to be moderation between the BS and control conditions, but not between BS and HS conditions. That is, I expect negative affect to be stronger among women who witness BS vs no sexism, especially among women who strongly endorse BS. This is because women who endorse BS are more accepting of patronizing behavior and ideals that paint women as warm but incompetent, and so they may be more likely to perceive BS behavior as genuine commentary about their lack of ability, which should result in higher levels of negative affect. However, I do not predict the moderation of BS endorsement between the HS and BS conditions. That

is, I predict that negative affect should be higher among women who witness HS vs BS, regardless of BS endorsement (see H4). In the context of this study, there may be multiple causes of negative affect. For one, negative emotions may be triggered by perceiving that a person is being sexist, as would likely occur in the HS condition. Additionally, for women who endorse benevolent sexism, the BS condition may also induce negative affect by causing women to feel that they are incompetent at the memory task. Although both the HS and BS conditions may cause negative affect, I expect that the negative affect caused by witnessing overt sexism (HS) will be greater than the negative affect caused by feeling incompetent (BS), thus I predict that BS endorsement should not moderate the expected difference in negative affect between the BS and HS conditions.

> H5A-C: The effect of sexism condition on a) WMC, b) task-specific self-efficacy, and c) mental intrusion will be moderated by BS endorsement, such that the effects will be stronger for women who endorse BS more strongly. That is, exposure to BS will result in lower WMC, lower memory self-efficacy, and more mental intrusions of incompetence than exposure to HS and no sexism, especially among women who strongly endorse BS.

> H5D: The effect of sexism condition (BS vs control) on negative affect will be moderated by BS endorsement, such that the effect will be stronger for women who strongly endorse BS. That is, exposure to BS will result in higher negative affect than exposure to no sexism, especially among women who strongly endorse BS.

1.5.5. Mediation and Moderated Mediation. I predict that the relationship

between exposure to BS and WMC will be mediated by self-efficacy, mental intrusions,

and negative affect (see Figure 1.1). Research has demonstrated that self-efficacy has a

positive relationship with performance in a variety of work-related domains (e.g.,

Stajkovic & Luthans, 1998), and Jones et al. (2014) found evidence that self-efficacy

mediates the relationship between direct exposure to BS and self-reported job

performance. Further, research has also found that exposure to BS caused women to

experience mental intrusions regarding their own incompetence and was damaging to

their self-efficacy, which then negatively affected their cognitive performance (Dardenne

et al., 2007; Dumont et al., 2010). Following this line of research, I expect to find that

self-efficacy and mental intrusions similarly mediate the relationship between ambient

exposure to BS and cognitive performance (in the form of WMC). In addition, Bottcher

and Dreisbach (2014) found that high levels of state negative affect, particularly negative

affect that was triggered by social interaction, negatively impacted participants' cognitive

and task performance. Because sexism is experienced through social interaction, I expect

to find similar effects concerning indirect exposure to BS, with state negative affect

mediating the relationship between exposure to BS and cognitive task performance

(WMC).

> H6A-C: The relationship between exposure to BS and WMC will be mediated by
>
> a) task-specific self-efficacy, b) mental intrusions of incompetence, and c)
>
> negative affect, such that exposure to BS vs. HS or no sexism decreases memory
>
> self-efficacy and increases mental intrusion, and exposure to BS vs no sexism
>
> increases negative affect. All of these consequences will in turn decrease WMC.

H7: In line with H6, I expect the *a* paths of the predicted mediated effects to be moderated by BS endorsement in a first-stage moderated mediation. That is exposure to BS will result in a) lower memory self-efficacy and b) higher mental intrusion compared to HS or no sexism, and c) higher negative affect compared to no sexism, especially among women who strongly endorse BS. All of these outcomes (memory self-efficacy, mental intrusion, and negative affect) will then lead to lower WMC.
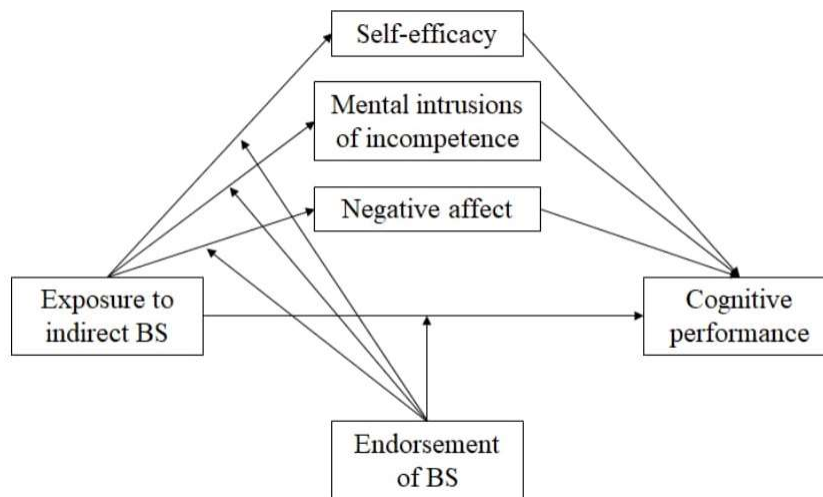

Figure 1.1. First-stage moderated mediation model.

