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# The effects of control threat on women's acceptance of benevolent sexism and traditional gender roles

Zheng Li  
*University of Northern Iowa*

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THE EFFECTS OF CONTROL THREAT ON WOMEN'S ACCEPTANCE OF  
BENEVOLENT SEXISM AND TRADITIONAL GENDER ROLES

An Abstract of a Thesis  
Submitted  
in Partial Fulfillment  
of Requirements for the Degree  
Master of Arts

Zheng Li  
University of Northern Iowa  
July 2016

## ABSTRACT

System Justification Theory (SJT; Jost & Banaji, 1994) predicts that people tend to accept and endorse the current socioeconomic and political arrangement when they feel threatened. Based on SJT, women should support traditional gender roles and benevolent sexism when they feel threatened because these system-justifying beliefs can mitigate anxiety and distress elicited by existential threats. In the current study, female participants' responses to a control threat were measured by an author-generated scale on attitudes toward traditional gender roles for women and Benevolent Sexism Scale (Glick & Fiske, 1996). In a community sample (but not in a student sample), participants whose personal control was threatened were more accepting toward benevolent sexism when compared with those whose control was not threatened. Participants in the control-threat condition also tended to express more traditional gender attitudes for women. In both community and student samples, those with stronger system-justification beliefs also tended to endorse more traditional gender roles and benevolent sexism; they also tended to be less gender-equality oriented, more politically conservative, and more religious. The effects of control threat in the community sample were not mediated by gender-specific system justification or moderated by gender identification. Based on the Compensatory Control Model (CCM; Kay et al., 2009), it is possible that benevolent sexism and traditional gender roles are perceived as a source of compensating control, which is in line with the protective and caring tone implied by benevolent sexism (Glick & Fiske, 1996; 2001). The results suggest that control threat may lead women to accept the status quo and internalize gender inequality, rather than defending gender egalitarianism.

*Keywords: Control threat, benevolent sexism, system justification*

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Has been approved as meeting of the thesis requirement for the  
Degree of Master of Arts

\_\_\_\_\_

Date

\_\_\_\_\_

Dr. Helen C. Harton, Chair, Thesis Committee

\_\_\_\_\_

Date

\_\_\_\_\_

Dr. Nicholas Schwab, Thesis Committee Member

\_\_\_\_\_

Date

\_\_\_\_\_

Dr. Elizabeth Lefler, Thesis Committee Member

\_\_\_\_\_

Date

\_\_\_\_\_

Dr. Kavita Dhanwada, Dean, Graduate College

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## CHAPTER 1

### INTRODUCTION

Although people tend to believe and assert that gender-stereotypes and discrimination are things of the past, research and statistics indicate that gender-equality has not been reached (Ellemers & Barreto, 2009). For instance, women's salary is only a fraction of men's, even after controlling for relevant variables such as education and experience, and this pay gap is prevalent even in developed countries such as America and Canada (Alksnis, Desmarais, & Curtis, 2008). When presented with these results, lay people and some scholars tend to attribute gender-inequality to discrimination that infringes on women and assume that the processes producing gender-discrimination are formed against women's willingness (e.g., Goldberg, 1993). However, there are also theories that suggest that women may take part in the process of forming gender-inequality, even in an active and willing manner.

Existential theorists address how people's attitudes and decision-making regarding social issues such as gender-stereotypes and prejudice are shaped by the need to buffer threats associated with the human condition (Kay, Gaucher, McGregor, & Nash, 2010). In the current study, based on System Justification Theory (SJT; Jost & Banaji, 1994), I investigated how women would respond to existential threats in terms of their attitudes towards benevolent sexism and traditional gender-roles. The following sections briefly introduce SJT and how it is similar or different from other existential theories in terms of how they explain the essence of a threat and the way people cope with it, before relating

SJT and its related concepts such as Benevolent Sexism (Glick & Fiske, 1996) to the issue of how women respond to gender inequality.

### System Justification Theory

System-Justification Theory (SJT; Jost & Banaji, 1994) suggests that people tend to recognize and support the current social system, even if the hierarchy of the system places the self in a disadvantageous position (van der Toorn & Jost, 2014). According to SJT, people are (usually unconsciously) motivated to support the current states of socio-economic and political arrangements. This system justification is hypothesized to provide people with three main categories of needs: Epistemic needs of seeking certainty and meaning; existential needs to manage threats and distress; and relational needs to maintain social relationships and attain a shared reality with others (Hennes et al., 2012). SJT predicts that reminders of epistemic, existential, and relational needs can elicit stronger preferences for system justifying ideologies and arrangements and stronger refusals of system- challenging ideologies and outcomes (Hennes et al., 2012). For instance, college students who were exposed to an uncertainty prime and scored higher on system justification were less likely to protest against the governmental bailout of Wall Street; and May Day protesters in Greece who were primed with a system-justifying stereotype exhibited less group-based anger and motivation to protest (Jost et al., 2012).

The key merit of SJT is that it points out the “default setup” of individuals’ buffering system — when threatened, everyone shifts to conservative ideologies by clinging to and endorsing the status quo, or the current layout of socio-economic and political arrangements and stratification of individual status (Jost & Banaji, 1994). Researchers

have provided empirical evidence to illustrate that not all ideologies are created equal. For instance, people's existential needs as measured by the death anxiety inventory (English version, Tomás-Sábado & Gómez-Benito, 2005; cited in Hennes et al., 2012) are significantly associated with system justification, which is (a) positively related to support for the Tea Party movement, which represents a conservative ideology of restoring America's "traditional values," and (b) negatively related to support for the Occupy Wall Street movement, which challenges the status quo (Hennes et al., 2012). Similarly, uncertainty avoidance (e.g., need for structure and order, intolerance for randomness and ambiguity) and mortality-related threat management (e.g., perceptions of a dangerous world, death avoidance, and death fear) independently contribute to political conservatism, rather than ideological extremism, as would be suggested by TMT (Jost et al., 2007). These effects of existential threats on endorsement of system-justification beliefs are mediated by opposition to equality (Jost et al., 2007).

SJT postulates that people are motivated to defend, support, and justify the current social and economic arrangements because doing so has soothing functions--justifying the system serves epistemic needs to attain certainty and meaning, existential needs to mitigate anxiety and distress, and relational needs to manage social relationships and maintain a shared reality with others in the system (Hennes et al., 2012). People's tendency to system-justify helps to explain why disadvantaged group members rarely resist the system and take actions for change despite the prevalence of inequity and injustice – the false belief that the current system is fair and legitimate can provide people with a sense of structure, order, and control, whereas revolutionary ideas might be

accompanied by fear and anxiety derived from uncertainty, randomness, chaos, and even death.

People primed with system justification beliefs tend to perceive inequality as acceptable and legitimate. For instance, disadvantaged group members primed with meritocracy (which is considered a prevalent American cultural view of how the current system functions by rewarding capability and hard-work; McCoy & Major, 2007) tend to justify their personal and group low-status by attributing their status to personal incompetence and expressing less discrimination; they also use stereotypes that are in line with system justification beliefs to describe themselves (McCoy & Major, 2007). Other manipulations of meritocracy-related system-justification beliefs such as “rags to riches” stories lead to decreased negative states (such as being less angry when learning about people who are suffering from injustice) and existential guilt (such as being less bothered when knowing that someone has made a special exception for the self) when processing information about injustice and inequality; dispositional and primed system-justification beliefs also lead to decreased intentions to help disadvantaged group members and redistribute social resources and these effects are mediated by decreased moral outrage (Wakslak, Jost, Tyler, & Chen, 2007).

System-justification is also associated with complementary stereotypes (e.g., men are agentic and women are communal [Jost & Kay, 2005]; poor but honest and rich but miserable [Kay & Jost, 2003]) that contribute to the endorsement of the status quo (Kay & Jost, 2003). These system-justifying complementary stereotypes are also usually associated with attitudes opposing equality and suppressing concerns for disadvantageous



groups. For instance, the need for system-justification boosts people's agreement with complementary stereotypes such as obese people are lazy but happy, and rich people are intelligent but unhappy (Kay, Jost, & Young, 2005); and exposure to complementary stereotypes such as poor people are honest and happy, and rich people are dishonest and unhappy increases people's system-justification beliefs (Kay & Jost, 2003). Whether these stereotypes are victim derogating (e.g., obese people are lazy) or victim enhancing (e.g., poor people are honest and happy), they contribute to the justification and endorsement of a hierarchical society, which suggests a tolerance of and internalization of inequality.

SJT may also help explain why women sometimes endorse beliefs that are disadvantageous for their perceived self-image (e.g., women are less competent than men) and actual self-interest (e.g., women's work deserves a lower wage and other types of entitlement; Jost, Banaji, & Nosek, 2004). In consonance with the theory, stereotyping and prejudicing are the "spontaneous" consent giving by all the social members forming a stratified socio-economic system (van der Toorn & Jost, 2014), which explains why sometimes non-dominant group members such as women tend to "consent" to inequality in the system.

### System Justification and Compensatory Control

According to the Compensatory Control Model (CCM; Kay, Gaucher, Napier, Callan, & Laurin, 2008), justifying the system can be viewed as a means of gaining control from an external source. CCM suggests that existential threats are usually associated with anxiety and distress elicited from a sense of lacking control, which is an

indicator of unpredictability and randomness in the social world (Kay et al., 2008). According to this view, when individuals' personal control is threatened, they tend to compensate by resorting to other viable sources (e.g., the system) to regain control. This compensating process, according to CCM, is the main mechanism people use to mitigate existential threats (Kay, Whitson, Gaucher, & Galinsky, 2009). Evidence supports this link between threats to personal control and endorsing the system. For instance, lowered personal control can increase beliefs in God (religious beliefs also serve the function of justifying the system and shaping the false consciousness that the system is fair and just [Jost & Banaji, 1994]) and government (Kay et al., 2008), which are both in line with system justification.

