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**EXAMINING WOMEN'S PSYCHOPHYSIOLOGICAL RESPONSES UNDER
INCREASINGLY OBVIOUS SEXISM**

By

Shelby Helwig

B.S. Lock Haven University of Pennsylvania, 2017

A THESIS

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

(in Psychology)

The Graduate School

The University of Maine

May 2022

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EXAMINING WOMEN'S PSYCHOPHYSIOLOGICAL RESPONSES UNDER INCREASINGLY OBVIOUS SEXISM

By Shelby Helwig

Thesis Advisor: Dr. Shannon McCoy

An Abstract of the Thesis Presented
In Partial Fulfillment of the Requirements for the
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When women experience sexism, it may at first be subtle and difficult to label only becoming clearer over time. Sexism is often ambiguous in nature and experienced over an extended period; therefore, studying sexism as it occurs in daily life is crucial to extending our understanding of how women cope with discrimination. Past research has shown that women may experience maladaptive physiological responses when exposed to various forms of sexism. The current study investigated women's cardiovascular reactivity and recovery responses to prolonged, increasingly obvious sexism. Women evaluated resumes in a mock search committee meeting with two male confederates whose statements about the female candidate increased in the clarity of sexism throughout the discussion period. Heart Rate (HR) and Respiratory Sinus Arrhythmia (RSA) reactivity, recovery, self-reported anger and anxiety, group identification, and perceived sexism were measured in the study.

Results demonstrated that women's physiological reactivity changed throughout

the discussion period in response to the increasingly clarity of sexism. When exposed to sexism, women's heart rate reactivity systematically increased and respiratory sinus arrhythmia reactivity systematically decreased (RSA suppression) as sexism increased from not expressed, to ambiguous, to clear. In contrast, women in the comparison condition (i.e., not exposed to the sexist committee members) did not display increasing physiological reactivity as the clarity of sexism increased. These patterns of physiological reactivity and their correlations with anger, anxiety, gender identification, and perceived sexism are discussed and provide insight into potential motivational and emotional states of participants throughout the study. Results supported the approach of examining physiological reactivity over time and provided strong justification for further investigation into other cardiovascular markers (e.g., cardiac output, total peripheral resistance).

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EXAMINING WOMEN'S PSYCHOPHYSIOLOGICAL RESPONSES UNDER INCREASINGLY OBVIOUS SEXISM

Imagine you are a woman participating in a search committee meeting with a male colleague. As the meeting begins you start to feel less included in the discussion, then you pick up on some comments regarding a female applicant that might be sexist. As the meeting unfolds, the sexism finally becomes clear. How do your motivational and emotional states change over the course of the meeting? Do you think your responses would be different depending on your identification with your gender? The current study examined change in women's physiological responses to sexism that increased in clarity over time in a mock search committee meeting.

Consequences of Sexism May Depend on Clarity

Prior research has focused on the consequences of ambiguous or clear sexism for a woman's psychological wellbeing and health. When women face an isolated instance of ambiguous sexism, it creates uncertainty about whether the event occurred out of prejudice or out of one's personal fault (Major et al., 2003). Attributional ambiguity, the uncertainty of whether a negative event can be attributed to the self or to discrimination, can be highly stressful (Mendes et al., 2008). When the role of sexism in a specific, negative outcome is clear, women may be buffered to the potential negative psychological effects because they can blame a negative outcome on the other person's sexism (Major et al., 2003). The ability to say "it's not my fault" may lead women to respond with approach motivation (e.g., seek to thrive) and feel better post the discriminatory event compared to when sexism is less clear. When sexism is

ambiguous, the cause of the negative outcome is seemingly questionable and may lead women unsure as to whether the negative outcome occurred because of potential discrimination or one's own personal fault. Questioning "is this my fault?" may lead women to respond with avoidance motivation (e.g., seek to survive) and feeling worse after the negative outcome compared to when sexism is clearer. The uncertainty associated with perceiving ambiguous sexism is related to emotions such as sadness and anxiety while women exposed to clear sexism experience more anger-related emotion (McCoy & Major, 2003). Attributing negative events as being due to sexism is beneficial for women's wellbeing in response to a specific, negative instance, specifically. In contrast, perceiving pervasive, unescapable sexism across multiple contexts of life is unlikely to be protective of wellbeing (Major et al., 2002). The current study examines women's motivational responses to specific instances of sexism, rather than pervasive perceptions of sexism.

Indexing Motivational States with Psychophysiology

Drawing on the biopsychosocial model of challenge and threat, approach and avoidance motivation in response to acute stress can be distinguished via relative changes from baseline in physiological activity (e.g., cardiac output, total peripheral resistance; Blascovich, 2013). When appraising a stressful event, people process information about whether their personal resources to cope with the event meet the demands of the situation. Whether perceived resources either meet or do not meet the demands of the environment can influence physiological responses (i.e., challenge versus threat reactivity). Perceiving resources as meeting or exceeding the demands of the situation is associated with challenge appraisal (Blascovich et al., 1999). Challenge

appraisal leads to physiological responses similar to those found during aerobic exercise with an increase in cardiac output (i.e., cardiac performance; index of volume of blood ejected by the heart) and decreases in total peripheral resistance (i.e., index of vasoconstriction of the periphery) resulting in no change in blood pressure. On the other hand, threat responses occur when the perceived situational demands of a stressor exceed personal resources to cope. Threat appraisal demonstrates enhanced cardiac reactivity; however, there is not a decrease in total peripheral resistance. In fact, threat responses typically see no change or a slight increase in total peripheral resistance, leading to an increase in blood pressure (Blascovich et al., 1999). These states occur on a continuum from greater threat reactivity, associated with avoidance motivation, to greater challenge reactivity, associated with approach motivation.

Less traditionally used as a marker of motivational state, respiratory sinus arrhythmia (RSA), also known as high frequency heart rate variability (HF/HRV), is documented as a parasympathetic marker of cardiac control. The parasympathetic nervous system (PNS) performs the functions of rest, repair, and relaxation of the body within the autonomic nervous system to maintain homeostasis (Andreassi, 2007). Specifically, RSA is a measure of respiratory gating of autonomic control, indexing vagal cardiac control of the heart. RSA can fluctuate in response to environmental stimuli and may have implications for coping responses to acute stress (Berntson; Mendes, 2016).

Studies have demonstrated that a decrease in RSA reactivity from baseline during a task indexes increased attention and mental effort (Tattersall & Hockey, 1995). Under stress, patterns of RSA reactivity may correspond with adaptive responses to a stressor. Under higher levels of stress, RSA suppression, or decreases in RSA relative

to baseline, is more commonly observed and may reflect potential to cope with the stressor and face the threats or challenges presented. Under lower levels of stress, RSA augmentation, or increases or maintained levels of RSA relative to baseline is observed and may reflect regulation of homeostasis within the body and social engagement processes (Porges, 2007). Further, researchers have demonstrated that changes in RSA may provide insight into a person's emotional, cognitive, and motivational states during a stressor.

RSA reactivity during a stressor relative to baseline may provide insight into whether someone is in approach or avoidance motivational states. Specifically, RSA suppression during a stressor is associated with characteristics of avoidance motivation, such as increases in negative emotions like anxiety (Mendes, 2016; Mendes & Park, 2014). Gramzow and colleagues (2008) found participants with greater RSA suppression during a stressful interview were rated as more anxious by behavioral coders. Though patterns of RSA reactivity associated with approach motivation have not been as clearly identified, greater RSA augmentation has been linked with positive emotions, such as compassion, during positive mood inductions (Mendes, 2016). Distinguishing between approach and avoidance motivation through patterns of RSA reactivity may prove itself to be a challenging task as the correlates of specific patterns of reactivity may differ depending on situational context. Muhtadie and colleagues (2015) found when provided with negative feedback, greater RSA suppression was associated with increased shame, increased blood pressure, and decreased sociable behavior. When provided with positive feedback, the pattern of physiological reactivity was the same, RSA suppression; however, this response was associated with greater

sociable behavior toward the reviewer. Croizet and colleagues (2004) also found similar patterns of RSA reactivity correlated with different emotional and behavioral responses. They studied members of a stigmatized group (i.e., psychology majors relative to science majors) under stereotype threat conditions (i.e., completing a test that measures mathematical and logical reasoning). Both psychology majors in the stereotype threat and the non-stereotype threat condition demonstrated RSA suppression, though participants in the stereotype threat condition demonstrated *greater* RSA suppression relative to the non-stereotype threat condition.