2. METHOD

2.1. PARTICIPANTS

Female undergraduate students (N = 63) participated in the study for partial

course credit or $10. Sample size was determined using a priori power analysis using

GPower 3.1.9.2 (Faul et al., 2007). Previous literature on the effects of sexism on

cognitive performance (e.g., Schmader & Johns, 2003; Dardenne et al., 2007; Jones et al.,

2014) has produced effect sizes of f = .37 to .94. To provide a conservative estimate, the

power analysis was conducted using the lowest effect size from the literature (f = .37;

Dardenne et al., 2007). With alpha = .05 and power = .80 for a one-way ANOVA with

three groups, the power analysis indicated that 74 participants were needed. An additional

10% was added to compensate for exclusion criteria, resulting in a final required sample

size of 82 participants. However, I was only able to recruit 63 participants.

Participants were excluded if they met any of the following pre-determined

exclusion criteria: failed more than one of four attention checks distributed throughout

the self-report measures (N = 0); took less than one-third of the mean overall time of the

group to complete all four survey measures (Qualtrics Panel, 2014; N = 0); or expressed

suspicion of the reality or purpose of the study (e.g., if they indicated they thought the

experimenter-confederate interaction was staged or if they guessed the hypothesis; N =

3). One additional participant was excluded due to incorrect completion of the operation-

span task. Data from the remaining 59 female participants comprised the working data

set, with 21 in the HS condition, 18 in the BS condition, and 20 in the control condition.

A sensitivity analysis using the same software and parameters described above indicated

that a sample size of 59 would be able to detect an effect size of $f = .42$, which is slightly larger than the expected effect size of $f = .37$, indicating that the study was slightly underpowered. The age of participants ranged from 18 to 22 ($M = 19.41$, $SD = 1.19$). The majority (77.9%) of participants identified as white or Caucasian, followed by Asian (8.5%), Latinx or Hispanic (5.1%), black or African American (3.4%), Middle Eastern, Arab, or Persian (1.7%), and multiple racial groups (3.4%).

The majority of participants were recruited from Missouri S&T's psychology subject pool. Because the research question was not interested in how men react to witnessing sexism, participation was limited to female students. Due to the demographic makeup of the university, the number of women in the subject pool was fairly limited. As such, use of the subject pool was supplemented with paid participants from the general female student population at Missouri S&T. This was accomplished by advertising the study to women's organizations on campus (e.g., Women in Nuclear, Society of Women Engineers, and campus sororities). To reduce suspicion, one slot per session was reserved for a male participant. However, data from male participants was not analyzed.

2.2. PROCEDURE

Multiple participants (2-5) were run through the study simultaneously. A male experimenter brought all participants into a lab space where they were told that they would be taking part in a study looking at how memory is affected by mood and self-evaluation. Participants were told that they would be completing a working memory task, which would test how many items they can hold in their short-term memory at one time. In order to make the task personally relevant and to motivate participants' desire to do

well, participants were told that working memory capacity has been used as a predictor of hiring success and starting salary for job applicants. Participants were also told the general format of the memory task to make them aware that the task would involve both a math portion and a recall portion.

After participants were told the cover story, the experimenter held a short conversation with a female confederate who was posing as a participant in the study. The female confederate, within earshot of the other participants, asked the experimenter if he could come check to make sure she had completed the experiment correctly. The experimenter's response was manipulated to reflect hostile sexism ("I'll come check, but don't expect any special favors or help from me. Just because women tend to have a hard time with the memory portion doesn't mean you can compensate by being manipulative and getting me to give you all of the answers."), benevolent sexism ("Yes, of course I can! I'd be happy to help out a nice young lady like yourself. Women can sometimes have a hard time with the memory portion, so I'd be glad to check to make sure you completed it correctly. What kind of a man would I be if I didn't help out a woman in need? Here, let me get the door for you."), or no sexism ("Of course I can. With this kind of test, people do tend to have a hard time with the memory portion, so I'd be glad to check to make sure you completed it correctly. I'll be right there.") targeted toward the confederate (see *Appendix A* for full transcript).

Following the manipulation, the confederate left the study space and the experimenter set up the participants at computer terminals where they completed an operation-span task to measure WMC. Following this, participants were randomly presented with survey measures of memory self-efficacy, mental intrusion, and negative

affect. Finally, participants completed a survey measure of sexism endorsement and a demographic questionnaire.

2.3. PILOT STUDY

The manipulation script was pilot tested prior to implementation in the current study to ensure that participants would perceive the experimenter's words as indicative of the intended type of sexism. This was accomplished by having female MTurk participants (N = 79) read one of the three scripts (HS, BS, or no sexism) and rate the interaction on how much they perceived the experimenter to be sexist and how much they liked the experimenter.