Similar to SJT, CCM also explains why social structures that are system-justifying versus those that are system-challenging are more prevalent and preferred even though these social structures may be disadvantageous for the self. For example, hierarchy versus equality may be supported and endorsed because it provides people with a sense that the social world is structured and under control, which helps to buffer the threats provoked by uncertainty and arbitrariness (Friesen, Kay, Eibach, & Galinsky, 2014). Research indicates that (a) people see hierarchy as more structured than equality; (b) when they feel threatened, people prefer hierarchy over equality regardless of whether their personal need for hierarchy is high or low; and (c) the preference for hierarchy after being threatened is not diminished even if choosing hierarchy leads to a lower social status and power (Friesen et al., 2014).

Although CCM supports SJT by suggesting that justifying the system helps people to regain control, it is important to note that CCM does not suggest that endorsing the system is the only way of (re)gaining control. This model emphasizes the interchangeability of different sources of control. When people's personal control is threatened, they can restore control at (a) the personal level such as perceiving superstition and conspiracy as more believable (when compared with those whose control is not threatened), or (b) an external level such as defending and endorsing current social institutes that denote control such as the government, or believing in a God who intervenes in people's daily lives (Kay et al., 2009). When people's external source of control is threatened, they can either resort to personal control such as agency and autonomy, or other viable external sources such as government control or supernatural control (Kay & Eibach, 2013). For instance, during the economic crisis in 2008, the Tea Party Movement was involved with at least three ideologies-- libertarianism, nationalism, and religious conservatism (Skocpol & Williamson, 2012). These three camps shared the same threat derived from the loss of control the U.S. economy was facing, but their distinctive extremism reflects different strategy of compensating control— the liberals emphasized personal control, the nationalists emphasized strong government, and the religious conservatives resorted to religious control (Kay & Eibach, 2013).

#### System-Justification and Internalization of Gender Inequality

Some argue that it is the patriarchal system that diminishes the role and potential of women, and hence view sexism as unidirectionally caused by men (Goldberg, 1993).

However, women's perceptions and choices may also potentially contribute to the gender-related status quo in which inequality exists.

Women tend to undervalue themselves and diminish their rights, and these processes are usually associated with system-justification beliefs. For instance, women who show dispositionally high endorsement of system justification beliefs tend to reward themselves less by reporting a lower level of pay entitlement when compared with women who are relatively low on system-justification beliefs (O'Brien, Major, & Gilbert, 2012); and benevolent sexism (which is in line with system-justification [Jost & Kay, 2005]) and its protective justifications tend to lead women to give up career opportunities that do not fit benevolent sexism and related protective justifications (e.g., "it is not safe for a woman"), such as practica and internships involving working with criminals, even if they were previously very interested in these opportunities (Moya, Glick, Lemus, & Hart, 2007).

System-justification related internalization of gender inequality is also represented by women's decreased sensitivity to the issue. For instance, system-justification associated beliefs such as social dominance (Sidanius & Pratto, 2001) and belief in a just world (Hunt, 2000) are correlated with women's increased ambivalence toward a female victim of gender-discrimination, and this effect was reversed among men (Jost & Burgess, 2000). When turned down from a job interview, women primed with system-justification beliefs were more likely to attribute the rejection to their internal traits such as low competence rather than gender discrimination, than women who were not primed with system-justification beliefs (McCoy & Major, 2007). Exposure to benevolent sexism

also decreases women's intentions to participate in collective action for gender equality, and this process is mediated by gender-specific system-justification (Becker & Wright, 2011). It seems that women may sometimes internalize sexism to discount their rights and this internalization is usually associated with attitudes on benevolent sexism (Glick & Fiske, 1996).

### Ambivalent Sexism

Sexism can be viewed as a nuanced type of prejudice, as women have been both revered and reviled across multiple cultures throughout history (Glick & Fiske, 1996). Prejudice is usually represented by social antipathy (Allport, 1954); sexism, however, can be represented by both hostile and benevolent feelings towards women (Glick & Fiske, 1996). This kind of multidimensional attitude with both hostility and positive feelings toward women has been termed as ambivalent sexism, which is comprised of hostile sexism and benevolent sexism (Glick & Fiske, 1996). Hostile sexism includes antagonistic attitudes toward women that fit the traditional conception of prejudice, such as beliefs that women are demanding special favors, over-complaining about being discriminated against, and trying to take control over men by endorsing feminism; whereas benevolent sexism is a set of chivalrous attitudes such as beliefs that women should be cared for and protected (Glick & Fiske, 1996). Although benevolent sexism may seem positive, it is also prejudice because it views women as incompetent and confines women to traditional roles (Glick & Fiske, 1996). Due to its positive tone, benevolent sexism is easier for women (and men) to accept and more prevalent than hostile sexism today (e.g., Bohner, Ahlborn, & Steiner, 2010; Lee, Fiske, & Glick, 2010).

For instance, although women in more sexist countries (e.g., China and Nigeria) are more likely to accept both hostile and benevolent sexism when compared with those in less sexist countries (e.g., England and Belgium), women in all countries tend to be less resistant to benevolent sexism than to hostile sexism (Glick & Fiske, 2001).

Despite its benevolence, benevolent sexism may subtly contribute to the justification of women's subordinate social status (Bohner et al., 2010). As Glick and Fiske (2011) described it, whereas hostile sexism is the stick that punishes women for behaving unconventionally, benevolent sexism works as the carrot to entice and reward them for behaving conventionally, which contributes to the maintenance of traditional gender arrangements. A cross-cultural study in 19 countries showed that both benevolent and hostile sexism were inversely associated with gender equality (Glick et al., 2000). A 16-nation study also indicated that both of the (opposite) components of ambivalent attitudes toward men (Glick et al., 2004; which are hostility [e.g., men abuse their power advantage] and benevolence toward men [e.g., men tend to sacrifice themselves to protect women in dangerous situations]) are strongly correlated with benevolent sexism (and hostile sexism) toward women, and they all negatively correlate with gender inequality, as these complementary gender attitudes and beliefs associate men with power and status and women with subordination (Glick et al., 2004). At the (female) individual level, benevolent sexism may contribute to women's subordinate social status by making them feel incompetent. For instance, exposure to benevolent sexism makes women (1) avoid tasks that do not fit conventional gender roles for women, such as long-distance-driving and working at a stressful environment (Moya et al., 2007); and (2) report more intrusive

thoughts and autobiographical memories of being incompetent (Dumont, Sarlet, & Dardenne, 2010).

The negative effects of benevolent sexism may be less noticeable than people realize because it is somewhat rewarding for women and less recognized as sexism (Glick & Fiske, 2001). Women may be tempted to accept benevolent sexism because of the benefits it seems to entail. As Glick and Fiske (2001) argued, “it promises that men’s power will be used to women’s advantage, if only they can secure a high-status male protector” (p. 111). The chivalrous attitude toward women that requires men’s giving and sacrifice is easily viewed as an entitlement for women (Glick & Fiske, 2001; 2011). The other reason that benevolent sexism can be insidious is that, whereas hostile sexism suggests explicit discrimination and hence would be easily identified as sexism, benevolent sexism is more restrained and refined. As a result, although benevolent sexism implicitly suggests women’s lack of abilities, it may not be characterized as sexism because of its benevolent “packaging” and hence it is easier for women (and men) to accept (Dardenne, Dumont, & Bollier, 2007). For instance, women (and men) find a source expressing benevolent sexism less prejudiced than one expressing hostile sexism, and are less angry at a benevolent sexist source (Barreto & Ellemers, 2005). When asked to rate their opinion on hostile and benevolent sexism, women who read items describing themselves and traditional subtypes (e.g., In a disaster, housewives/I ought to be rescued before men) tended to find benevolent sexism more favorable than hostile sexism and this effect was reversed when they were reading items describing feminists and career women (e.g., In a disaster, feminists/career women ought to be rescued before men; Becker,

2010). Benevolent sexism may be a protective means that women can apply to cope with existential threats.

#### Other Approaches for Understanding Benevolent Sexism

Other approaches/theories suggest different reasons for benevolent sexism, or even make different predictions for how women will respond to existential threats. For instance, Terror Management Theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986) suggests that humans' deepest existential anxiety derives from their undeniable death. It suggests that people respond to threats by enhancing their self-esteem, and that this process is usually carried out in a way that is supported by their personalized belief system (Hennes et al., 2012). According to TMT, when women who identify with cultural worldviews in line with gender egalitarianism are threatened, they should bolster their self-esteem by endorsing gender egalitarianism, rather than accepting system-justifying beliefs such as benevolent sexism.

On the other hand, an economic perspective would suggest that sexism is systemic not because women are engaging in this process for the existential needs sexism might be able to satisfy, but because the male-dominant system is restraining women's revenue by limiting their access to education and equal payment and advancement in the workplace (Goldberg, 1993). Other economic models such as Brines (1994)'s exchange model suggests that women take the traditional domestic role and do more housework in exchange for economic dependency. Based on these models, women in households are economically exchanging the acceptance of traditional gender roles with financial benefits from men, rather than compromising their rights because of existential threats.



The current study can contribute to the literature on sexism by presenting evidence that sexism can be associated with women's responses to existential threats, aside from economic deprivation and dependency.

### Present Study

Little research has tested whether existential threats will lead to either a boost in self-esteem by identifying with gender egalitarianism (among those women who perceive egalitarianism as their cultural worldview), in line with TMT; or an endorsement of traditional arrangements as denoted by benevolent sexism, in line with SJT. SJT can help explain why under some circumstances women may endorse benevolent sexism and traditional gender roles rather than gender-equality, but there is no previous research to my knowledge that has examined the relationship between existential threats and internalization of sexism using a system-justifying perspective.