Considering the results of these two studies, in the current study, we may observe that both women who perceive ambiguous and clear sexism will demonstrate similar patterns of RSA reactivity; however, the response may facilitate different self-reported emotional and behavioral responses. Specifically, I expected perceiving either ambiguous or clear sexism would predict RSA suppression. However, I expected RSA suppression under each context would correlate differently with self-reported emotion.

Does Gender Identification Influence Perceptions and Consequences of Sexism?

Gender identification, or the degree to which a woman identifies with being a woman, can influence her appraisal of discriminatory events. For a woman highly identified with her gender, sexism directed at women feels personal and may lead her to be vigilant for signs of sexism (McCoy & Major, 2003). Women higher in gender identification are more likely to label a negative event as due to sexism than women lower in gender identification when cues to bias are ambiguous (Major et al., 2003). Thus, women higher in gender identification may require less evidence to label subtle or ambiguous sexism as sexist. Researchers have also found that gender identification

can influence cardiovascular reactivity and recovery (McCoy et al., 2003; Eliezer et al., 2010). Eliezer and colleagues (2010) found that, after reflecting on *pervasive* sexism, women higher gender identification had increased cardiovascular reactivity prolonged into recovery, resulting in slower cardiovascular recovery for highly identified group members. Though different patterns of cardiovascular reactivity were expected in the current study examining responses to a *specific instance* of sexism, Eliezer and colleague's (2010) findings demonstrate gender identification can influence perceived sexism's effect on women's cardiovascular reactivity. In the current study, I expected women of higher gender identification would be more likely to perceive clear sexism; and, therefore, demonstrate higher HR and less RSA suppression during the sexist event relative to women who perceived more ambiguous sexism.

Hypotheses

In the current study, women participated in a mock search committee meeting in which the verbal behavior became increasingly sexist over time (i.e., sexism condition) or there was no sexist verbal behavior expressed (i.e., comparison condition). Importantly, this paradigm allowed for continuous measurement of women's physiological responses as the clarity of sexism changed over time.

Heart Rate

I predict women in both conditions will display an increase in HR relative to baseline through the entire discussion period. For women in the sexism condition, I expect HR will increase through each round of discussion, particularly in the third round. For women in the comparison condition, I predict HR will maintain or decrease through each round while still maintaining levels of engagement. These patterns of HR reactivity

would be consistent with expected patterns according to the model of challenge and threat.

I predict increased reports of perceived sexism will be related to increases in HR reactivity in both the sexism and comparison condition. I also expect increases in HR to be related to self-reported emotion after the discussion. Greater anger should be more strongly related to increases in HR for women in the sexism condition rather than the comparison condition. Greater reported anxiety should be more strongly related to increases in HR for women in the comparison condition rather than the sexism condition. Additionally, I predict increased perceptions of perceived sexism will be correlated with increases in self-reported anger and decreases in anxiety for women in the sexism condition. For women in the comparison condition, I expect greater perceptions of sexism to be correlated with increases in reported anxiety.

Respiratory Sinus Arrhythmia

I predict women in the sexism condition will show lower RSA suppression as the committee discussion progresses than women in the comparison condition. In other words, I expect RSA suppression, in general, for both conditions, but as the clarity of sexism increases in the sexism condition, RSA suppression should decrease relative to earlier in the experiment (i.e., when sexism was ambiguous). I also expect greater RSA suppression to be correlated with self-reported anxiety.

Gender Identification, Heart Rate, and Respiratory Sinus Arrhythmia

I predict women higher in gender identification will self-report higher anger and lower anxiety than women lower in gender identification. For women in the sexism condition, I predict those higher in gender identification will demonstrate higher HR and

lower RSA suppression in rounds 2 and 3 of discussion as the clarity of sexism increases relative to women lower in gender identification. For women in the comparison condition, I do not expect gender identification to influence women's physiological responses. Women higher in gender identification in this condition may perceive the other committee members' comments as ambiguous sexism compared to women lower in gender identification. However, given I hypothesize perceiving ambiguous sexism results in more avoidance-like physiological responses, I do not expect this difference in appraisal to influence the expected patterns for HR and RSA reactivity.

Method

Participants

Participants included 125 undergraduates from the University of Maine. Participants were recruited through course participation and offered course credit in a general psychology course. The sample was restricted to women enrolled in the General Psychology course in order to recruit younger students in their first year at the University. These restrictions were implemented in order to reduce suspicion in the experimental paradigm as psychology studies are more novel to younger students. In addition, 18 participants were removed from the sample ($N = 107$) (see exclusion criteria section for more information) and are not included in the following demographic information. Due to missing data in a prescreening, the demographic information is represented with a portion of the sample ($N = 94$). The sample consisted of women between the ages of 17-23 ($M = 18.65$, $SD = .93$) with most women in their first year at the University (75.79%). The sample was 87.37% White, 7.37% Hispanic, 4.21% Native

American, 4.21% Asian, 3.16% Black, 1.05% other. On average, students perceived themselves of average socioeconomic status ($M = 5.67$, $SD = 1.60$) on a scale from one to ten.

Procedure

Before arriving in the lab, participants completed a battery of questionnaires from the University of Maine prescreening survey including demographic questions and measures of gender identification and socioeconomic status.

Gender Identification

Participants completed a 6-item subscale of the Collective Self-Esteem Scale (Luhaten & Crocker, 1992; e.g., “Being a woman is an important reflection of who I am”, “Being a woman has very little to do with how I feel about myself; reverse-scored”, $\alpha = .73$). Items were scored on a 0 (strongly disagree) to 6 (strongly agree) scale in which higher numbers indicate higher group identification.

Subjective Socioeconomic Status

Using the MacArthur Scale of Subjective Socioeconomic Status, participants indicated on a 10-rung ladder (one to ten scale) where they believe they stand relative to others in the United States in their personal social and economic status. The highest rung of the ladder (a score of 10) represented individuals who are the “best off” (i.e., having the most money, education, and respected jobs) and the lowest rung of the ladder (a score of one) represented those with who are the “worst off” (i.e., having the least money, education, and respected jobs; Adler, Epel, Castellazzo, & Ickovics, 2000).

Experimental Session

After providing informed consent, participants were connected to sensors to monitor electrocardiogram (ECG), impedance cardiogram (ICG), and blood pressure reactivity and recovery. All physiological variables were recorded using BioPac hardware with AcqKnowledge acquisition software at a sampling rate of 1000 Hz. Physiological responses were recorded throughout a 5-minute baseline, a 10-minute preparation period, the 19-minute experimental manipulation, and into a 15-minute recovery period (5-minutes “pure recovery” and 10-minutes while completing post manipulation measures). In addition to physiological responses, the 19-minute discussion was audio and video recorded for behavioral analysis.

Following a 5-minute baseline measurement, participants received instructions about the study including information about the intention of the experiment and procedures for the search committee discussion. In these instructions, participants were told the study was about decision making in groups and that they would participate in an audio-only discussion about 2 job candidates with two other participants in the lab (in actuality, the participants were pre-recorded confederates). Participants were told the overall goal of the experiment was to help identify the most qualified candidate for a lab manager position. In all portions of the study in which the experimenter engaged with the participant, the experimenter also knocked on nearby rooms, entered the room, shut the door, and waited varying time periods in an effort to decrease suspicion regarding the confederates.

Following instructions, participants completed a 10-minute preparation period for the search committee meeting in which they read a job description and necessary

qualifications for a fake research manager position and reviewed two “random” resumes for the committee to evaluate. Resumes included a male and female candidate (Robert and Rebecca, respectively) with the female candidate as clearly more qualified for the job than the male candidate. This is important as the experiment required the participant’s opinion to be held as the minority opinion (only participant who chose Rebecca). Resumes were piloted among a college student sample with demographics similar to University of Maine (Lock Haven University of Pennsylvania - 84% Caucasian) to ensure women viewed the female candidate as more qualified.