For perceived sexism, following findings from past research (e.g., Barreto & Ellemers, 2005), it was expected that the HS condition would be perceived to be the most sexist, followed by the BS condition, with the control condition being perceived to be the least sexist (H1). For experimenter favorability, following findings from past research (e.g., Kilianski & Rudman, 1998), it was expected that the control condition would be rated most favorable, followed by the BS condition, with the HS condition being perceived to be the least favorable (H2).

2.3.1. Pilot Measures. Perceived sexism was evaluated by having participants respond to four items on a Likert scale ranging from 1 (*not at all*) to 7 (*very much*): (1) "Do you think that the experimenter made any inappropriate comments?", (2) "Do you think the experimenter discriminated against the participant in any way?", (3) "To what extent do you think the experimenter acted in a sexist manner toward the participant?", and (4) "To what extent do you think the experimenter is prejudiced against women?"

These items were adapted from previous research (Barreto & Ellemers, 2005; Good, 2011) and were presented to participants in a random order. The items were averaged such that higher numbers indicated greater perceived sexism ($\alpha = .97$).

Experimenter favorability was evaluated by having participants respond to four items on a Likert scale ranging from 1 (*not at all/not at all favorable*) to 7 (*very much/very much favorable*): (1) "Overall, what is your impression of the researcher?", (2) "During the interaction, was the experimenter polite and professional?", (3) "Overall, how would you rate the experimenter as a person?", and (4) "How much do you like the experimenter?" These items were adapted from previous research (Good & Rudman, 2010) and were presented to participants in a random order. The items were averaged such that higher numbers indicated greater favorability toward the experimenter ($\alpha = .97$).

2.3.2. Pilot Results. A one-way ANOVA with pairwise comparisons indicated that there were significant differences in perceived sexism among the three conditions ($F(2, 44.09) = 89.35$, $p < .001$, $\eta^2 = .66$). Consistent with H1, participants in the HS condition ($M = 6.42$, $SD = .95$) perceived more sexism than participants in the BS condition ($M = 4.32$, $SD = 1.67$; $p < .001$) and the control condition ($M = 1.74$, $SD = 1.47$; $p < .001$), which also differed ($p < .001$).

Another one-way ANOVA with pairwise comparisons indicated that there were differences in experimenter favorability among the three conditions ($F(2, 45.23) = 81.97$, $p < .001$, $\eta^2 = .65$). Consistent with H2, participants in the control condition ($M = 5.97$, $SD = .82$) rated the experimenter more favorably than participants in the BS condition ($M = 4.20$, $SD = 1.45$; $p < .001$) and the HS condition ($M = 1.84$, $SD = 1.42$; $p < .001$), which also differed ($p < .001$).

Because both hypotheses were supported, it was concluded that participants accurately perceived the scripts as being indicative of the intended type of sexism and as such the scripts were of sufficient quality to be used in the current study.

2.4. MEASURES

The following section details the instruments used to measure working memory capacity, task-specific self-efficacy, mental intrusion, negative affect, and endorsement of sexism. See *Appendix B* for exact wording and instructions.

2.4.1. Working Memory Capacity. To test working memory capacity (WMC), participants completed an operation-span task developed by Turner and Engle (1989) and modified by Schmader and Johns (2003). The task involved mathematical equations that the participant evaluated as either true or false, followed by words that they had to memorize and recall later in the task. Each mathematical equation included either a multiplication or division pair, followed by the addition or subtraction of a positive integer. An answer to the equation was included in the expression and the participant had to evaluate whether the entire expression was true or false (e.g., Is (8 X 4) – 6 = 26?). Following each expression was a word that participants were instructed to memorize for later recall. After completing a certain number of equation/word combinations (i.e., a set), participants were asked to recall as many words as they could remember from the set. Participants responded to 36 equation/word combinations, with 18 equations being true and 18 being false. The test consisted of nine sets, each of which included 3-5 equation/word combinations (three sets of each size). The words used in this task were randomly chosen from a list of one-syllable words used in a similar task by La Pointe and

Engle (1990). This was the same method used by Schmader and Johns (2003), though the

authors did not report the exact words they used, so the current study could not be an

exact replication of the method. Instead, this study randomly chose words from the same

master list. The equations within the sets were randomized, though the same words were

always presented with the same equations. As has been done in previous research (e.g.,

Schmader & Johns, 2003), WMC was operationalized as the absolute span score, which

was calculated by summing the number of words recalled correctly only from sets where

all words in the set were recalled correctly.

   2.4.2. Task-Specific Self-Efficacy. Because this study was measuring self-

efficacy specific to the working memory task, it used a measure of memory self-efficacy,

or participants' confidence in their ability to perform well on a working memory task. To

measure memory self-efficacy, four items were adapted from a measure of math self-

efficacy used by Fast et al. (2010): (1) "I'm sure that I can learn and recall lists of words

accurately", (2) "I'm sure that I can perform well on even the hardest memory tasks", (3)

"Even if a new memory test is hard, I'm sure that I can do well on it", and (4) "I'm sure

that I can perform well on a memory test even when I am distracted". Participants

responded to each item on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly

agree*) and the items were displayed in a random order. Items were averaged such that

higher numbers indicated higher levels of memory self-efficacy ($\alpha = .89$).