I tested whether threatening women's control can lead to their acceptance of benevolent sexism and traditional gender-roles rather than gender-egalitarianism. I chose control threat because death and uncertainty threats have been tested in previous studies on system justification (e.g., Hennes et al., 2012; Jost et al., 2007). I used two manipulations from previous research on control threat. The first one was reading an essay about scientists' claim that the world is a random place and things happen in an unpredictable way (see Banfield, 2011); the second was writing an essay about a personal experience of undergoing a threatening event in which the participant has no control over what was happening (see Whitson & Galinsky, 2008). Prior studies have used only one manipulation. In this study, I combined the two because I want to induce a stronger

control threat. Reading essays about how the world is a random place elicits people's preference for hierarchy (Whitson & Galinsky, 2008); writing an essay about the experience of not having control can also lead people to interpret an ambiguous social interaction as more hierarchical (Whitson & Galinsky, 2008). These effects are in line with system-justification as perception of hierarchy and social dominance are positively correlated with system-justification beliefs (van der Toorn & Jost, 2014).

I considered gender-specific system-justification as the underlying process because, based on the theory, the current socio-political arrangements for men and women provide people with order, structure, and meaning. Evidence also suggests that existential threats are correlated with conservative ideology and movements rather than liberal ones (Hennes et al., 2012; Jost et al., 2007). Gender identity is considered a potential moderator because this study is about internalization of gender-based stereotypes and prejudice, so it is reasonable to assume that an identification with being a female is a prerequisite of the process. Previous research on gender-based stereotypes and prejudices has often found gender-identification to be a moderator of the relationship between stereotypes and their related negative outcomes (e.g. Kiefer & Sekaquaptewa, 2007; Schmader, 2002).

In the current study, I tested the effects of control threat on women's attitudes on benevolent sexism and traditional gender roles in two populations— students from Introduction to Psychology Participant Pool and community women from mTurk. I tested these two samples mainly because I was interested in whether there would be differences on the dependent measures due to women's different developmental stages and their

relevant effects on the constructs of the current study (e.g., control threat, benevolent sexism, and gender-specific system justification). When compared with community women, students may have different perceptions and understanding on relevant concepts such as sexism and existential threats. College is very different from the actual social system in which social issues such as sexism are more salient because sexism is usually presented with measurable social welfare such as salary and advancement in the workplace (Ellemers & Barreto, 2009), or domestic roles in a marriage (Brines, 1994). College women are also often still supported by their parents, which may make them view existential threats and gender issues differently from women who are more independent. Another advantage of having a student sample is that I could have more control over the procedure of the study because participants completed the study in the lab; a disadvantage of the student sample is that the majority of students at University of Northern Iowa are White, which means a lack of ethnic diversity. On the other hand, mTurk samples tend to be more ethnically diverse than student samples (Buhrmester, Kwang, & Gosling, 2011).

Based on SJT, I hypothesized that (1) female participants whose control was threatened would score higher on benevolent sexism and traditional gender-roles; (2) these effects would be mediated by gender-specific system-justification; and (3) these effects would be moderated by gender identification.

## CHAPTER 2

### METHOD

#### Design

This is a two-group posttest-only randomized experiment. The independent variable is control threat versus control and the dependent variables are attitudes on (1) traditional gender roles, and (2) benevolent sexism. I also measured gender-specific system justification and gender-identification for women to examine mediating and moderating effects.

#### Participants

Based on Cohen (1988), a medium effect size requires 64 participants in each condition when power is estimated as .80; and a small effect requires 393 participants in each condition. Previous studies on system justification have not provided a consistent measure of effect size, but the two manipulations I used in the current study have yielded a mean effect size of  $d \approx .40$ , which is medium (see Banfield, 2011; Whitson & Galinsky, 2008). This medium effect size would suggest a sample size of 128 for the current study. Simmons, Nelson, and Simonsohn (2011) suggested at least 50 participants in each condition to reach the power of .80, which would suggest that 100 participants is sufficient for the present study.

Table 1. Information on Participants

	Student ( <i>n</i> =139)	mTurk ( <i>n</i> =160)
Age	<i>M</i> =18.80, <i>SD</i> =1.36	<i>M</i> =36.60, <i>SD</i> =12.73
Ethnicity(Caucasian)	94%	82%
Ethnicity(Hispanic)	2%	5%
Ethnicity(African American)	5.6%	5%
Ethnicity(Asian)	1.4%	4%
Ethnicity(Native Americans)	0	1.5%
Political orientation (Liberal)	26%	40%
Political orientation (Moderate)	31%	31%
Political orientation (Conservative)	14%	20%
Political orientation (Others/unknown)	28%	2%
Religiosity(from 1 to 7)	<i>M</i> = 4.37, <i>SE</i> = .16	<i>M</i> = 3.33, <i>SE</i> = .18,

One hundred and thirty-nine female college students were recruited from the Introduction to Psychology participant pool, and 160 female participants participated via Amazon Mechanical Turk (mTurk; Table 1). The total number of participants does not include three college students and two mTurk participants who did not write anything for the manipulation essay, and two college students who were younger than 18; those seven people's data were deleted after data collection. Participants in both samples were primarily Caucasian, although there was greater ethnic diversity in the mTurk sample (Table 1). College students indicated a moderate level of religiosity ( $M = 4.37, SE = .16,$

95% CI [4.05, 4.69]) on the scale of 1 (*not at all religious*) to 7 (*very religious*), whereas mTurk users showed a lower level of religiosity ( $M = 3.33$ ,  $SE = .18$ , 95% CI [2.97, 3.69]) on the same scale,  $t(297) = 4.27$ ,  $p < .001$ ,  $d = .50$ ). For political orientation, in the student sample, 37 (26%) identified themselves as liberal, 44 (31%) as moderate, 20 (14%) as conservative, and 39 (28%) as others/ do not know; in the mTurk sample, 68 (40%) identified themselves as liberal, 53 (31%) as moderate, 35 (20%) as conservative, and 4 (2%) as others/ do not know. Participants' political orientation is significantly associated with which sample they belong to,  $X^2(8, N = 299) = 345.04$ ,  $p < .001$ .

Participants were told that the study was about scientific opinions and personal experience. College students were given course credit, whereas mTurk users were paid 50 cents for participating in the study.

#### Procedure

Participants completed the experiment online via Qualtrics. College students participated in university computer labs with a male experimenter, whereas Turkers completed the study on their personal computers on their own time. After participants read the consent form (see Appendices A and B) and voluntarily agreed to participate, they completed demographic questions (Appendix C).

After the demographics, participants completed four items modified from the identity subscale of Luhtanen and Crocker's (1992) Collective Self-Esteem Scale (CSES; Appendix D) to measure their identification with being a woman (see Bosson, Pinel, & Vandello, 2010). They also completed the item *Is it important for the United States to have more female politicians (from 1 =not at all to 5 =definitely)?* and three items taken

from the Patriarchal Beliefs Scale (Yoon et al., 2015) as a measure of pre-existing egalitarian beliefs. In order to avoid arousing suspicion about this study, I masked these questions by including them with three items from the Rosenberg Self-esteem Scale (Rosenberg, 1965) and four items from the Right-Wing Authoritarianism Scale (Altemeyer, 1998) .

Then the program randomly assigned them to either the control-threat condition or non-threat condition. Participants in the experimental control-threat condition read an article from a previous study (Banfield, 2011) about the world being a random place and how people have no control over their lives (Appendix E) and wrote an essay following instructions adapted from Whitson and Galinsky (2008):

As the passage you just read suggests, there are things in life that could happen and people have no control over them. Please think of something threatening, bad, or uncertain that is happening to you where you may feel like you do not have any control over the situation. Please describe the situation and how you feel below.

Participants in the non-experimental non-threat condition read an article about having control in their lives (Banfield, 2011; Appendix F) and wrote an essay following instructions adapted from Whitson and Galinsky (2008):

As the passage you just read suggests, there are things in life that could happen but people have control over them. Please think of something threatening, bad, or uncertain that is happening to you where you may feel like you are in complete control of the situation. Please describe the situation and how you feel below.

The page on which the essay was to be written remained for 5 minutes before the “next” button appeared. After writing the essay, participants completed the short form of the Positive and Negative Affect Scale (PANAS; Mackinnon et al., 1999, Appendix G)

with the manipulation check item “in control” embedded within it, author-generated questions about family versus career orientation (Appendix H), the Ambivalent Sexism Scale (ASS; Glick & Fiske, 1996, Appendix I), and the Gender-specific System Justification Questionnaire (GSJQ; Jost & Kay 2005, Appendix J). The order of author-generated questions, Ambivalent Sexism Scale, and the Gender-specific System Justification questionnaires was randomized.

Participants received the debriefing page (Appendix K) after they finished the study. They were informed that the passage about how people do/do not have control over their life was made up for the purposes of the study. They were also asked to list items they feel they did have control over, as a means to relieve any feelings of not having control elicited from the study.

### Measurements

**Demographics (Appendix C).** Participants answered items assessing gender, age, ethnicity, and political and religious orientation. College students also answered a question about their major.

### Measures

**Demographics (Appendix C).** Participants answered items assessing gender, age, ethnicity, and political and religious orientation. College students also answered a question about their major.

**Gender identification (Appendix D).** This scale has four items modified from the Collective Self-esteem Scale (CSES; Luhtanen & Crocker, 1992) by having “woman” as the subject of the statements to assess women’s gender identification (e.g., “Being a



woman is an important part of my self-image). Participants rated these statements on the same 5-point scale (from 1= *strongly agree* to 5 = *strongly disagree*) as in the original scale. Bosson, Pinel, and Vandello (2010) reported an internal consistency of  $\alpha=.65$  on the woman-specific scale. The original CSES is correlated with Ego Task Orientation and Ego Task Esteem scales (Breckler, Greenwald, & Wiggins, 1986), suggesting convergent validity with group-identification and group-esteem.