During the preparation period, participants rated each candidate’s qualifications and selected an initial recommendation for the lab manager position (see Appendix A). After confirmation that the participant chose Rebecca, the discussion period commenced.

At the start of discussion, the “head of the committee” facilitated introductions among the three committee members and briefly reviewed the discussion protocol. Importantly, this is the first time the participant was aware of the gender of the other committee members. The deliberations consisted of three 90-second rounds separated by 90-second rest periods between the rounds totaling approximately 19 minutes for each condition including instructions and introductions. The participant always presented her arguments in between the two male confederates.

Participants were randomly assigned to either the sexism or comparison condition. In the sexism condition, the sexist verbal behavior of the male confederates became increasingly clear throughout the three discussion periods. In the first round, the confederates did not express sexist verbal behavior. In the second round, the sexist

verbal behavior became ambiguous; for example, “Especially when it comes to leading the students in the lab, I think she’s probably a better team player rather than a leader.” In the third round, the sexist verbal behavior became obvious; for example, “Like most women, Rebecca would probably be too emotional to handle a competitive lab environment. To be a researcher, you need to be focused and rational.”

In the comparison condition, confederates chose the male applicant to hold the participant’s choice as the minority opinion consistent across conditions; however, the confederates acknowledged the participant’s arguments and did not express sexist verbal behavior. It is important to note that the simple structure of the committee meeting (i.e., one woman, two men who selected a male over female applicant) may have created a situation in which ambiguous sexism was detected by the participant; this is further discussed in the discussion section. In the first round, the recording was identical to the recording played in the sexism condition. In the second and third rounds, the confederates maintained their choice of applicant, but their verbal behavior did not include sexist remarks; for example, in round 2, “Rebecca has some good qualifications, but I think that Robert is the stronger applicant,” in round 3, “I really do see your point (referring to participant), but I think Robert has more outside knowledge to bring to the lab rather than Rebecca.”

After the rounds of discussion, the participant completed a five minute “pure recovery” period (i.e., sitting completely still without a task) before she re-evaluated the two candidates and provided a final recommendation for the lab manager position. In addition, participants completed post-appraisals of stress and effort, perceptions of sexism in the deliberations and the other committee members, the Positive and

Negative Affect Scale (Watson, Clark, & Tellegen, 1988), self-esteem measures (Rosenberg, 1965; Heatherton & Polivy, 1991), and finally manipulation and suspicion checks (see Appendix B).

Measures

Heart Rate (HR)

Heart Rate (HR) was averaged for the full five minutes of baseline ($\alpha = .99$), 4 minutes during each round of discussion (round 1: minutes 1:30-4:30, $\alpha = .98$; round 2: 8:00-12:00, $\alpha = .98$; round 3: 14:00-18:00, $\alpha = .97$), and the full five minutes of the recovery period ($\alpha = .99$). Data for all rounds of discussion and the recovery period were then calculated relative to baseline (e.g., subtracting the participants' baseline HR from HR in round 1 to analyze reactivity during the discussion period and whether the participant returned to baseline HR during the recovery period).

Respiratory Sinus Arrhythmia (RSA)

To calculate HF-HRV, frequency domain analyses were performed on the digital recording of inter-beat-intervals and artifacts were edited manually in 30-second segments using Mindware's HRV 3.2.0 module.

Only segments that included a continuous 30 seconds of data were included in data analysis as a complete 30 second segment of data is necessary to accurately average across time periods (Berntson et al., 2017; Shaffer & Ginsberg, 2017). RSA was averaged for the full five minutes of baseline ($\alpha = .97$), 4 minutes during each round of discussion (round 1, $\alpha = .99$; round 2, $\alpha = .99$; round 3, $\alpha = .99$), and the full five minutes of the recovery period ($\alpha = .99$). Data for all rounds of discussion and the

recovery period were then calculated relative to baseline in the same manner as was completed for HR reactivity and recovery.

Results

Exclusion Criteria

Participants were excluded from analysis if they recommended Robert for the position prior to the committee discussion ($n = 10$) or their experimental session ended early for various reasons (e.g., equipment failure, session ran over time; $n = 7$). No participants were removed due to biologically implausible values at baseline (RSA values well below or above a 4.0 to 8.0). Degrees of freedom for the self-report data fluctuate due to exclusion of outliers for the variables (i.e., participants' scores ± 3.29 z-scores away from the mean). Outliers were determined similarly for physiological variables while values may also fluctuate due to missing data and equipment artifact.

Preliminary Analyses

Before analyzing hypotheses, analyses were conducted to ensure (1) the paradigm was credible to participants, (2) there was not failure of random assignment (preliminary ratings of the job applicants and baseline HRV), (3) participants remain engaged throughout the experimental paradigm, (4) participants perceived higher bias in the sexism condition versus the comparison condition, and (5) participants perceived greater rejection in the sexism condition versus the comparison condition.

Suspicion Checks

Participants reported suspicion over the authenticity of the other committee members at the end of the post discussion survey and during the debriefing period. Overall, 19 participants reported suspicion of the experimental paradigm ($n_{sexism} = 12$).

All analyses involving data recorded during or after the discussion period (i.e., physiological variables beyond baseline, post discussion self-report data) were conducted with and without the identified suspicious participants. Effects did not change when suspicious participants were removed; therefore, suspicious individuals were included in analyses.

Confirmation of Random Assignment

Baseline HR and RSA. As expected, there were no differences in baseline HR levels between the sexism condition ($M = 75.27$, $SD = 12.51$, $n = 46$) and the comparison condition ($M = 77.04$, $SD = 12.57$, $n = 50$; $t(94) = -.69$, $p = .493$, $d = .14$). Similarly, there were no differences in baseline RSA levels between the sexism condition ($M = 6.90$, $SD = 1.07$, $n = 46$) and the comparison condition ($M = 6.63$, $SD = 1.27$, $n = 50$; $t(94) = 1.14$, $p = .256$, $d = .23$).

Ratings of Robert and Rebecca. Three 2 (condition) x 2 (applicant) repeated measures ANOVAs were conducted to (1) establish Rebecca was viewed as more qualified, fit for the position, and hireable than Robert, and (2) ensure there are no differences between condition in preliminary ratings of Robert and Rebecca. Means and standard deviations for ratings of qualification, fit, and hireability are in Table 1. As intended, participants in both conditions viewed Rebecca as more qualified ($F(1,106) = 250.08$, $p < .001$, $\eta p^2 = .70$), fit ($F(1,108) = 267.56$, $p < .001$, $\eta p^2 = .71$), and hireable ($F(1,107) = 330.32$, $p < .001$, $\eta p^2 = .76$) for the position than Robert. There were no difference between condition in ratings of Robert or Rebecca in qualification ($F(1,106) = .66$, $p = .420$, $\eta p^2 = .01$), fitness ($F(1,108) = .13$, $p = .723$, $\eta p^2 = .00$), and hireability ($F(1,107) = .27$, $p = .594$, $\eta p^2 = .00$), nor were there significant

interactions between condition and applicant for qualification ($F(1,106) = 1.26, p = .167, \eta p^2 = .02$), fitness ($F(1,108) = .01, p = .905, \eta p^2 = .00$), or hireability ($F(1,107) = .45, p = .506, \eta p^2 = .00$). Participants viewed Rebecca as the more qualified applicant for the research manager position and there were no differences between conditions in preliminary ratings between the two job candidates.