   2.4.3. Mental Intrusions of Incompetence. Participants' level of mental

intrusion was measured with six items adapted from previous research on how directly

experiencing BS promotes intrusive thoughts of incompetence (Dumont et al., 2010).

Participants were asked to indicate how often they experienced certain thoughts while

completing the working memory task: (1) "I feel silly", (2) "I feel incompetent", (3) I feel that I'm not performing well", (4) "Others are surely faster than I am", (5) "Others surely perform better than I do", and (6) "I'll never achieve it". Participants responded to each item on a Likert scale ranging from 1 (*never crossed my mind*) to 9 (*came to mind frequently*) and the items were displayed in a random order. Items were averaged such that higher numbers indicated higher levels of mental intrusion ($\alpha = .90$).

     2.4.4. Negative Affect. Participants completed the twenty-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) to measure their level of state affect. While only the negative affect subscale was of interest in this research, the positive affect subscale was included as well to avoid suspicion about the purpose of the study. Participants read a list of positive and negative emotion words (e.g., distressed, nervous, excited, proud) and reported the extent to which they experienced each of the emotions at the time that they were completing the survey (i.e., "Indicate to what extent you feel this way now, that is, at the present moment"). Participants responded to each item on a Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*) and the items were displayed in a random order. Items from the negative affect subscale were averaged such that higher numbers indicated higher levels of negative affect ($\alpha = .78$).

     2.4.5. Endorsement of Sexism. The 22-item Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) was used to measure the extent to which participants personally endorsed sexism. The ASI consists of two subscales: hostile sexism (HS) and benevolent sexism (BS). HS measures the extent to which a person holds openly aggressive beliefs or attitudes toward women (e.g., "Women are too easily offended"; "Women seek to gain

power by getting control over men"). BS measures the extent to which a person holds seemingly innocuous beliefs or attitudes that are meant to uphold female stereotypes, such as those of being docile, nurturing, or needing protection (e.g., "Women should be cherished and protected by men"; "A good woman should be put on a pedestal by her man"). Participants responded to each item on a Likert scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*) and the items were displayed in a random order. Items from each subscale were averaged such that higher numbers indicated higher levels of endorsement of HS ($\alpha = .82$) and BS ($\alpha = .78$).

3. RESULTS

3.1. H1-4: MAIN EFFECTS OF SEXISM CONDITION

All continuous variables were mean-centered prior to analyses. Recall that I predicted that women in the BS condition would demonstrate lower working memory capacity, lower memory self-efficacy, and higher mental intrusion than women in the HS or control conditions. Additionally, I predicted that women in the HS condition would demonstrate higher negative affect than women in the BS condition, who would demonstrate higher negative affect than women in the control condition. To test these hypotheses, the four outcome variables (working memory capacity, memory self-efficacy, mental intrusion, and negative affect) were submitted to separate one-way ANOVAs with sexism condition as the between-participant factor. No significant effects were found for any of the outcomes: working memory capacity ($F(2,56) = .12$, $p = .969$), memory self-efficacy ($F(2,56) = .008$, $p = .793$), mental intrusion ($F(2,56) = .67$, $p = .395$), and negative affect ($F(2,56) = .24$, $p = .868$). As such, H1-4 were not supported. See Table 3.1 for descriptive statistics and Table 3.2 for 95% confidence intervals.

Table 3.1. Descriptive statistics for dependent variables by sexism condition.

	WMC		Memory self-efficacy		Mental intrusion		Negative affect	
Condition	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
HS	26.45	10.5	3.15	.39	4.18	2.51	1.74	.50
BS	25.74	7.75	3.07	.37	4.47	1.77	1.82	.63
Control	26.30	9.59	3.09	.35	3.62	1.52	1.84	.64

Table 3.2. 95% confidence intervals for H1-4 pairwise comparisons.

Comparison	WMC	Memory self-efficacy	Mental intrusion	Negative affect
HS-BS	[-5.30, 6.73]	[-.16, .31]	[-1.56, .98]	[-.46, .31]
BS-Control	[-5.45, 6.58]	[-.22, .25]	[-2.13, .42]	[-.36, .40]
HS-Control	[-5.86, 6.17]	[-.17, .29]	[-.71, 1.83]	[-.40, .38]

3.2. H5: MODERATION OF BS ENDORSEMENT

Recall that I predicted that BS endorsement would moderate the relationship between sexism condition and outcomes such that the relationship would be stronger for women who are high vs low in BS endorsement. That is, for women high in BS endorsement, those in the BS condition would experience a) lower working memory capacity, b) lower memory self-efficacy, and c) higher mental intrusion than those in the HS or control conditions more so than for women low in BS endorsement. To test these predictions, each outcome variable (WMC, memory self-efficacy, and mental intrusion) was regressed on sexism condition (dummy coded with BS condition as the reference group), BS endorsement, and the interaction between the two. As shown in Table 3.3, no significant main effects or interactions emerged. Thus, H5A-C were not supported.