In the current study, the internal consistencies were initially low in both samples ( $\alpha = .51$  in student sample and  $\alpha = .09$  in mTurk sample). To reach an acceptable alpha, I deleted the two reverse-coded items to reach a Cronbach's  $\alpha$  of .87 in the student sample and .84 in the mTurk sample, even though three to five items per latent variable are preferred (Kenny, 1979).

**Pre-existing egalitarianism (Appendix D).** This measure has three items randomly chosen from the Patriarchal Beliefs Scale (e.g., “I am more comfortable with men running big corporations than with women running them” [reverse-coded]; Yoon et al., 2015) and one author-generated item *Is it important for the United States to have more female politicians (from 1 =not at all to 5 =definitely)?* to assess participants' pre-existing egalitarian beliefs. Participants rated items from the Patriarchal Beliefs Scale on a 5-point scale (from 1= *strongly disagree* to 5 = *strongly agree*). Items supporting patriarchal beliefs were reverse-coded, and a higher overall score indicates a stronger egalitarian belief.

In the current study, the internal consistency in the student sample was  $\alpha = .68$  after deleting one item; in the mTurk sample, the internal consistency was  $\alpha = .75$  with all items.

**Short form of Positive and Negative Affect Scale (Appendix G).** This is a 10-item scale measuring positive (PA) and negative affect (NA). Participants rate each item (e.g., Upset, Ashamed) on a 5-point scale (from 1 = *not at all* to 5 = *extremely*). Analysis of convergent validity indicated that the PA subscale correlates positively with both Diener's (1984) five-item measure of subjective well-being (SWB) and Lyubomirsky and Lepper's (1999) four-item subjective happiness scale; moreover, the NA subscale negatively correlates with both the SWB and happiness scales (Thompson, 2007). Cronbach's alpha was .78 for the Positive Affect scale and .87 for the Negative Affect subscale (Mackinnon et al., 1999).

The internal consistency coefficients for the NA subscale in this study were .77 in the student sample and .83 in the mTurk sample; for the PA subscale, the internal consistency was  $\alpha = .77$  in the student sample and  $\alpha = .85$  in the mTurk sample.

**Manipulation Check.** The manipulation check item "in control" was embedded in this scale.

**Author-generated Scale (Appendix H).** This author-generated scale has 10 items assessing attitudes on traditional gender roles. These items were generated by author and pretested within a research team for understandability and likelihood of ceiling/floor effects. Sample items are "Which one is more important for you, pursuing a career or having a family?" and "For your first formal job, how much salary per year do you think

it is reasonable and satisfactory?” Participants rated each item on a 9-point scale (from 1 = *strongly disagree* to 9 = *strongly agree*).

The internal consistency in the student sample was too low to make a scale ( $\alpha = .51$ ), so they were used as single items in the analyses. In the mTurk sample, the internal consistency was acceptable ( $\alpha = .72$ ) after deleting the item *how long do you think maternity leave should be?* (from 1 = *one week* to 9 = *one year*).

**Ambivalent Sexism Inventory (ASI, Appendix I).** This inventory has two subscales — the Hostile Sexism Scale and Benevolent Sexism Scale—each with 11 items. The items on the Benevolent Sexism Scale relate to three components of benevolent sexism—“protective paternalism,” “complementary gender differentiation,” and “heterosexual intimacy” (Glick & Fiske, 1996, p. 496). Sample items from the Benevolent Sexism Scale are “Every man ought to have a woman whom he adores.” and “Women should be cherished and protected by men.”

Hostile Sexism Scale taps into three categories of hostile sexism—“dominative paternalism,” “competitive gender differentiation,” and “heterosexual hostility” (Glick & Fiske, 1996, p. 496). Sample items from the Hostile Sexism Scale are “Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for equality.” and “Most women fail to appreciate fully all that men do for them.” Participants rate each item on a 6-point scale (from 0 = *strongly disagree* to 5 = *strongly agree*). Across six studies, the internal consistency of this scale ranged from  $\alpha = .73$  to  $\alpha = .85$ ; the ASI is positively correlated with the Modern Sexism Scale (Swim, Aikin, Hall, & Hunter, 1995), which suggests convergent validity.

The internal consistency coefficients for the benevolent sexism subscale were .75 in the student sample and .87 in the mTurk sample; for the hostile sexism subscale, the internal consistencies were  $\alpha = .86$  in the student sample and  $\alpha = .90$  in the mTurk sample.

**Gender-Specific System-Justification Questionnaire (GSJQ, Appendix J).** This questionnaire contains eight opinion statements about the current state of gender relations and division of labor in the society. Items were adapted by Jost and Kay (2005) from original system justification items designed by Kay and Jost (2003) by emphasizing women's place in the social system (e.g., "In general, relations between men and women are fair" "For women, the United States is the best country in the world to live in"). Participants indicate the strength of agreement or disagreement with each of these items on a 9-point scale (from 1= *strongly disagree* to 9 = *strongly agree*). For the original questionnaire, analysis of convergent validity indicated that scores on the system justification scale reliably predicted scores on scales measuring similar constructs, such as the need for "balance" questionnaire (Kay & Jost, 2003), and Belief in a Just World Scale (Lipikus, 1991). The reliability of the original questionnaire was  $\alpha = .87$  (Kay & Jost, 2003). The reliability of the gender-specific questionnaire was  $\alpha = .65$  (Jost & Kay, 2005).

The internal consistency coefficients of the GSJQ in current study were .69 in the student sample and .76 in the mTurk sample.

## CHAPTER 3

### RESULTS

I ran the analyses on the two samples separately due to their differences on age, religiosity, and compositions of ethnicity and political orientation.

#### Pre-existing Attitudes on Egalitarianism

##### Student Sample

Participants in both conditions reported relatively egalitarian attitudes, and there was no pre-manipulation difference ( $M= 3.72$ ,  $SE= .09$ ,  $95\% CI [3.54, 3.90]$  in the non-threat comparison condition; and  $M= 3.71$ ,  $SE= .08$ ,  $95\% CI [3.55, 3.87]$  in the experimental control-threat condition) between conditions,  $t(137) = .09$ ,  $p= .93$ , suggesting that participants in the two conditions had similar egalitarian attitudes on gender issues before the manipulations.

##### mTurk Sample

Participants in both conditions reported relatively egalitarian attitudes, and there was no pre-manipulation difference ( $M= 4.11$ ,  $SE= .08$ ,  $95\% CI [3.95, 4.27]$  in the non-threat comparison condition; and  $M= 3.97$ ,  $SE= .09$ ,  $95\% CI [3.79, 4.15]$  in the experimental control-threat condition) between conditions,  $t(158) = 1.16$ ,  $p= .25$ , suggesting that participants in the two conditions had similar egalitarian attitudes on gender issues before the manipulations.

### Manipulation Check

#### Student Sample

Participants who were assigned to the control-threat condition reported a lower score on the item “in control” ( $M = 3.06$ ,  $SE = .14$ ,  $95\% CI [2.80, 3.33]$ ) than those who were in the comparison condition ( $M = 3.61$ ,  $SE = .10$ ,  $95\% CI [3.41, 3.81]$ ),  $t(137) = 3.20$ ,  $p = .002$ ,  $d = .53$ , suggesting that the manipulation was effective.

#### mTurk Sample

Participants in the control-threat condition also scored lower on the manipulation check question ( $M = 2.75$ ,  $SE = .14$ ,  $95\% CI [2.48, 3.02]$ ) than those who were in the comparison condition ( $M = 3.41$ ,  $SE = .14$ ,  $95\% CI [3.13, 3.68]$ ),  $t(157) = 3.39$ ,  $p = .001$ ,  $d = .54$ , suggesting that the manipulation was effective.

### Mood

#### Student Sample

There was no significant difference in participants’ positive mood between the two conditions ( $M = 2.90$ ,  $SE = .09$ ,  $95\% CI [2.72, 3.08]$  in control-threat condition and  $M = 3.10$ ,  $SE = .10$ ,  $95\% CI [2.90, 3.30]$  in comparison condition,  $t[137] = 1.60$ ,  $p = .11$ ,  $d = .28$ ); but participants in the control-threat condition ( $M = 1.91$ ,  $SE = .08$ ,  $95\% CI [1.75, 2.07]$ ) reported a significantly higher level of negative mood than participants in the comparison condition ( $M = 1.49$ ,  $SE = .08$ ,  $95\% CI [1.33, 1.63]$ ),  $t(137) = 3.88$ ,  $p = .001$ ,  $d = .66$ .

### mTurk Sample

Similar to the student sample, there was no significant difference in participants' positive mood between the two conditions ( $M = 3.10$ ,  $SE = .11$ ,  $95\% CI [2.88, 3.32]$  in control-threat condition and  $M = 3.30$ ,  $SE = .11$ ,  $95\% CI [3.08, 3.52]$  in comparison condition,  $t[157] = 1.44$ ,  $p = .15$ ,  $d = .23$ ); but participants in the control-threat condition ( $M = 1.98$ ,  $SE = .10$ ,  $95\% CI [1.79, 2.18]$ ) reported a significantly higher level of negative mood than participants in the comparison condition ( $M = 1.58$ ,  $SE = .07$ ,  $95\% CI [1.43, 1.73]$ ),  $t(157) = 3.20$ ,  $p = .002$ ,  $d = .60$ .

### Correlations among the Independent Variable and Other Measures

#### Student Sample

As can be seen from Tables 2 and 3, although students who scored higher on system-justification also scored higher on hostile sexism, benevolent sexism, and author-generated items measuring attitude on traditional gender roles, control threat was not significantly correlated with any of the dependent measures.