Table 1

Means and standard deviations for qualification, fit, and hireability before discussion period

Variable	<i>N</i>	<i>M(SD)</i>
Rebecca		
Qualification		
Sexism	53	6.42(.63)
Comparison	53	6.45(.60)
Fit		
Sexism	53	6.45(.61)
Comparison	57	6.39(.62)
Hireability		
Sexism	52	6.50(.54)
Comparison	57	6.49(.57)
Robert		
Qualification		
Sexism	53	4.83(1.12)
Comparison	57	4.56(1.17)
Fit		
Sexism	53	4.25(1.29)
Comparison	57	4.21(1.35)
Hireability		
Sexism	53	4.42(1.06)
Comparison	57	4.56(1.07)

Note. *N* = number of participants, *M* = mean, *SD* = standard deviation

Engagement in the Experimental Paradigm

Participants were considered to be engaged in a research paradigm when heart rate significantly increased from baseline to the experimental task. Often, demonstrating engagement in an experimental task is a necessary prerequisite for utilizing other cardiovascular markers to index psychological states (Blascovich, 2013).

Table 2

Means and standard deviations for change in HR during discussion period

Variable	<i>N</i>	<i>M(SD)</i>
Round 1		
All	89	13.34(8.74)
Sexism	45	13.14(8.42)
Comparison	44	13.55(9.15)
Round 2		
All	89	13.17(8.81)
Sexism	45	15.44(9.10)
Comparison	44	10.86(7.95)
Round 3		
All	89	14.54(10.54)
Sexism	45	18.14(11.81)
Comparison	44	10.85(7.56)
Recovery		
All	93	1.76(4.51)
Sexism	46	2.61(4.94)
Comparison	47	.93(3.93)

Note.

A one sample t-test was conducted to ensure that change in HR was significantly different from zero during the rounds of discussion (see Table 2 for HR descriptive statistics). For women in the sexism condition, HR reactivity was significantly different from zero in round 1 ($t(44) = 10.47, p < .001$), round 2 ($t(44) = 11.39, p < .001$), and

round 3 ($t(44) = 10.31, p < .001$). Additionally, HR reactivity was significantly different from zero in the recovery period ($t(45) = 3.58, p = .001$). For women in the comparison condition, HR reactivity was significantly different from zero in round 1 ($t(46) = 10.35, p < .001$), round 2 ($t(45) = 9.30, p < .000$), and round 3 ($t(43) = 9.52, p < .001$). HR reactivity was not significantly different from zero during recovery indicating those in the comparison condition returned to baseline HR values during the recovery period ($t(46) = 1.62, p = .112$).

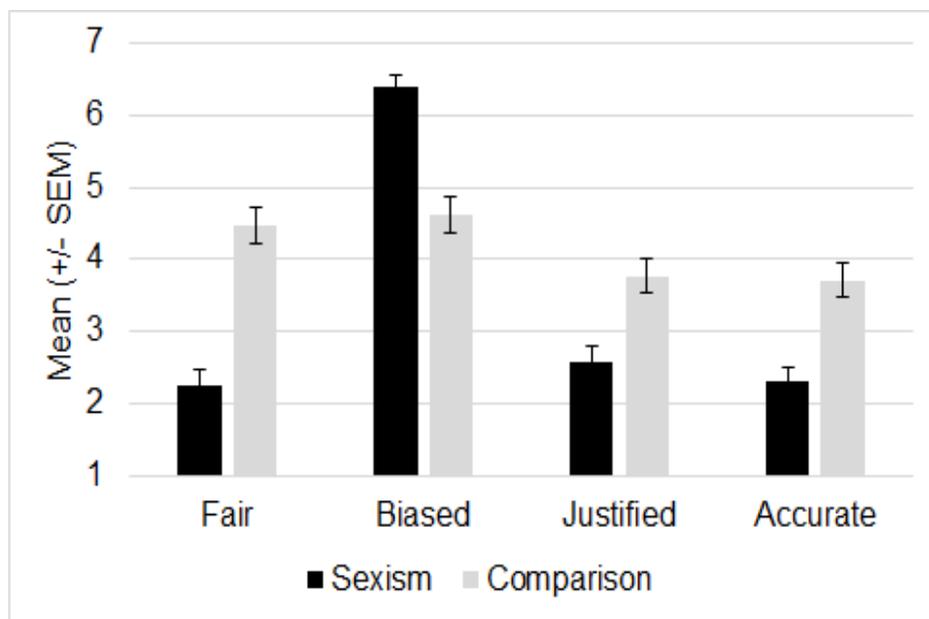


Figure 1a. Perceived Fairness and Bias of Committee Member Arguments. Women in the sexism condition viewed other committee members' comments as more biased, less fair, justified, and accurate than women in the comparison condition.

Perception of Fairness, Sexism, and Bias in the Experimental Paradigm

Independent sample t-tests were conducted to analyze whether the discussion period was successful in manipulating perceptions of sexism in the experiment. Women in the sexism condition were expected to perceive more sexism, bias, and less fairness in discussions than women in the comparison condition. Consistent with these hypotheses, participants in the comparison condition reported the committee

discussions were more fair ($M = 4.48$, $SD = 1.91$, $n = 56$) and less biased ($M = 4.61$, $SD = 1.91$, $n = 56$) than participants in the sexism condition who reported discussions as less fair ($M = 2.24$, $SD = 1.65$, $n = 54$; $t(108) = -6.59$, $p < .001$, $d = 1.26$) and more biased ($M = 6.40$, $SD = 1.18$, $n = 53$; $t(92.68) = 5.93$, $p < .001$, $d = 1.11$). Participants in the comparison condition also reported the other committee members' comments were more justified ($M = 3.77$, $SD = 1.84$, $n = 56$) and more accurate ($M = 3.71$, $SD = 1.76$, $n = 56$) than participants in the sexism condition who reported others' comments as less justified ($M = 2.56$, $SD = 1.69$, $n = 54$; $t(108) = -3.60$, $p < .001$, $d = .68$) and less accurate ($M = 2.31$, $SD = 1.37$, $n = 54$; $t(103.59) = -4.67$, $p < .001$, $d = .88$). See Figure 1a.

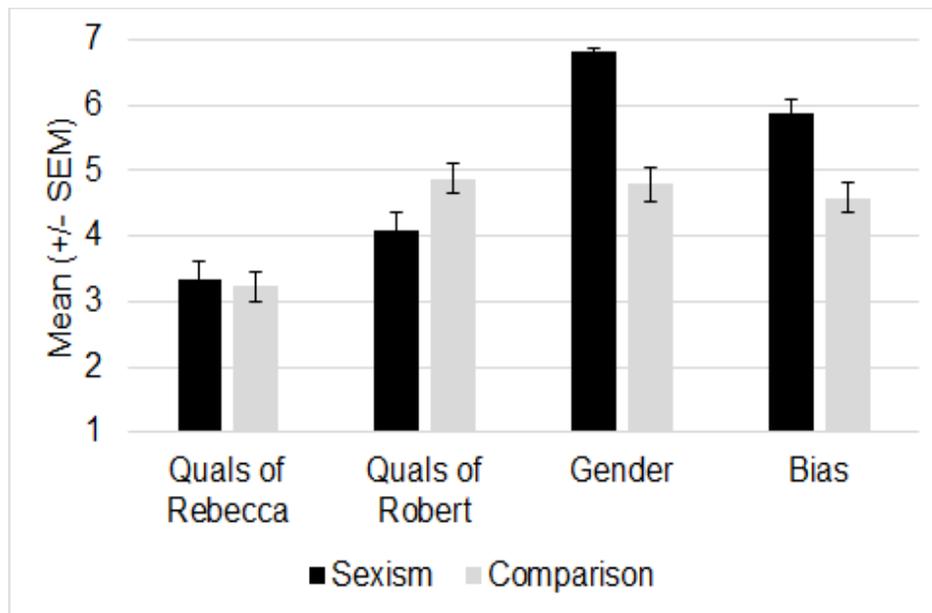


Figure 1a. Perceived Fairness and Bias of Committee Member Arguments (continued). Women in the sexism condition viewed the other committee members' comments as based on gender and bias more than women in the comparison condition. Women in the comparison condition viewed the discussions as more likely based on the qualifications of Robert, though there was no difference between conditions for perceptions that comments were based on the qualifications of Rebecca.