Additionally, I predicted that for women high in BS endorsement, those in the BS condition would experience higher negative affect than those in the control more so than for women low in BS endorsement. To test this hypothesis, negative affect was regressed on sexism condition (dummy coded with BS as the reference group), BS endorsement, and the interaction between the two. The analysis revealed that, though the overall model

Table 3.3. Summary of regression analyses predicting working memory capacity, memory self-efficacy, and mental intrusion.

Dependent variable	B	$SE\ B$	β	p	R^2
WMC				.711	.05
Condition BS-Control	1.36	3.18	.07	.670	
Condition BS-HS	.32	3.09	.02	.917	
BS endorsement	-1.54	2.44	-.12	.531	
BS-Con X BS endorsement	.008	3.82	.0004	.998	
BS-HS X BS endorsement	-5.22	5.18	-.16	.318	
Memory self-efficacy				.205	.12
Condition BS-Control	.08	.12	.11	.508	
Condition BS-HS	.06	.11	.07	.638	
BS endorsement	-.08	.09	-.17	.371	
BS-Con X BS endorsement	-.07	.15	-.08	.645	
BS-HS X BS endorsement	-.28	.20	-.21	.162	
Mental intrusion				.280	.11
Condition BS-Control	-.46	.66	-.11	.491	
Condition BS-HS	-.26	.64	-.06	.681	
BS endorsement	.01	.51	.005	.978	
BS-Con X BS endorsement	-1.31	.80	-.29	.106	
BS-HS X BS endorsement	.24	1.08	.03	.828	

was not significant ($F(5,53) = 1.68$, $R^2 = .14$, $p = .236$), there was a main effect of BS endorsement on negative affect ($\beta = .47$, $p = .017$), which was qualified by the predicted interaction between sexism condition (BS vs control) and BS endorsement ($\beta = -.21$, $p = .035$). Simple slope analyses for the BS and control conditions indicated that stronger BS endorsement predicted greater negative affect for women who witnessed BS, $b = .37$, $t(38) = 2.34$, $p = .025$, 95% CI [.07, .67], but not for women in the control condition, $b = -.14$, $t(38) = -.74$, $p = .466$, 95% CI [-.57, .29] (see Figure 3.1). However, simple slope analyses conducted at one standard deviation above and below the mean for BS endorsement (Aiken & West, 1991) revealed that sexism condition did not predict negative affect among women who strongly endorse BS, $b = -.48$, $t(38) = -.10$, $p = .325$, 95% CI [-.66, 1.67], nor among women who reject BS, $b = .38$, $t(38) = 1.02$, $p = .315$, 95% CI [-.13, 2.18]. Furthermore, as predicted, there were no differences between the BS and HS conditions, regardless of BS endorsement, no main effect of condition on negative affect ($p_{(BS\text{-}Control)} = .931$, $p_{(BS\text{-}HS)} = .397$), and no interaction between BS endorsement and condition when comparing the HS and BS conditions ($p = .172$). As such, H5D was supported.

3.3. H6: MEDIATION

Recall that I predicted that the relationship between sexism condition and working memory capacity would be mediated by a) memory self-efficacy, b) mental intrusion, and c) negative affect. However, as the c and a paths of the mediation model were not significant (no main effects; see H1-4), no mediation analysis was conducted.
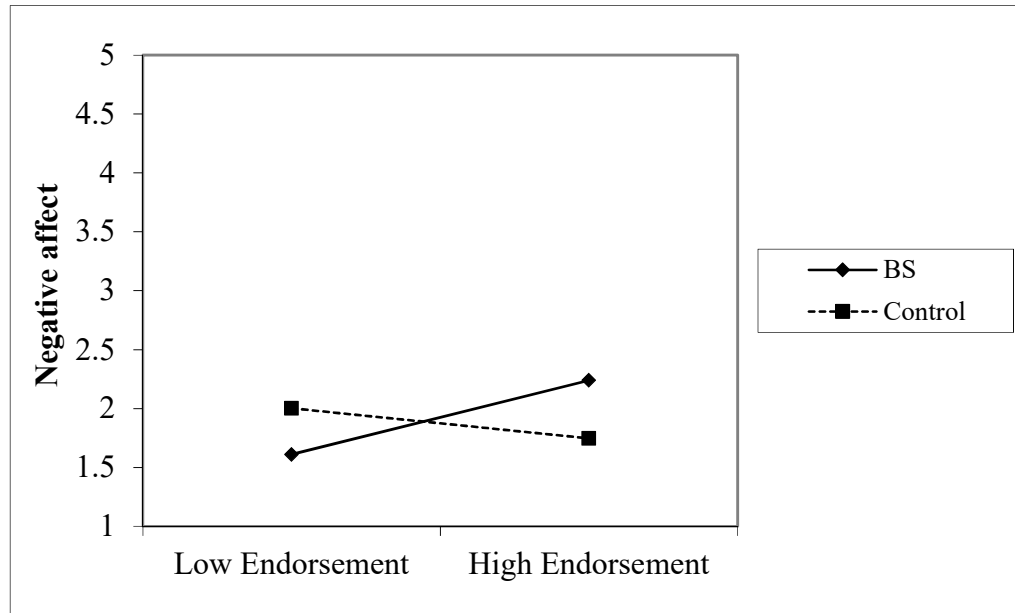
Figure 3.1. Sexism condition (BS vs control) and BS endorsement predicting negative affect.