As can be seen from Table 3, students who had greater gender-identification also scored higher on benevolent sexism. Those with a higher pre-existing attitude on egalitarianism scored lower on system-justification, benevolent sexism, hostile sexism, conservative political orientation, and religiosity. Participants who indicated a higher level of religiosity also reported more system-justification, hostile sexism, benevolent sexism, and conservative political orientation.

Table 2. Correlations among Control-Threat, System-Justification, and Dependent Measures

	CT	SJ	HS	BS	AG1	AG2	AG3	AG4	AG5	AG6	AG7	AG8	AG9	AG10
CT	.04													
SJ	.06	.08												
HS	.05	.37**	.07											
BS	.23**	.54**	.25**	.07										
AG1	.05	.17*	.07	.13	.10									
AG2	.14	.11	.20*	.17*	.13	-.08								
AG3	.08	.33**	.39**	.59**	.52**	.19*	.06							
AG4	.12	.36**	.39**	.33**	.24**	.36**	.22**							
AG5	.21**	.10	.22**	.17*	.20*	.45**	.38**	.26**						
AG6	-.05	-.43**	-.31**	-.19*	-.05	-.05	-.15	-.10	.02					
AG7	.13	.51**	.56**	.56**	.19*	.22**	.49**	.38**	.25**	-.33**				
AG8	.08	.29**	.28**	.32**	.22**	.22**	.29**	.23**	.14	-.03	.41**			
AG9	-	-	-	-	-	-	-	-	-	-	-	-	-	-.23

\* $p < .05$ , \*\* $p < .01$ Data above the diagonal are from the student sample ( $n=138-140$ ) and those below the diagonal are from the mTurk sample ( $n=157-160$ )

CT= Control threat, SJ= System justification, HS= Hostile sexism, BS= Benevolent sexism, AG= Author-generated items.

AG1= Which one is more important for you, pursuing a career or having a family? (from 1= pursuing a career to 9= having a family)

AG2= Who should do more of the household chores in a family? (from 1=the husband to 9= the wife)

AG3= I believe the most important contribution a woman makes is as a mother. (from 1= strongly disagree to 9= strongly agree)

AG4= A man should make more money than a woman. (from 1= strongly disagree to 9= strongly agree)

AG5= Who should spend more effort on raising children in a family? (from 1= the husband to 9= the wife)

AG6= How long do you think maternity leave should be? (from 1= one week to 9= one year)

AG7= It is better for a woman to take her husband's last name? (from 1= strongly disagree to 5= strongly agree)

AG8= Do you think a man should be a provider or caregiver? (from 1= provider to 9= caregiver)

AG9= For your first formal job, how much salary per year do you think it is reasonable and satisfactory? (from 1=25,000 to 9= above 65,000)

AG10= For your first formal job, how long should it take to until you receive your first promotion? (from 1= within three months to 9= seven years)

(AG9 and AG10 are not in the survey for mTurk sample)



### mTurk Sample

Similar positive correlations among system justification, hostile sexism, benevolent sexism, and author-generated items were found in the mTurk sample. Control threat was positively correlated with the author-generated item “*Who should spend more effort on raising children in a family?*” and benevolent sexism (Table 2).

As can be seen from Table 3, participants who indicated greater gender-identification also (1) indicated a more positive attitude on benevolent sexism, (2) were more religious and conservative, and (3) scored higher on the combined author-generated items assessing attitude on traditional gender roles.

Participants with a higher pre-existing attitudes on egalitarianism scored lower on system-justification, benevolent sexism, hostile sexism, the author-generated scale, and religiosity (Table 3). Similar to the student sample, religiosity was positively associated with system-justification, hostile sexism, benevolent sexism, gender-identification, and conservative political orientation, and negatively correlated with pre-existing attitudes on gender equality (Table 3).

Table 3. Correlations among the Independent Variable and Other Measures

	CT	SJ	HS	BS	GI	PE	RE	NM	CPO
CT		.04	.08	.07	.02	.01	-.14	.31**	.04
SJ	.06		.37**	.25**	-.09	-.38**	.27**	-.01	.25*
HS	.05	.54**		.52**	-.01	-.56**	.30**	-.07	.35**
BS	.23**	.34**	.52**		.18*	-.37**	.44**	-.01	.31**
GI	.02	-.02	.11	.36**		-.11	.15	-.02	.16
PE	.09	-.44**	-.62**	-.46**	-.10		-.19*	.17*	-.32**
RE	.04	.32**	.32**	.40**	.21**	-.21**		-.01	.39**
NM	.25**	-.19*	-.12	-.11	-.13	.10	-.17*		-.09
CPO	.16*	.40**	.47**	.47**	.19*	-.38**	.50**	-.09	
AG	.13	.46**	.48**	.56**	.31**	-.51**	.37**	-.27**	.40**

\* $p < .05$ , \*\* $p < .01$

Data above the diagonal are from the student sample ( $n= 138-140$ ) and those below the diagonal are from the mTurk sample ( $n=157-160$ ); for political orientation (1= liberal, 2= moderate, 3= conservative, 4= others/unknown), the data do not include participants who responded with "others/unknown" ( $n=101$  for student sample and  $n=156$  for mTurk sample)

CT= Control threat, SJ= System justification, HS= Hostile sexism, BS= Benevolent sexism, GI= Gender identification, PE= pre-existing attitude on gender equality, RE= Religiosity,

NM= Negative mood, AG= Combined author-generated items, CPO= Conservative political orientation

Scores on the combined scale of author-generated items were positively associated with gender-identification, attitudes on system-justification, benevolent and hostile sexism, and religiosity, and negatively associated with pre-existing attitudes on egalitarianism (Table 3).

## Main Analyses

### Student Sample

An ANCOVA (with pre-existing attitude on egalitarianism as the covariate) indicated that participants in the control-threat condition ( $M = 2.23$ ,  $SE = .08$ , 95%  $CI$  [2.08, 2.39]) did not score significantly higher on benevolent sexism scale than those in the comparison condition ( $M = 2.13$ ,  $SE = .08$ , 95%  $CI$  [1.98, 2.29]) after controlling for initial attitudes on egalitarianism ( $F [1, 138] = .82$ ,  $p = .37$ ,  $\eta^2 = .006$ ).

ANCOVAs (with pre-existing attitude on egalitarianism as the covariate) indicated that participants in the control-threat condition also did not score higher on any of the author-generated items (Table 4).

To test the moderation effects of gender identification, I first centered scores on the moderating variable (gender identification questionnaire). The independent variable (control-threat or not) was coded as 1 (control threat condition) and -1 (non-threat condition). Then I created an interaction variable of the independent variable (control-threat) and gender identification by multiplying these two variables. In the first step of the regression model, the independent variable (control threat) and the moderator (gender identification) were entered; and in the second step, the interaction variable was added. As can be seen from Table 5, although gender identification had significant effects on benevolent sexism and the item on women's role of family versus career, there was no significant interaction effect on any of the dependent measures. Control threat was not significantly correlated with system-justification, so I did not conduct the mediation analysis.

Table 4. ANCOVAs on Dependent Measures (Student Sample)

	Mean/SD(CT)	Mean/SD(NCT)	<i>F</i>	<i>p</i>	$\eta^2$
Benevolent sexism	2.23/.74	2.13/.65	.82	.37	.006
1. Career vs family	5.91/1.19	5.53/1.21	1.26	.26	.009
2. Household chores	5.31/.79	5.48/1.11	1.14	.29	.008
3. Being a mother	5.57/2.23	5.28/2.42	.55	.46	.004
4. Men make more money	2.78/1.76	2.80/1.91	.009	.93	<.001
5. Raising children	5.29/.80	5.20/.78	.38	.54	.003
6. Maternity leave	4.92/1.69	5.00/1.78	.08	.78	.001
7. Taking husband's name	6.25/1.65	6.35/1.98	.07	.79	.001
8. Men as providers	5.24/1.11	5.32/1.12	.18	.67	.001
9. First job salary	5.10/2.11	5.39/1.93	.74	.39	.003
10. Time before promotion	4.37/1.22	4.07/1.17	2.17	.14	.02

Note: Means are adjusted means (adjusted for pre-test attitudes), CT= Control-threat condition, NCT= Non control-threat condition

1= Which one is more important for you, pursuing a career or having a family?

2= Who should do more of the household chores in a family?

3= I believe the most important contribution a woman makes is as a mother.

4= A man should make more money than a woman.

5= Who should spend more effort on raising children in a family?

6= How long do you think maternity leave should be?

7= It is better for a woman to take her husband's last name?

8= Do you think a man should be a provider or caregiver?

9= For your first formal job, how much salary per year do you think it is reasonable and satisfactory? (from 1=25,000 to 9= above 65,000)

10= For your first formal job, how long should it take to until you receive your first promotion?

### mTurk Sample

For the mTurk sample, an ANCOVA (with pre-existing attitude on egalitarianism as the covariate) indicated that participants in the control-threat condition ( $M = 2.18$ ,  $SE = .10$ ,  $95\% CI [1.99, 2.38]$ ) scored significantly higher on benevolent sexism scale than those in the comparison condition ( $M = 1.80$ ,  $SE = .10$ ,  $95\% CI [1.61, 2.00]$ ) after controlling for initial attitude on egalitarianism ( $F [1, 157] = 7.62$ ,  $p = .008$ ,  $\eta^2 = .04$ ), supporting my hypothesis that when women's control is threatened, they will endorse benevolent sexism.