Participants in the comparison condition reported higher endorsement that committee member comments were based on the qualifications of Robert ($M = 4.88$, $SD = 1.79$, $n = 56$) than participants in the sexism condition ($M = 4.09$, $SD = 2.03$, $n = 54$; $t(108) = -2.15$, $p = .034$, $d = .41$). Participants in the sexism condition reported higher levels of endorsement that other committee member comments' were due to the gender of the applicants ($M = 6.81$, $SD = .55$, $n = 52$) and another committee members' bias ($M = 5.87$, $SD = 1.73$, $n = 54$) while participants in the comparison condition reported lower levels of gender ($M = 4.79$, $SD = 2.04$, $n = 56$; $t(63.27) = 7.17$, $p < .001$, $d = 1.35$) and biased reasoning ($M = 4.59$, $SD = 1.77$, $n = 56$; $t(108) = 3.85$, $p < .001$, $d = .73$). There were no differences between condition when reporting whether the other committee member comments' were due to the qualification of Rebecca (sexism: $M = 3.35$, $SD = 1.98$, $n = 54$; comparison: $M = 3.23$, $SD = 1.65$, $n = 56$; $t(103.15) = .343$, $p = .732$, $d = .07$). See Figure 1b.

An independent sample t-test was conducted to determine whether women in the sexism condition felt more rejected after discussions than women in the comparison condition. As expected, participants in the sexism condition reported feeling less understood ($M = 1.79$, $SD = 1.32$, $n = 52$) and less accepted ($M = 2.06$, $SD = 1.31$, $n = 52$) compared to participants in the comparison condition who felt relatively more understood ($M = 3.22$, $SD = 1.55$, $n = 55$; $t(105) = -5.13$, $p < .001$, $d = .99$) and more accepted ($M = 3.47$, $SD = 1.43$, $n = 55$; $t(105) = -5.35$, $p < .001$, $d = 1.02$).

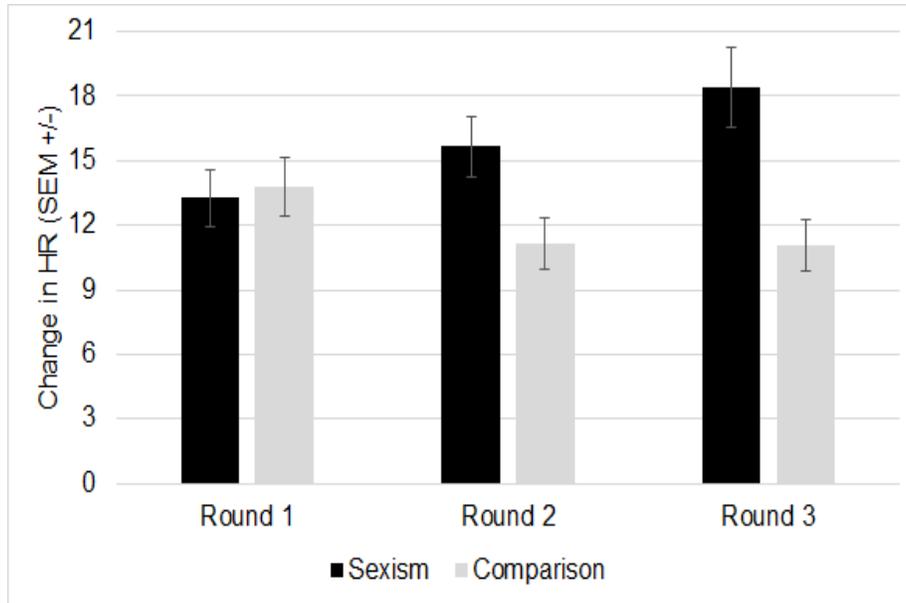


Figure 2. Engagements: Change in Heart Rate. All participants remained engaged throughout the discussion period. HR reactivity significantly increased throughout rounds of discussion for women in the sexism condition, while HR significantly decreased between rounds 1 and 2 for women in the comparison condition.

Heart Rate Reactivity during Discussion Period

A 2 (condition) x 3 (round of discussion) repeated measures ANOVA was conducted to assess differences in HR reactivity between conditions during each round of discussion. Consistent with hypotheses, results indicated an interaction between condition and round of discussion ($F(2,174) = 19.71, p < .001, \eta p^2 = .19$), qualifying the significant main effect of condition ($F(1,87) = 4.54, p = .036, \eta p^2 = .05$); no main effect of round ($F(2,174) = 2.72, p = .069, \eta p^2 = .03$). As was expected, participants in the sexism condition demonstrated a significant increase in HR between all rounds of discussion (all $ps < .05$) while participants in the comparison condition demonstrated a significant decrease in HR between rounds 1 and 2 ($p = .003$) and rounds 1 and 3 ($p = .032$), but no difference between HR in rounds 2 & 3 ($p = 1.00$; see figure 2). Means and

standard deviations for change in HR between conditions during rounds 1, 2, and 3 of the discussion period are also presented in Table 2.

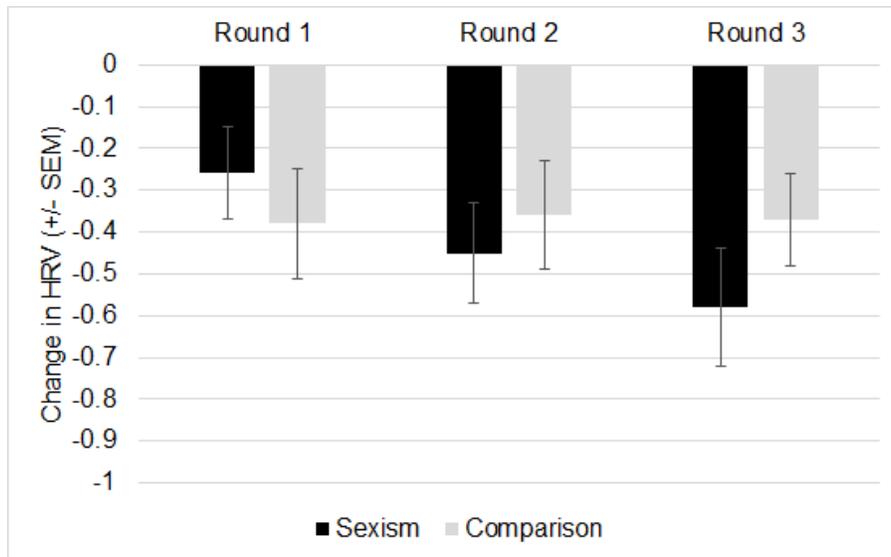


Figure 3. Respiratory Sinus Arrhythmia Reactivity. For women in the sexism condition, RSA reactivity significantly decreased (higher RSA suppression) between rounds 1 and 2 of discussion. For women in the comparison condition, RSA reactivity did not change throughout the discussion.

Respiratory Sinus Arrhythmia Reactivity during Discussion Period

A 2 (condition) x 3 (round of discussion) repeated measures ANOVA was conducted to assess differences in RSA reactivity between rounds 1, 2, and 3 of the discussion period. Consistent with hypotheses, results indicated an interaction between condition and round of discussion ($F(2,176) = 6.23, p = .002, \eta p^2 = .07$) qualifying the significant main effect of round ($F(2,176) = 3.40, p = .036, \eta p^2 = .04$); no main effect of condition ($F(1,88) = .06, p = .805, \eta p^2 = .00$). Consistent with hypotheses, women in the sexism condition showed significant change in RSA between rounds, however, it was in the opposite direction than expected. Women in the sexism condition showed RSA suppression between rounds 1 and 2 ($p = .028$) and round 1 and 3 ($p < .001$), but not

between rounds 2 and 3 ($p = .19$). For participants in the comparison condition, there were no differences between round in RSA reactivity (all $ps > .05$; see Figure 3).

Emotion, Perceived Sexism, and Physiological Reactivity

Independent t-tests were used to evaluate differences in emotion by condition. Bivariate correlational analyses were conducted to analyze the relationships between anger, anxiety, perceived sexism, and HR/RSA reactivity during rounds of discussion and recovery. The self-report item “To what extent do you think the other committee members’ comments were due to the gender of the applicants?” was used as a measure of perceived sexism.