3.4. H7: MODERATED MEDIATION

Recall that I predicted that the mediated effects (H6) would be stronger among women who are high vs low in BS endorsement. However, as H5 and H6 were not fully supported, no moderated mediation analysis was conducted.

4. DISCUSSION

The purpose of this research was to examine how women are affected by being a bystander to benevolent sexism without being the direct target of the sexism. In particular, the study examined how witnessing hostile sexism, benevolent sexism, or no sexism impacted women's working memory capacity, task-specific self-efficacy, mental intrusions of incompetence, and negative affect. Contrary to predictions, no direct associations were found between sexism condition and any of the dependent variables. This lack of findings could be attributed to a number of occurrences. For instance, it is possible that the manipulation (i.e., the sexist interaction between experimenter and confederate) was too overt and caused participants to become suspicious, thus causing them to react unnaturally to the situation. While only three participants explicitly expressed suspicion, it is possible that more participants felt suspicious and simply did not report it. Additionally, it has been previously documented that women can experience harmful effects from witnessing hostile sexism (e.g., Glomb et al., 1997), and it was hypothesized that women would experience similar negative effects from witnessing benevolent sexism as well. This study found no effects for ambient hostile sexism, even though there has been previous research support for these effects, which may prompt further examination into the utility of the manipulation used. It should be noted that in most previous experimental studies on the effects of ambient sexism, participants were presented with the manipulation in an indirect form, usually through reading a transcript of a sexist conversation (e.g., Calogero & Jost, 2011; Bradley-Geist et al., 2015), while the current study used a more direct and realistic method of having participants

personally witness the interaction occurring. In a previous study, Cunningham et al. (2012) found that participants who read about misogyny (i.e., hostile sexism) reported higher emotional distress than those who witnessed misogyny in person, reasoning that this may be because when reading about a situation, people tend to overestimate how emotionally they will react if the situation occurs in real life. This may in some way explain the discrepancy between the current study and past research on the negative effects of witnessing sexism. It is also possible that the hypotheses were wrong and that witnessing BS does not result in similar effects as directly experiencing BS, or that witnessing BS results in different kinds of outcomes than the ones measured in this study. However, the study was slightly underpowered due to difficulty of recruiting an adequate sample size, so further research is needed before concluding that the hypotheses are incorrect.

This study also examined whether the relationships between sexism condition and the dependent variables were moderated by the extent to which women personally endorse or support benevolent sexism. While no interaction was found between sexism condition and BS endorsement for most of the dependent variables, a significant interaction was found with negative affect where participants who strongly endorsed benevolent sexism reported higher negative affect when they witnessed benevolent sexism compared to a control condition. Broadly, this suggests that the extent to which women personally endorse BS can influence how being a bystander to sexism impacts their emotional state. This suggests, as predicted, that BS endorsement may in some way cause women to become more vulnerable to the negative outcomes of witnessing sexism in the workplace.

In this vein, implementing interventions to help lessen women's endorsement of benevolent sexism, for instance by raising women's awareness of the specific nature and consequences of benevolent sexism particularly in workplace settings, may help reduce the negative emotional effects that may occur from witnessing acts of benevolent sexism in the workplace. Other methods that may help mitigate these negative effects could be to integrate existing workplace sexual harassment and bystander intervention training programs with components intended to raise awareness and recognition of benevolent sexism, and to train supervisors specifically in how to recognize and address issues of benevolent sexism among their subordinates and throughout the organization. Most organizational training programs involve training organizational members to recognize aspects of hostile sexism, particularly sexual harassment, as well as training members how and when to step in when they see such behavior occurring in the workplace. Based on the results of this study, it may be important for organizations to expand these programs to include training members to recognize and react to aspects of benevolent sexism as well.

4.1. LIMITATIONS

One limitation to the current study is that participants had no connection or prior relationship with the sexist perpetrator or victim, which may not accurately reflect real world situations where sexism is likely to occur. Participants may not have felt the effects of sexism as strongly because the interaction involved strangers as opposed to the sexism coming from or being targeted toward people with whom they have established relationships, as would likely be the case if this type of situation were to play out in the

workplace. In addition, the study exposed participants to a short-lived occurrence of sexism that would have little to no long-term impact on them once they left the study, which is in contrast to sexism in the workplace, which tends to be more chronic and have longer-term consequences and implications with which women must contend. Another limitation is that the results may not generalize to actual job performance. Job performance is notoriously difficult to operationalize and measure (DeNisi & Sonesh, 2011). The current work used WMC as a proxy for job performance and, although cognitive performance does tend to predict job performance (e.g., Hunter, 1986; Schmidt, 2002), WMC as a subunit of cognitive performance may not have this same relationship with job performance. Additionally, undergraduate participants may have different reactions to the sexism manipulations due to historical context, such as the younger generation's exposure to or involvement in the #MeToo movement. That is, younger generations may be more aware of sexism than the general population, which may make them less vulnerable to the effects of witnessing sexism. In another limitation, because the pilot test only examined participants' interpretations of the verbal script between experimenter and confederate, it is possible that other aspects of the manipulation, like body language, were differentially interpreted by participants. Finally, all results should be interpreted with caution due to the small sample size. I was only able to collect and analyze data from 59 participants, which is below the estimated sample size of 74 that was indicated by the a priori power analysis, meaning that some results may have been undetectable due to low statistical power.