Table 5. Moderation Effects of Gender Identification (Student Sample)

	CT		GI		(Step 1)			CT x GI (Step 2)			
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$R^2$	$F(2,137)$	<i>p</i>	$\beta$	$\Delta R^2$	$F(1,136)$	<i>p</i>
Benevolent sexism	.54	.40	.13	<b>.04</b>	.04	2.59	.08	.02	.001	.19	.66
1. Career vs family	.18	.28	.44	<b>.01</b>	.05	3.87	.02	.25	.01	2.01	.15
2. Household chores	-.08	.30	.11	.16	.02	1.51	.22	.03	.001	.12	.73
3. Being a mother	.15	.47	.16	.43	.008	.58	.56	.16	.005	.62	.43
4. Make money	.002	.99	.17	.27	.01	.62	.54	.10	.003	.37	.54
5. Raising children	.04	.56	.12	.08	.03	1.76	.18	.005	.001	.005	.94
6. Maternity leave	-.04	.78	-.10	.51	.004	.26	.76	.25	.024	3.05	.07
7. Husband's name	-.04	.81	-.02	.92	.001	.035	.97	-.06	.001	.16	.70
8. Men as providers	-.04	.68	.08	.43	.006	.39	.67	.02	.001	.05	.82
9. First job salary	-.15	.40	-.04	.84	.006	.09	.69	.16	.006	.88	.35
10. Promotion	.15	.14	-.12	.25	.03	1.78	.17	-.07	.003	.47	.50

Note:  $\beta$ = Unstandardized coefficients, CT= Control-threat, GI= Gender Identification

1= Which one is more important for you, pursuing a career or having a family?

2= Who should do more of the household chores in a family?

3= I believe the most important contribution a woman makes is as a mother.

4= A man should make more money than a woman.

5= Who should spend more effort on raising children in a family?

6= How long do you think maternity leave should be?

7= It is better for a woman to take her husband's last name?

8= Do you think a man should be a provider or caregiver?

9= For your first formal job, how much salary per year do you think it is reasonable and satisfactory? (from 1=25,000 to 9= above 65,000)

10= For your first formal job, how long should it take to until you receive your first promotion?

For the dependent measure of attitude on traditional gender roles assessed by the author-generated scale, an ANCOVA (with pre-existing attitude on egalitarianism as the

covariate) indicated that participants in the control-threat condition ( $M = 5.16$ ,  $SE = .12$ ,  $95\% CI [4.92, 5.39]$ ) did not score significantly higher on the scale than those in the comparison condition ( $M = 4.94$ ,  $SE = .12$ ,  $95\% CI [4.70, 5.18]$ ) after controlling for initial attitude on egalitarianism ( $F [1, 157] = 1.61$ ,  $p = .21$ ,  $\eta^2 = .01$ )

For the hypothesized moderating effect of gender-identification on the dependent measures, gender identification ( $\beta = .38$ ,  $p < .001$ ) had a significant effect on scores on the author generated scale (in step one),  $F (2, 157) = 10.00$ ,  $p < .001$ ,  $R^2 = .11$ ; but there was no significant interaction effect (in step two),  $\Delta R^2 < .001$ ,  $F (1, 156) = .008$ ,  $p = .93$  (Table 6). For benevolent sexism, both control-threat ( $\beta = .22$ ,  $p = .003$ ) and gender identification ( $\beta = .35$ ,  $p < .001$ ) had a significant effect on scores on benevolent sexism (in step one),  $F (2, 157) = 16.79$ ,  $p < .001$ ,  $R^2 = .18$ ; but there was no significant interaction effect (in step two),  $\Delta R^2 = .001$ ,  $F (1, 156) = .15$ ,  $p = .70$  (Table 6). Gender-identification was not a significant moderator of the relationship between control-threat and the dependent measures.

I hypothesized that the main effects of control-threat would be mediated by beliefs in system-justification. Because control-threat condition was not significantly correlated with system-justification (in either sample), I did not conduct the mediation analysis.

Table 6. Moderation Effects of Gender Identification (mTurk Sample)

	CT		GI		(Step 1)			CT x GI (Step 2)			
	$\beta$	$p$	$\beta$	$p$	$R^2$	$F(2,157)$	$p$	$\beta$	$\Delta R^2$	$F(1,156)$	$p$
Traditional roles	.16	.09	.38	<.001	.11	10.00	<.001	-.01	<.001	.008	.93
Benevolent sexism	.22	.003	.36	<.001	.18	16.79	<.001	.03	.001	.15	.70

Note:  $\beta$ = Unstandardized coefficients, CT= Control-threat, GI= Gender Identification

### Exploratory Analyses

#### Student Sample

I proceeded to explore the possible moderating effects of religiosity and (conservative) political orientation on the relationship between the independent and dependent variables. As can be seen from Table 7 and Table 8, although religiosity and (conservative) political orientation had some significant effects on some of dependent measures, there was no significant interaction effect on any of the dependent measures.



Table 7. Moderation Effects of Religiosity (Student Sample)

	CT		RE		(Step 1)			CT x RE (Step 2)			
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$R^2$	$F(2,137)$	<i>p</i>	$\beta$	$\Delta R^2$	$F(1,136)$	<i>p</i>
Benevolent sexism	.13	.08	.45	<b>.001</b>	.21	17.8	.001	.09	.008	1.4	.24
1. Career vs family	.26	.14	.47	<b>.008</b>	.06	4.23	.02	-.1	.003	.38	.54
2. Household chores	-.06	.48	.19	<b>.02</b>	.05	3.25	.04	.08	.007	1.02	.32
3. Being a mother	.24	.22	.69	<b>.001</b>	.09	6.59	.002	.25	.01	1.72	.19
4. Make money	.03	.84	.28	.07	.02	1.64	.20	.29	.02	3.38	.07
5. Raising children	.06	.39	.13	.06	.03	1.95	.15	.13	.03	3.57	.06
6. Maternity leave	-.05	.71	.08	.61	.003	.18	.84	.08	.002	.30	.58
7. Husband's name	.01	.95	.37	<b>.02</b>	.04	2.95	.06	.21	.01	1.88	.17
8. Men as providers	-.01	.89	.19	<b>.05</b>	.03	2.03	.14	-.08	.005	.63	.43
9. First job salary	-.14	.42	.03	.88	.005	.37	.69	-.1	.002	.30	.58
10. Promotion	.13	.19	.12	.24	.03	1.80	.17	.20	.03	3.76	.06

Note:  $\beta$ = Unstandardized coefficients, CT= Control-threat, RE= Religiosity

1= Which one is more important for you, pursuing a career or having a family?

2= Who should do more of the household chores in a family?

3= I believe the most important contribution a woman makes is as a mother.

4= A man should make more money than a woman.

5= Who should spend more effort on raising children in a family?

6= How long do you think maternity leave should be?

7= It is better for a woman to take her husband's last name?

8= Do you think a man should be a provider or caregiver?

9= For your first formal job, how much salary per year do you think it is reasonable and satisfactory? (from 1=25,000 to 9= above 65,000)

10= For your first formal job, how long should it take to until you receive your first promotion?

Table 8. Moderation Effects of (Conservative) Political Orientation (Student Sample)

	CT		CPO		(Step 1)			CT x CPO (Step 2)			
	$\beta$	<i>p</i>	$\beta$	<i>p</i>	$R^2$	$F(2,97)$	<i>p</i>	$\beta$	$\Delta R^2$	$F(1,96)$	<i>p</i>
Benevolent sexism	.12	.18	.47	<b>.002</b>	.12	6.31	.003	.01	.001	.006	.94
1. Career vs family	.27	.19	.47	.15	.04	1.98	.14	-.52	.02	2.60	.11
2. Household chores	-.03	.80	.28	.07	.03	1.72	.19	-.21	.02	1.90	.17
3. Being a mother	.3	.20	1.25	<b>.001</b>	.13	7.31	.001	.07	.001	.04	.84
4. Make more money	.17	.34	.41	.15	.03	1.57	.21	-.18	.004	.38	.54
5. Raising children	.16	<b>.01</b>	.02	.84	.07	3.53	.03	.001	.001	.001	.99
6. Maternity leave	.14	.44	-.39	.17	.03	1.24	.29	.28	.01	1.01	.32
7. Husband's name	-.10	.59	.89	<b>.002</b>	.08	5.31	.006	-.16	.003	.31	.58
8. Men as providers	-.02	.88	.38	<b>.04</b>	.05	2.30	.11	-.02	.001	.02	.90
9. First job salary	-.16	.45	-.22	.50	.01	.54	.59	-.02	.001	.003	.96
10. Promotion	.14	.24	-.07	.73	.02	.74	.48	-.13	.004	.44	.51

Note:  $\beta$ = Unstandardized coefficients, CP= Control-threat, CPO= Conservative political orientation

1= Which one is more important for you, pursuing a career or having a family?

2= Who should do more of the household chores in a family?

3= I believe the most important contribution a woman makes is as a mother.

4= A man should make more money than a woman.

5= Who should spend more effort on raising children in a family?

6= How long do you think maternity leave should be?

7= It is better for a woman to take her husband's last name?

8= Do you think a man should be a provider or caregiver?

9= For your first formal job, how much salary per year do you think it is reasonable and satisfactory? (from 1=25,000 to 9= above 65,000)

10= For your first formal job, how long should it take to until you receive your first promotion?

### mTurk Sample

Because there was no main effect of control-threat on the author-generated scale, I ran ANCOVAs (with pre-existing attitudes on egalitarianism as the covariate) on the single items to examine whether there was any difference in the expected direction between the two conditions (Table 9).