Anxiety

Contrary to hypotheses, there was no difference in reported level of anxiety between women in the sexism condition ($M = 3.35$, $SD = 1.84$, $n = 54$) and women in the comparison condition after discussion ($M = 3.04$, $SD = 1.73$, $n = 56$; $t(108) = .93$, $p = .355$, $d = .17$). Perceived sexism was unrelated to feelings of anxiety for women in the sexism condition ($r = -.17$, $p = .223$, $n = 53$) or the comparison condition ($r = .20$, $p = .110$, $n = 54$). The correlations for each condition are in the predicted direction, though they are far from significant, which is consistent with prior research. When women in the sexism condition perceived greater sexism, they reported lower levels of anxiety while women in the comparison condition reported greater anxiety after perceiving greater sexism.

Inconsistent with hypotheses, anxiety was unrelated to HR reactivity and recovery for both women in the sexism and comparison conditions (all $ps > .05$; see Table 3). Though not in the direction hypothesized, anxiety was related to RSA

reactivity in rounds 1 ($r = .31, p = .036, n = 46$) and 2 ($r = .32, p = .034, n = 45$), but not in round 3 or recovery (p s $> .05$; see Table 3) for women in the comparison condition.

Anxiety and RSA reactivity and recovery were unrelated for women in the sexism condition (p 's $> .05$; see Table 3).

Table 3
Correlations for Perceived Sexism, Anger, Anxiety, and HR & RSA reactivity

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Anxiety	-	.20	.22	.02	.05	.14	.06	.31*	.32*	.21	.20
2. Anger	.01	-	.39*	-.20	-.14	-.15	.05	-.01	.02	.01	-.16
3. Perceived Sexism	-.17	.21	-	-.13	.00	-.10	-.06	.28^	.23	.22	.15
HR Reactivity											
4. Round 1	.05	.14	.09	-	.86*	.78*	.45*	-.51*	-.32*	-.36*	-.03
5. Round 2	-.01	.24	-.08	.80*	-	.92*	.57*	-.41*	-.38*	-.45*	-.04
6. Round 3	.13	.25	-.05	.75*	.82*	-	.60*	-.28^	-.25^	-.41*	.01
7. Recovery	-.11	.17	-.17	.54*	.57*	.53*	-	-.21	-.24	-.32*	-.38*
RSA Reactivity											
8. Round 1	-.03	-.15	.29^	-.70*	-.63*	-.66*	-.43*	-	.84*	.83*	.58*
9. Round 2	.09	-.11	.21	-.60*	-.81*	-.65*	-.44*	.84*	-	.89*	.61*
10. Round 3	-.04	-.06	.19	-.62*	-.74*	-.81*	-.48*	.83*	.86*	-	.66*
11. Recovery	.27^	.00	.20	-.20	-.24	.20	-.65*	.32*	.33*	.40*	-

Note. Correlations for sexism condition on the left/bottom portion of table, correlations for comparison condition on the right/top portion of table, * denotes $p < .05$, two-tailed. ^denotes $p < .10$, two-tailed.

Anger

As expected, women in the sexism condition reported feeling angrier after the discussion ($M = 3.26, SD = 1.87, n = 54$) than women in the comparison condition ($M = 1.75, SD = 1.18, n = 56; t(89) = 5.05, p < .001, d = .97$). Unexpectedly, anger was positively related to perceived sexism for women in the comparison condition ($r = .39, p = .003, n = 54$), but unrelated for women in the sexism condition ($r = .21, p = .135, n =$

53). Anger was not related to feelings of anxiety in either the sexism condition ($r = .01, p = .933, n = 53$) or the comparison condition ($r = .20, p = .151, n = 54$) supporting that these two emotional responses are distinct and differentiable.

Anger was unrelated to HR or RSA reactivity in either the sexism or comparison conditions (p 's $> .05$; see Table 3). Though these correlations are non-significant, the relationship between the two variables are in opposite directions. For women in the sexism condition, as anger increased, HR reactivity during rounds of discussion and recovery also increased. For women in the comparison condition, as anger increased, HR reactivity during rounds of discussion decreased. It is important to note that women in the comparison condition reported generally low feelings of anger.

Perceived Sexism

The relationship between perceived sexism and anxiety and perceived sexism and anger are discussed above. Contrary to hypotheses, perceived sexism was unrelated to HR reactivity during all rounds of discussion for both women in the sexism and comparison conditions ($ps > .05$). Perceived sexism was marginally, significantly related to RSA reactivity in round 1 for women in the sexism condition ($r = .29, p = .061, n = 44$) and the comparison condition ($r = .28, p = .061, n = 46$). Inconsistent with hypotheses, for all other rounds of discussion and recovery, greater perceived sexism was unrelated to RSA reactivity in both the sexism and comparison conditions ($ps > .05$; see Table 3).

Gender Identification

Gender Identification and Self-Reported Emotion

A bivariate correlational analysis was conducted to examine the relationships between gender identification and self-reported anger and anxiety. Contrary to predictions, there were not significant relationships between gender identification, anger, or anxiety (p 's > .05).

Gender identification and Physiological Variables

A bivariate correlational analysis was conducted in order to examine the relationships between gender identification and HR or RSA reactivity in rounds of discussion and in recovery. It is important to note here that analyses including gender identification only included a portion of the current sample due to missing data in the prescreen survey.

Table 5

HR & RSA correlations with Gender Identification

Condition	HR Reactivity				RSA Reactivity			
	Round 1	Round 2	Round 3	Recovery	Round 1	Round 2	Round 3	Recovery
Sexism	-.23	-.18	-.31 [^]	-.41 [*]	-.03	-.11	.26	-.06
Comparison	-.47 [*]	-.42 [*]	-.32 [^]	-.50 [*]	.42 [*]	.41 [*]	.41 [*]	.40 [*]

Note. * denotes $p < .05$, [^] denotes $p < .10$

HR Reactivity. Inconsistent with predictions for the comparison condition, level of gender identification was significantly, negatively related to HR reactivity, such that as gender identification increased, HR reactivity decreased in round 1 ($r = -.47$, $p = .007$, $n = 32$), round 2 ($r = -.42$, $p = .017$, $n = 32$), and recovery ($r = -.50$, $p = .004$, $n = 32$).

Decrease in HR reactivity was marginally significant in round 3 ($r = -.32, p = .079, n = 31$). Inconsistent with hypotheses, gender identification was marginally, negatively related to HR reactivity in round 3 ($r = -.31, p = .082, n = 32$) and significantly, negatively related in recovery ($r = -.41, p = .018, n = 33$) for women in the sexism condition, such that as level of gender identification increased, HR reactivity increased. A correlation between gender identification and HR for women interacting with the sexist committee members later in the discussion period is consistent for hypotheses, though the relationship is in the opposite direction than expected.

RSA reactivity. Again, inconsistent with hypotheses for women in the comparison condition, level of gender identification was significantly, positively related to RSA reactivity in all rounds of discussion and recovery ($ps < .05$; see table for r 's). As gender identification increased, RSA suppression decreased. For women in the sexism condition, level of gender identification was unrelated to RSA reactivity in all rounds of discussion and recovery ($ps > .05$) which was contrary to predictions.

Discussion

Results validated the current study's approach in examining changes in physiological reactivity over time. Participants demonstrated patterns of change in HR and RSA throughout the experimental paradigm after interacting with sexist committee members, but not after interacting with committee members in the comparison condition. Observing this pattern of reactivity provided strong justification for continuing investigation of further physiological stress variables to more closely examine how women's motivational state changes over time as sexism increases in clarity.