4.2. FUTURE AREAS FOR RESEARCH

Though most predictions were unsupported, the study did bring up new questions that should be addressed in future research. For example, it is possible that bystander reactions to sexism in the workplace may depend on the witness's personal connection, if any, to the victim or perpetrator. That is, an individual may experience more negative effects if they witness sexism targeted toward or perpetrated from a person whom they know well or are friends with. Additionally, further research should directly compare the magnitude of effects of witnessing vs. experiencing benevolent sexism, as has been done with hostile sexism (Cunningham et al., 2012). It is probable that witnessing BS causes less extreme reactions than does directly experiencing BS, but the fact that it is more widespread and creates a larger victim pool may cause it to be of just as much, or of greater, concern. Another area of research could expand into alternate measures of cognitive and job performance to test whether witnessing sexism has different effects on different types of performance. Finally, future research should focus on conducting field studies to determine how ambient BS plays out in an actual workplace setting as opposed to a laboratory.

5. CONCLUSION

In sum, this research serves to emphasize that witnessing acts of benevolent sexism, when coupled with a strong personal endorsement of benevolent sexism, can have negative impacts on women, particularly on their mood or emotional state. Many organizations have programs or interventions in place to decrease the prevalence of workplace sexism and gender discrimination, though these programs are mostly intended to stop hostile sexism, such as sexual harassment. Until similar interventions to reduce the occurrence of benevolent sexism become more widespread, it may be pertinent for women to instead focus on ways in which they can protect themselves from the direct and indirect effects that benevolent sexism can have on them, potentially by becoming better able to recognize benevolent sexism and to reduce their endorsement of patronizing benevolent behaviors. Overall, this study suggests that reducing women's endorsement of benevolent sexism may in some way help shield them from or help them cope with some of the negative effects of witnessing benevolent sexism in the workplace.

APPENDIX A.

EXPERIMENTER-CONFEDERATE MANIPULATION SCRIPT

Experimenter: Have you finished up with the study?

Confederate: I think I'm done, but can you come check on it for me?

Experimenter: **[insert manipulation]**

Hostile sexism manipulation

I'll come check, but don't expect any special favors or help from me. Just because women tend to have a hard time with the memory portion doesn't mean you can compensate by being manipulative and getting me to give you all the answers.

Benevolent sexism manipulation

Yes, of course I can! I know the memory bit might have been a bit difficult for you, so I'd be glad to check to make sure you completed it correctly. I am a gentleman, after all, and what kind of gentleman would I be if I didn't help out a woman in need? Here, let me get the door for you.

No sexism (control) manipulation

Of course I can. With this kind of test, people do tend to have a hard time with the memory portion, so I'd be glad to check to make sure you completed it correctly. I'll be right there.

APPENDIX B.

DEPENDENT MEASURES

Working memory capacity: Operation-span task (Turner & Engle, 1989; Schmader & Johns, 2003)

(C = correct expression, I = incorrect expression)