Table 9. ANCOVAs on Dependent Measures and Individual Author-generated Items (mTurk Sample)

	Mean/SD(CT)	Mean/SD(NCT)	<i>F</i>	<i>p</i>	$\eta^2$
Benevolent sexism	2.18/1.00	1.80/.99	7.62	.008**	.04
Traditional gender-roles	5.16/1.34	4.94/1.24	1.61	.21	.01
1. Career vs family	5.63/2.56	5.87/2.67	-.53	.47	.03
2. Household chores	5.52/1.44	5.20/.79	2.58	.11	.02
3. Being a mother	5.53/2.67	5.11/2.55	.26	.61	.002
4. Men make more money	2.99/2.35	2.48/1.89	1.01	.31	.007
5. Raising children	5.68/1.30	5.22/.82	5.27	.023*	.03
6. Maternity leave	6.54/1.80	6.73/1.90	-.25	.61	.002
7. Husband's name	5.46/2.47	4.85/2.40	1.39	.24	.009
8. Men as providers	5.69/1.76	5.46/1.24	.56	.45	.004

Note: \* $p < .05$  \*\* $p < .01$ , means are adjusted means

CT= Control-threat condition, NCT= Non control-threat condition

1= Which one is more important for you, pursuing a career or having a family? 2= Who should do more of the household chores in a family? 3= I believe the most important contribution a woman makes is as a mother. 4= A man should make more money than a woman. 5= Who should spend more effort on raising children in a family? 6= How long do you think maternity leave should be?

7= It is better for a woman to take her husband's last name? 8= Do you think a man should be a provider or caregiver?

As can be seen in Table 9, except for items one and six, the other items showed differences that were in the expected direction—participants in the control-threat condition tended to have a more positive attitude on traditional gender roles, although the differences were not significant except for on item five (on raising children).

I ran two moderation analyses on the two dependent measures (i.e., the author-generated scale and benevolent sexism), with religiosity as the potential moderator (Table 10). For the author-generated scale, control-threat ( $\beta = .15, p = .11$ ) and religiosity ( $\beta = .45, p < .001$ ) together had a significant effect on scores on the author generated scale (in step one),  $F(2, 157) = 13.78, p < .001, R^2 = .15$ ; but there was no significant interaction effect (in step two),  $\Delta R^2 = .002, F(1, 156) = .36, p = .55$ . For benevolent sexism, both control-threat ( $\beta = .21, p = .003$ ) and religiosity ( $\beta = .40, p < .001$ ) had a significant effect on scores on benevolent sexism (in step one),  $F(2, 157) = 20.37, p < .001, R^2 = .21$ ; but there was no significant interaction effect (in step two),  $\Delta R^2 < .001, F(1, 156) = .03, p = .87$ . Religiosity was not a significant moderator of the relationship between control-threat and the dependent measures.

Table 10. Moderation Effects of Religiosity (mTurk Sample)

	CT		RE		(Step 1)			CT x RE (Step 2)			
	$\beta$	$p$	$\beta$	$p$	$R^2$	$F(2,157)$	$p$	$\beta$	$\Delta R^2$	$F(1,156)$	$p$
Traditional roles	.15	.11	.45	<.001	.15	13.78	<.001	-.06	.002	.36	.55
Benevolent sexism	.21	.003	.40	<.001	.21	20.37	<.001	-.01	<.001	.03	.87

Note:  $\beta$ = Unstandardized coefficients, CT= Control-threat, RE= Religiosity

I also did two moderation analyses on the two dependent measures with (conservative) political orientation as the moderator (Table 11). For the author-generated scale, control-threat ( $\beta = .10, p = .31$ ) and (conservative) political orientation ( $\beta = .49, p < .001$ ) together had a significant effect on scores on the author generated scale (in step one),  $F(2, 153) = 15.22, p < .001, R^2 = .17$ ; but there was no significant interaction effect (in step two),  $\Delta R^2 = .004, F(1, 152) = .70, p = .40$ . For benevolent sexism, both control-threat ( $\beta = .17, p = .02$ ) and (conservative) political orientation ( $\beta = .46, p < .001$ ) had a significant effect on scores on benevolent sexism (in step one),  $F(2, 153) = 25.51, p < .001, R^2 = .25$ ; but there was no significant interaction effect (in step two),  $\Delta R^2 < .001, F(1, 152) = .07, p = .80$ . Political orientation was not a significant moderator of the relationship between control-threat and the dependent measures.

Table 11. Moderation Effects of (Conservative) Political Orientation (mTurk Sample)

	CT		CPO		(Step 1)			CT x CPO (Step 2)			
	$\beta$	$p$	$\beta$	$p$	$R^2$	$F(2,153)$	$p$	$\beta$	$\Delta R^2$	$F(1,152)$	$p$
Traditional roles	.10	.31	.49	<.001	.17	15.22	<.001	.08	.004	.70	.40
Benevolent sexism	.17	.02	.46	<.001	.25	25.51	<.001	.02	<.001	.07	.80

Note:  $\beta$ = Unstandardized coefficients, CT= Control-threat, CPO= (Conservative) political orientation

## CHAPTER 4

### DISCUSSION

#### Summary

In a community sample (but not in a student sample), as I predicted, participants whose personal control was threatened were more accepting toward benevolent sexism when compared with those whose control was not threatened. Participants in the control-threat condition also tended to express more traditional gender attitudes for women (e.g., the wife versus the husband should devote more time on raising children). When women feel their control is threatened, they may tend to perceive benevolent sexism and traditional gender roles for women as more favorable.

#### Theoretical Implications

This finding supports system justification theory, which suggests that when threatened, all people tend to resort to the status quo that is defined by current socio-economic and political arrangements (Jost & Banaji, 1994). This result is consistent with previous research that in places with more inequality (which implies more control threat), men's sexism is highly correlated with women's internalization of sexism, indicating a strong system-justification (e.g., Glick & Fiske, 2001). As theories of benevolent sexism and system justification suggest, due to its "positive" attitudes, benevolent sexism can be seen as favorable by both women and men, and thus can contribute to the establishment and sustaining of gender-specific status quo (Jost et al., 2004).

Although control threat did not influence attitudes on benevolent sexism or traditional gender roles in college students, in both samples those with stronger system-

justification beliefs also tended to score higher on these two measures; they also tended to be less gender-equality oriented, more politically conservative, and more religious. These results support the theoretical account of system-justification—justifying and supporting the system is associated with conservatism and opposition to equality (Jost et al., 2007). They also support system-justification theorists' explanation for religious beliefs (van der Toorn & Jost, 2014); that is, that religiosity is positively associated with system-justification because religion serves a palliative function of buffering epistemic and existential threats, which helps people to rationalize and justify the status quo.

Women in both samples with a stronger gender identification also tended to report more positive attitudes toward benevolent sexism. In addition, mTurk users who more strongly identified as a woman also tended to be more religious and conservative and have a more positive attitude toward traditional gender roles for women. These correlations were not found in the student sample, which may suggest that the association between gender identification and religiosity, conservatism, and sexist attitudes could be developed after early adulthood, based on social experience and influences.

Although the concepts of benevolent sexism and traditional gender roles are in line with system-justification, and the correlations between system-justification, benevolent sexism, and attitudes toward traditional gender roles are consistent with previous research on system-justification and gender inequality (e.g., Glick & Fiske, 2001; Jost & Kay, 2005; O'Brien et al., 2012), the results did not provide direct evidence to support the link between control threat and system-justification--control threat did not enhance participants' system-justification beliefs. It is possible that benevolent sexism and



traditional gender roles are perceived as sources of compensating control, in line with the protective and caring tone implied by benevolent sexism (Glick & Fiske, 1996; 2001). The Compensatory Control Model (CCM; Kay et al., 2009) can be applied to offer a reasonable explanation for the mechanism found in the mTurk sample— when women’s personal control is threatened, they tend to seek external sources for control, which is well catered to by the chivalrous and caring manner of benevolent sexism and traditional gender roles for women. These constructs (i.e., benevolent sexism and traditional gender roles for women) may help women to perceive the world as nonrandom, structured, and under control.

Because participants in both conditions reported a positive attitude toward egalitarianism before the manipulations, the increase in benevolent sexism attitudes after the control threat does not support the worldview defense suggested by Terror Management Theory (Greenberg et al., 1986; Greenberg, Pyszczynski, Solomon, Simon, & Breus, 1994). According to TMT, people identify with their cultural worldview and this identification enhances and maintains self-esteem, which buffers anxiety and fear elicited by existential threats (Greenberg et al., 1986; 1994). Based on this theory, if participants held egalitarian beliefs before exposure to threat, they should be more egalitarian after the manipulation, rather than less, because resorting to worldview defense is vital for buffering existential threats (Greenberg et al., 1986; 1994).

#### Possible Reasons the Hypotheses were not Fully Supported

There were no effects of control-threat for the student sample on benevolent sexism or traditional attitudes. One possible reason might be procedural. Unlike mTurk

participants who did the study alone (presumably), the student participants came to the computer lab in groups of up to 25 people. One obvious issue is distraction— participants were typing out the essays at the same time so it could be too noisy for them to become mentally absorbed in the manipulation. Another possible factor is perceived group support. Participants in the experimental condition might have thought that all the other participants were writing the same essay, and this assumed shared experience might have become a kind of group support and hence mitigated the potential threat (e.g., Schachter, 1959).

On the other hand, because the manipulation check indicated that the manipulation did have an effect on the students in the control threat condition, it is likely that participants in the control threat condition did feel threatened. It is possible that the effects were not shown on the dependent measures because benevolent sexism and traditional gender roles were not perceived as a solution to control threat for female college students due to a lack of understanding and exposure to these issues. College students who are under 20 might be too young to have a clear concept and self-relevant experience with gender issues. As Sears (1986) noted, “college students are likely to have less-crystallized attitudes and less-formulated senses of self” (p. 515). They may have a very nebulous and superficial understanding of sexism and its relation with the self, and thus are not very sensitive and responsive on these concepts. A large scale national study on attitudes toward women’s work and family roles (Donnelly et al, 2016) indicated that although female adults in the 2000s and 2010s were more egalitarianism-oriented when compared with those in the 1990s, 12th graders in the 2010s (when compared with the

1990s) believed that husbands are more competent and wiser than wives in the household. This result suggests that female teenagers today may feel more positively toward traditional gender roles. These attitudes may result because students do not realize the sexist nature of traditional attitudes toward women, and it may take development-related factors such as education and social experience for them to realize the negative aspects of benevolent sexism and traditional gender roles for women. It would be interesting for future research to examine whether age is associated with sexist responsiveness to existential threats, although in the mTurk sample of the current study, neither age nor its interaction with control threat significantly predicted benevolent sexism or attitudes towards traditional gender roles ( $\beta$ s < 1.2,  $t$ s < 1.8,  $p$ s > .07).