As expected, women in both conditions demonstrated a significant increase in HR from baseline which was maintained throughout the discussion period. Observing a significant, sustained increase in HR during a stressor is an important precursor to analyzing other physiological stress variables (e.g., RSA, cardiac output, total peripheral resistance) and supports the further exploration of these variables. Specifically for women in the sexism condition, HR increased through each round of discussion, as the clarity of sexism increased in each round. Women in the comparison condition, however, did not demonstrate this pattern of reactivity; they showed a significant decrease in HR compared to the first round of discussion that was maintained through the third round. For women in the sexism condition, an increase of HR in each round of discussion could support hypotheses that participants may transition from avoidance motivation (threat) to approach motivation (challenge) throughout the discussion (Blascovich, 2013). The additional increase in HR during round 3 could be evidence of “hyper challenge” in which patterns of physiological activity consistent with approach motivation or “challenge” are exaggerated (i.e., higher increases in HR during the stressor; Mendes & Park, 2014). This initial evidence showing women’s HR reactivity elevated over time during a sexist interaction provides justification for examining how motivational state may change throughout the interaction. To more accurately mark these motivational states, we will continue this investigation by analyzing physiological variables more closely related to approach (i.e., challenge) and avoidance (i.e., threat) motivation.

Some studies provide evidence that RSA reactivity may differentiate between approach and avoidance motivational states, though the evidence is mixed (Mendes,

2016). It has been suggested that RSA suppression may be more related to avoidance motivation, though many studies observed RSA suppression, in general, to a stressful experimental task that may vary in degree of suppression or relation to emotional and behavioral outcomes (Croizet et al., 2004; Muhtadie et al., 2015). Therefore, the current study hypothesized a pattern of RSA suppression in all rounds of discussion, and found support for this hypothesis. Inconsistent with hypotheses, however, women in the sexism condition had increases in RSA suppression between rounds 1 and 2 of discussion and maintained suppression through the third round. Women in the comparison condition did not demonstrate significant changes in RSA between rounds of discussion, but maintained overall suppression throughout.

Importantly, RSA reactivity changed over time in the sexism condition providing further evidence for the experimental approach to observe change in motivational and physiological state over time. Based on known patterns of RSA reactivity consistent with approach and avoidance motivational states (i.e., decreases in RSA associated with avoidance motivation), I expected RSA suppression to decrease in the sexism condition during the third round of discussion when sexism was clearer (Mendes, 2016). This pattern did not emerge; in fact, RSA reactivity significantly decreased in round 2 and maintained decrease in round 3. Using RSA patterns typically observed with avoidance motivation, this could suggest that women in the sexism condition may feel threatened throughout the whole discussion, rather than feeling more challenged as the sexism became clearer. Some evidence argues, however, that RSA suppression may be a marker of preparation to respond to threats and challenges in the environment (Brooker & Buss, 2010; Porges, 2007) which could be suggest RSA does not distinguish between

approach and avoidance motivation. Given that RSA is known to mark effort and attention, and that RSA suppression indicates greater effort and attention, greater RSA suppression in rounds 2 and 3 of the discussion period relative to round 1 may show that the presence of sexism increases attention within the paradigm (Andreassi, 2007). Though hypothesized patterns of RSA reactivity were not supported, RSA may not be marking approach and avoidance motivation in the current study, as was hypothesized. RSA reactivity, however, did change over time in the sexism condition providing further support for analyzing other physiological variables that may be more closely associated with approach and avoidance motivation.

Self-reported anger or anxiety after the stressor could assist with inferences regarding a participant's attributional state during a stressor (Mendes & Park, 2014). Consistent with hypotheses, women reported greater anger after interacting with the sexist committee members relative to the committee members in the comparison condition which could indicate the participants blamed the other committee members' sexism for the disagreement. Ambiguous sexism, on the other hand, may lead women to question whether she or the other committee members were to blame for the disagreement resulting in greater feelings of anxiety (McCoy & Major, 2003). Therefore, I expected women in the comparison condition to report greater anxiety than women in the sexism condition given the ambiguity present in the discussion period. Inconsistent with hypotheses, there were no differences between conditions in reported anxiety after the discussion period. Additionally, anxiety was unrelated to change in HR in both conditions, and only related to RSA reactivity for the comparison condition in round 1 and 2. Anger was unrelated to HR and RSA reactivity in both conditions.

The lack of relationship between anger or anxiety and physiological reactivity is unexpected and may be inconsistent with the study's hypotheses. Although the correlations between anger and HR were not statistically significant, the direction of correlations between the two conditions were opposite. Women in the sexism condition demonstrated higher HR as reported anger increased, while women in the comparison condition reported lower HR as reported anger increased. This pattern of reactivity is consistent with hypotheses predicting that women in the sexism condition will tend to report greater anger which should correspond to sudden increases in HR, possibly indicating an approach motivational state (i.e., challenge-like physiological reactivity). Additionally, women who reported greater anger in the comparison condition had lower HR reactivity compared to those who reported less anger. This could be due to the ambiguous nature of the condition, possibly indicating an avoidance motivational state (i.e., threat-like physiological reactivity).

The lack of relationship between anger or anxiety and the current physiological variables may be due to the type of physiological variables currently analyzed. We may expect stronger correlations between anger and cardiac output or total peripheral resistance as these variables are more typically used to mark emotional states (Mendes & Park, 2014). As the current pattern of HR and RSA reactivity provides strong justification for further analyzing physiological variables such as CO and TPR, when completed, correlations with self-reported emotion and physiological reactivity may then emerge.

Consistent with hypotheses, gender identification was significantly related to change in HR, though not in the direction expected. As gender identification increased,

HR reactivity decreased. This pattern was significant in all rounds of discussion and recovery for women in the comparison condition and significant in recovery for women in the sexism condition, though the trend emerged for all rounds of discussion. The relationship between gender identification and HR may be non-significant in the sexism condition due to the bluntness of sexism present during discussion. As a women's gender identification increases, this may make her more attentive to instances of sexism occurring around her than women lower in gender identification (McCoy & Major, 2003). However, the sexist language present in the current study may have been so obvious that it was not possible to capture potential variability in perception typically observed with gender identification. This ceiling effect may be why the correlation between gender identification and HR reactivity appeared only within the comparison condition. Similarly to HR and consistent with hypotheses, as a women's gender identification increased, RSA suppression decreased in the comparison condition - no relationships emerged in the sexism condition.

Review of Effectiveness of Experimental Paradigm

Overall, results supported that the current experimental paradigm was effective in manipulating sexism that increases in clarity over time and capturing the physiological stress responses associated with this progression. Elevated HR throughout the discussion period supported that participants remained engaged in the paradigm in both conditions which is an important marker prior to examining further physiological markers of stress. Additionally, confirming the two intended manipulations were successful: (1) participants perceived greater levels of sexism in the sexism condition relative to the comparison condition, and (2) participants in the sexism condition felt more rejected

(less understood and accepted) than women in the comparison condition. Participants in the comparison condition perceived greater amounts of sexism than expected, however. The power of the situation in which the participant was the only woman on the committee with two other men who both selected the male candidate over the female candidate appears to have been enough evidence for most women to perceive potential gender bias in the comparison condition. Though this effect was not intended, the comparison condition may have operated as an “ambiguous sexism condition” in which the participant perceived the other committee members’ arguments as rooted in sexism, but the evidence is not as clear as in the sexism condition. If this were the case, the same pattern of physiological activity as was hypothesized would be expected (i.e., participant remains in avoidance motivation throughout the discussion period) as ambiguity and uncertainty can result in more threat-like physiological reactivity.

One point of concern in the current paradigm was the rate of suspicion participants reported in the post discussion survey. Moving forward with the paradigm, extra steps will be taken to increase realism within the paradigm possibly including a fake “video introduction” between the participants or staged male confederates waiting to begin the study with the participant. Level of suspicion will then be re-evaluated to determine these changes were effective in reducing the rate of suspicion within the paradigm.

Moving forward, participant demographics will be collected at the end of the post discussion survey during the experimental session to ensure the demographics represent the entirety of the sample. I will also add a restriction during participant recruitment indicating participants must have completed the departmental prescreening

survey before participating in the study to decrease data loss in gender identification hypotheses.