Set 1

(12 X 5) + 7 = 64 *(I)* Dust

(5 X 9) + 5 = 50 *(C)* Pair

(6 X 8) + 9 = 57 *(C)* Roll

Set 2

(32 / 16) + 10 = 11 *(I)* Skill

(81 / 9) + 8 = 17 *(C)* Forth

(7 X 7) – 8 = 41 *(C)* Tree

Set 3

(6 X 8) + 5 = 60 *(I)* Stay

(72 / 8) + 10 = 19 *(C)* Knife

(6 X 7) – 8 = 34 *(C)* Dream

Set 4

(50 / 5) – 8 = 2 *(C)* Trade

(54 / 6) + 11 = 19 *(C)* Score

(56 / 6) – 5 = 4 *(C)* Bird

(5 X 5) + 14 = 39 *(C)* Moon

Set 5

(75 / 5) – 7 = 8 *(C)* Fact

(5 X 5) – 7 = 17 *(I)* Talk

(80 / 10) – 5 = 3 *(C)* Cause

(100 / 5) – 12 = 8 *(C)* Fight

Set 6 (10 X 6) – 8 = 53 *(I)* Gas

(6 X 9) + 5 = 60 *(I)* Near

(80 / 8) – 6 = 3 *(I)* Out

(72 / 8) – 6 = 2 *(I)* File

Set 7

(100 / 5) – 9 = 12 *(I)* Town

(8 X 6) – 9 = 44 *(I)* Buy

(64 / 8) + 12 = 20 *(C)* Back

(72 / 12) + 8 = 15 *(I)* League

(7 X 7) + 5 = 53 *(I)* Own

Set 8

(7 X 5) – 6 = 30 *(I)* Green

(121 / 11) + 9 = 21 *(I)* Jump

(6 X 6) + 7 = 43 *(C)* Add

(10 X 5) – 6 = 44 *(C)* Buy

(18 / 6) + 15 = 19 *(I)* Rain

Set 9

(7 X 10) – 6 = 65 *(I)* Near

(81 / 9) + 7 = 15 *(I)* Guest

(75 / 5) – 12 = 4 *(I)* Wire

(8 X 5) + 12 = 52 *(C)* Hall

(11 X 6) – 14 = 52 *(C)* Key

Memory self-efficacy: Modified items from math self-efficacy scale (Schmader, Johns, & Barquissau, 2004)

Please answer the following questions as they are true for you.

(1 = strongly disagree, 5 = strongly agree, *reverse coded)

1. I sometimes doubt my ability to perform well on memory tasks.*

2. I am good at memory tasks compared to other people.

3. Memory tasks have always been pretty easy for me.

4. Doing memory tasks has never been easy for me.*

5. I feel like I have to work harder than other people at memory tasks to do well.*

Mental intrusions of incompetence: Modified items from intrusive thoughts scale
(Dumont, Sarlet, & Dardenne, 2010)
Please rate how often you experienced the following thoughts during the working
memory task.
(1 = never crossed my mind, 9 = came to mind frequently)
1.   I feel silly.
2.   I feel incompetent.
3.   I feel that I'm not performing well.
4.   Others are surely faster than I am.
5.   Others surely perform better than I do.
6.   I'll never achieve it.

Negative affect: Positive and Negative Affect Schedule (Watson, Clark, & Tellegen,
1988)
This scale consists of a number of words that describe different feelings and emotions.
Please indicate to what extent you feel this way right now, that is, at the present moment.
(1 = very slightly or not at all, 5 = extremely)
(P = positive affect, N = negative affect)

1.	Interested (P)	11.	Irritable (N)
2.	Distressed (N)	12.	Alert (P)
3.	Excited (P)	13.	Ashamed (N)
4.	Upset (N)	14.	Inspired (P)
5.	Strong (P)	15.	Nervous (N)
6.	Guilty (N)	16.	Determined (P)
7.	Scared (N)	17.	Attentive (P)
8.	Hostile (N)	18.	Jittery (N)
9.	Enthusiastic (P)	19.	Active (P)
10.	Proud (P)	20.	Afraid (N)

Endorsement of sexism: Ambivalent Sexism Inventory (Glick & Fiske, 1996)

Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement.

(0 = disagree strongly, 5 = agree strongly, *reverse coded)

(H = hostile sexism, B = benevolent sexism)

1. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman (B)
2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality." (H)
3. In a disaster, women ought not necessarily to be rescued before men. (B)*
4. Most women interpret innocent remarks or acts as being sexist. (H)
5. Women are too easily offended. (H)
6. People are often truly happy in life without being romantically involved with a member of the other sex. (B)*
7. Feminists are not seeking for women to have more power than men. (H)*
8. Many women have a quality of purity that few men possess. (B)
9. Women should be cherished and protected by men. (B)
10. Most women fail to appreciate fully all that men do for them. (H)
11. Women seek to gain power by getting control over men. (H)
12. Every man ought to have a woman whom he adores. (B)
13. Men are complete without women. (B)*
14. Women exaggerate problems they have at work. (H)
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash (H)
16. When women lose to men in a fair competition, they typically complain about being discriminated against. (H)
17. A good woman should be set on a pedestal by her man. (B)
18. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances. (H)*
19. Women, compared to me, tend to have a superior moral sensibility. (B)
20. Men should be willing to sacrifice their own well-being in order to provide financially for the women in their lives. (B)
21. Feminists are making entirely reasonable demands of men. (H)*
22. Women, as compared to men, tend to have a more refined sense of culture and good taste. (B)

Suspicion checks/exit survey (open-ended)
1.   Were all of the instructions clear and easy to follow? Please explain.
2.   Do you have any suggestions for improving the study? Please explain.
3.   Do you have any guesses as to what the hypothesis might be?
4.   Do you have any other comments regarding this study?

Pilot test: Perceived sexism (Barreto & Ellemers, 2004; Good, 2011)
(1 = not at all, 7 = very much)
1.   Do you think that the experimenter made any inappropriate comments?
2.   Do you think that the experimenter discriminated against the participant in any
        way?
3.   To what extent to you think that the experimenter acted in a sexist manner toward
        the participant?
4.   To what extent do you think that the experimenter is prejudiced against women?

Pilot test: Researcher favorability (Good & Rudman, 2010)
(1 = not at all/not at all favorable, 7 = very much/very much favorable)
1.   Overall, what is your impression of the experimenter?
2.   During the interaction, was the experimenter polite and professional?
3.   Overall, how would you rate the experimenter as a person?
4.   How much do you like the experimenter?

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