Motivation Indexed by CV Responses of Threat, Challenge, and Anger

Even further, I will further analyze these data using physiological markers beyond HR and RSA. Drawing on the biopsychosocial model of threat and challenge, approach and avoidance motivation can be distinguished via relative changes from baseline in cardiac output (CO) and total peripheral resistance (TPR; Mendes & Park, 2014). Relative to baseline, the pattern of decreased TPR and increased CO are indicative of a greater challenge response marking approach motivation while the pattern of increased TPR and decreased CO are indicative of a greater threat response marking greater avoidance motivation. As the approach emotion of anger increases, challenge responses can become more like “hyper challenge” with exaggerated responses that persist into a recovery period. By measuring continuous physiological responses with CO and TPR, change in motivational state can be inferred throughout the experimental paradigm.

When analyzing motivational response, I predict women’s motivational state will move from avoidance (indexed by threat cardiovascular reactivity) to approach (indexed by challenge cardiovascular reactivity) as clarity of sexism increases. Further, I expect women higher in group identification to respond with approach motivation earlier as a result of identifying ambiguous sexism cues as more clearly sexist than women lower in group identification. Therefore, I predict as sexism becomes more obvious, women higher in group identification will experience more anger and demonstrate cardiovascular markers of hyper challenge. By indexing and analyzing change in

motivational state over time, I will analyze how motivational state and pattern of physiological reactivity may predict women's behavioral outcomes (e.g., confronting versus ignoring sexism).

Motivation Related to Behavioral Outcomes

There are many potential coping responses when dealing with a sexist perpetrator which may include ignoring or confronting the perpetrator. Research has demonstrated that deciding whether or not to confront discrimination can be a complicated decision for women who need to weigh the potential costs/benefits of their decision to confront (Good, Moss-Racusin, & Sanchez, 2012; Kaiser & Miller, 2001). When the costs of confronting are high (e.g., perpetrator holds a position of power relative to the target), a woman may decide to tolerate sexism due to fear of the potential repercussions of confronting. In the current study, the perpetrators of sexism hold equal status to the participant and she is told identities will remain completely anonymous; therefore, women may be more likely to confront the sexism. Determining the motivational, social, and situational factors that encourage *effective* confrontation is an important next step to advancing confronting research. This research paradigm has the potential to study the patterns of motivational responding that may lead to confrontation of sexism. Additionally, I will examine whether confronting sexism influences a woman's recovery after the discussion period.

Conclusions

Mallett and Monteith (2019) suggest "conducting high impact laboratory research to capture actual responses [to witnessing or experiencing biased behavior] is challenging.... However, investing the time and resources to conduct resource-intensive

work that examines dynamic behavior is essential...” (pp. xxiv). Initial results of the current study support the research approach of examining change in women’s physiological reactivity in response to sexism that unfolds over time. Utilizing the current paradigm may have the potential to answer questions regarding the motivational responses that occur as a woman experiences ambiguous and clear sexism and how motivational responses may inspire or discourage certain behavioral responses. The next steps of this project will examine physiological variables more traditionally associated with approach and avoidance motivational states (i.e., TPR and CO), as well as, examining women’s behavioral responses to sexism (i.e., confrontation) throughout the committee discussion meetings.

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APPENDICES

Appendix A – Prescreening Measures

Rate the extent to which you agree or disagree with each of the following items using the scale provided.

0-----1-----2-----3-----4-----5-----6
Strongly Disagree Strongly Agree

1. Being a woman has very little to do with how I feel about myself.
2. Being a woman is an important reflection of who I am.
3. Being a woman is unimportant to my sense of what kind of person I am.
4. In general, being a woman is an important part of my self-image.

Appendix B – Pre/Post-Task Questionnaire

Please use the scales below to rate the applicants on their qualification for the job, hireability, and deserved salary.

APPLICANT A/B:

How qualified is Applicant A/B?

0-----1-----2-----3-----4-----5-----6
Not Very Very
Qualified Qualified

Would you hire Applicant A/B?

0-----1-----2-----3-----4-----5-----6
Definitely Definitely
Not Hire Hire

How good a fit for the position is Applicant A/B?

0-----1-----2-----3-----4-----5-----6
Not a Very
Good Fit Good Fit

If hired, how much should Applicant A/B be paid? Salary range is \$18,000 to \$30,000

Who is your INITIAL/FINAL recommendation for the job position? Circle One:

Applicant A OR Applicant B

Appendix C: Post Task Appraisal

Please indicate by writing a number before each statement to indicate how you are feeling right now regarding the task you just completed.

0-----1-----2-----3-----4-----5-----6
Strongly Disagree Strongly Agree

- _____ 1. The task was very demanding.
- _____ 2. I am very uncertain about how I performed during the task.
- _____ 3. The task took a lot of effort to complete
- _____ 4. The task was very stressful.
- _____ 5. I performed the task successfully.
- _____ 6. I performed poorly on this task.
- _____ 7. I usually perform better in these types of situations.
- _____ 8. I am distressed by my performance.
- _____ 9. I performed about how I expected on the task.
- _____ 10. The task was a positive challenge for me.
- _____ 11. The task was threatening to me.

Appendix D: Committee Meeting Impressions

Please use the scale below to rate the committee deliberations.

0-----1-----2-----3-----4-----5-----6
Strongly Disagree Strongly Agree

To what extent do you think the other committee member's comments were:

1. fair
2. random
3. surprising
4. biased
5. predictable
6. justified
7. accurate
8. unexpected

To what extent do you think the other committee member's comments were due to:

1. the qualifications of Applicant A
2. the qualifications of Applicant B
3. The gender of the applicants
4. The race of the applicants
5. The age of the applicants
6. A committee member's personality
7. A committee member's bias
8. Other:

Impression of Committee Member 1/2

Who did Committee Member 1 initially choose: Applicant A OR Applicant B

Please fill in what you know about the participant:

Age_____ Race/Ethnicity_____

Gender_____ Major_____ Name_____

Based only on your limited interaction with Committee Member 1/2, please rate him/her on each of the following dimensions.

0-----1-----2-----3-----4-----5-----6
Not at all Very much

1. Intelligent
2. Pleasant
3. Nice
4. Rude
5. Honest
6. Fair
7. Cold
8. Sexist
9. Racist
10. Friendly
11. Forceful
12. Assertive
13. Truthful
14. Warm
15. Aggressive

Appendix E: Positive and Negative Affective Scale

Directions: This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. **Indicate to what extent each item describes how you are feelings *right now-that is At This Moment.***

1-----2-----3-----4-----5
Very Slightly A Little Moderately Quite a Bit Extremely
Or Not at All

- | | |
|------------------------|--------------------------|
| _____ 1. Happy | _____ 23. Proud |
| _____ 2. Attentive | _____ 24. Tense |
| _____ 3. Anxious | _____ 25. Successful |
| _____ 4. Interested | _____ 26. Unhappy |
| _____ 5. Afraid | _____ 27. Scared |
| _____ 6. Disappointed | _____ 28. Hostile |
| _____ 7. Satisfied | _____ 29. Inspired |
| _____ 8. Distressed | _____ 30. Troubled |
| _____ 9. Excited | _____ 31. Ashamed |
| _____ 10. Pleased | _____ 32. Active |
| _____ 11. Angry | _____ 33. Glad |
| _____ 12. Upset | _____ 34. Miserable |
| _____ 13. Strong | _____ 35. Irritable |
| _____ 14. Hopeless | _____ 36. Alert |
| _____ 15. Enthusiastic | _____ 37. Humiliated |
| _____ 16. Jittery | _____ 38. Rejected |
| _____ 17. Sad | _____ 39. Displeased |
| _____ 18. Guilty | _____ 40. Embarrassed |
| _____ 19. Content | _____ 41. Understood |
| _____ 20. Relaxed | _____ 42. Accepted |
| _____ 21. Nervous | _____ 43. Confident |
| _____ 22. Determined | _____ 44. Like a Failure |

BIOGRAPHY OF THE AUTHOR

Shelby Helwig attended Lock Haven University of Pennsylvania and graduated in 2017 with a Bachelor's degree in Psychology. She has been enrolled at the University of Maine since August 2017 and completed her thesis research between the years 2017-2019 (defended summer 2019). Shelby is a candidate for the Master of Arts degree in Psychology from the University of Maine in May 2022.