First year students may not have much personal experience of “not having control” either. The control-threat essay instructions specifically asked participants to write about their personal experiences. However, about 30% of them wrote about how in general they feel that the world is a random place that lacks control, whereas about 90% of mTurk users followed the instructions and wrote about their personal control. Students may have done this because they could not come up with a personal experience where they lacked personal control, because at this stage of life they do not have many responsibilities and/or obligations that require having control. As a consequence, although both mTurk participants and student participants in the experimental conditions scored significantly lower in the manipulation check question when compared with those in the comparison conditions, students might be different from mTurk participants in the same experimental condition because for many of them, the control-threat was perceived as external versus

internal for the most of mTurk participants. Based on the CCM, different sources of control-threat can elicit different types of compensation— when one control source is threatened, people compensate by defending the other (e.g., Kay et al., 2009, Kay et al., 2010). Those students who perceived the control-threat as external may have resorted to personal control such as independence and agency, rather than external sources such as caring from men and society. Even after removing the participants who did not follow instructions from the analyses, however, there was still no effect of control threat on benevolent sexism ( $F [1,137] = 1.90, p = .45$ ) or items on attitudes toward traditional gender roles ( $F_s < 2.00, p_s > .11$ ).

For the mTurk sample, women who had a higher level of gender identification were more traditional and conservative (agreed more with benevolent sexism and traditional gender roles). But when their control was threatened, those who identified more strongly as women did not show more positive attitudes toward benevolent sexism and traditional gender roles. It is possible that women's perception of gaining external control from benevolent sexism and traditional gender roles does not vary with their gender identification. SJT research shows that people from both high and low socio-economic status are motivated to endorse the current system (Jost et al., 2012). It is likely that both women and men can gain control by supporting benevolent sexism and traditional gender roles, and thus gender identification may not be important in this process.

Control threat and gender-specific system-justification were both associated with benevolent sexism but not with each other in the mTurk sample, which suggests that although control threat and gender-specific system-justification both contribute to

benevolent sexism, control threat may not directly enhance gender-specific system-justification. In the college sample, control threat was not associated with either gender-specific system-justification or sexist attitudes (i.e., benevolent sexism and traditional gender roles).

### Limitations and Suggestions for Future Research

One limitation of the current study is that the results of the student sample might have been influenced by the experimental procedure. For future studies with college students, it is suggested that participants do the study alone without distraction and potential psychological support from others. It could also be helpful if there were a White male experimenter to conduct the sessions because this study is about how women resort to the gender-specific status quo and traditional gender roles as a means of mitigating control threats and White males are perceived as a dominant group in the system (e. g., Lee, Pratto, & Johnson, 2011). His presence may make the relevant constructs such as gender-specific system-justification and sexism more salient. This suggestion also applies to non-student samples; since the current study used mTurk, experimental control was minimal as participants did the study by themselves and may not have given it their full attention.

Another limitation for the student sample is that the manipulation and dependent measures of the current study may not be applicable for students. For control threat, future research should use manipulations that are more “threatening” for students, such as their being unable to receive student loans to support their own education (Hogg, Meehan, & Farquharson, 2010) or failing consequential exams. For the dependent

measures, benevolent sexism and traditional gender roles may not yield effects on students because they are unaware of these concepts and their implications. Benevolent sexism is insidious because women (and men) tend to perceive it as something positive rather than sexist (Glick & Fiske, 2001). Students who lack exposure to these constructs may be unaware of their meanings. Future research could incorporate dependent measures that could be more responsive for students, such as collective action intentions regarding gender issues at the university (Becker & Wright, 2011).

Another limitation associated with the manipulation of the current study is that participants in the comparison conditions did not receive neutral information about control, but rather had their control reaffirmed. Although previous studies (e.g., Whitson & Galinsky, 2008; Banfield, 2011) have usually reaffirmed participants' control in the comparison condition because it helps to eliminate preexisting differences in terms of participants' control, the most obvious flaw is that one cannot know for sure whether the effects were elicited from losing control or reaffirming control. Future research could draw a stronger conclusion by having a natural comparison group.

Although control threat induced some expected effects in the community sample, there were no effects of control threat in the student sample. One cannot jump to the conclusion that control threat definitely induces internalization of gender inequality among women because there is no evidence to suggest that community sample recruited from mTurk is a more reliable or generally better sample than the student one. It is also possible that the effects found in the community sample are random effects that cannot be

replicated. Scholars are welcome to replicate the effects found in this study to examine whether they are consistent.

Another limitation of the current study is that it did not compare ethnic groups. The majority of the samples were White, and Whites are considered dominant group members in the U.S. in terms of ethnicity (Lee et al., 2011). They may not notice the issue of gender inequity as strongly as women from non-dominant social groups, and hence they might be less responsive when facing such issues. Future studies can make contributions to the literature by studying women from other ethnic groups because they may have different perceptions and understanding of the status quo.

The results of the current study suggest that people all become conservative when they feel threatened, no matter what type of ideology they started with (gender egalitarianism, in the current study), which supports SJT rather than TMT. But this study is not a strict comparison of these theories because there was no mortality salience manipulation, which is a necessity to elicit the mechanism of worldview defense in TMT (Greenberg et al., 1986; 1994). It was unclear where mortality salience should be imbedded in the current study. If mortality salience were measured before the dependent measures, then it may prime participants with death thoughts and influence their responses on the dependent measures, and one would not know whether the effects were induced by control threat or death-thought. If it were measured after the dependent measures, there should not be any differences in death thought accessibility because the dependent measures serve as an opportunity for worldview identification, which should decrease people's mortality salience according to TMT (e.g., Harmon-Jones et al., 1997).

Future studies on control-threat and gender issues can better compare TMT and SJF by pretesting the possible relationship between control-threat and mortality salience.

As a short online/lab self-report study, the current study has limited external validity to generalize to real life situations. Future research could incorporate behavioral measures, or peers' ratings (e.g., cross-gender interactions and men's evaluation; Borton, Reiner, Vazquez, Ruddiman, & Anglin, 2011), actual job and salary entitlement (e.g., O'Brien et al., 2012), or people's response to actual control threats such as 9/11 (e.g., Cohen, Ogilvie, Solomon, Greenberg, & Pyszczynski, 2005) or an economic crisis (e.g., Hennes et al., 2012).

Future research could also use different measures to probe the potential moderation/mediation effects. The internal reliability of the items measuring gender identity in the current study was initially very low. Future research should try to use alternative measures after pre-testing. For the mediation analysis, future research could use the original system-justification scale to examine the mediation effect. The gender-specific system-justification scale often has low internal consistency (e.g.,  $\alpha = .65$  in Jost & Kay, 2005;  $\alpha = .69$  in the student sample and  $\alpha = .76$  in the mTurk sample in the current study); in addition, empirical evidence supporting the association between existential threat and system-justification has often been gathered from studies using the original scale (e.g., Hennes et al., 2012; Jost et al., 2007).

### Implications

The correlations among gender-specific system-justification, benevolent sexism, political orientation, and religiosity in both samples suggest that all these constructs are



associated with each other and potentially all contribute to the false consciousness that the current system is legitimate, fair, and worth supporting (van der Toorn & Jost, 2014). This finding is in line with system-justification-theorists' position that religion is endorsed because of its palliative function (van der Toorn & Jost, 2014) and empirical findings suggesting that benevolent sexism and gender stereotyping enhance system-justification beliefs (Jost & Kay, 2005). The correlations between benevolent sexism and gender identification in both samples suggest that women who perceive their gender identity as an important component of their self-image are more likely to endorse benevolent sexism.

When people perceive the world as a place of randomness where they have no control, they tend to rely on whatever is prevalent or accessible in the current socio-economic and political arrangements, even if these arrangements are disadvantageous for themselves and they actually have the opportunity and capability to make positive changes (Jost & Banaji, 1994; Jost et al., 2012). When control is threatened, people may not enhance their self- and ingroup- esteem and bolster cultural worldviews by striving for fairness and justice as TMT suggests. Instead, they may form the false belief that the status quo is structured and reasonable, and grants them a sense of control (Jost & Banaji, 1994). Maintaining control may be the most fundamental motive for human beings (Kay et al., 2009), which prompts people to sacrifice welfare or even basic needs to sustain it. Some theorists have suggested that lack of control is more threatening than mortality, which explains why sometimes people commit suicide when they feel they do not have control in their lives (Fritsche et al., 2008).

The result that community women, but not college students, tended to accept benevolent sexism and traditional gender roles when threatened implies that women may not be aware of gender issues until they enter the world outside of the school, where they need to be independent and take responsibility. The different findings in the two samples suggest that college could be very different from the actual social system— students do not feel threatened or gender-discriminated in college, but after they graduate and start to transfer to career roles in the “real system,” they may be exposed to existential threats and made more keenly aware of how sexism is embedded in the system. This awareness of system-associated sexist attitudes may gradually turn into acceptance (at an unconscious level), which could help buffer existential threats elicited from loss of control, certainty, and meaning.

The findings of the current study can shed light on possible solutions to issues regarding societal inequality and injustice. Based on SJT, low status group members tend to accept the status quo and be ambivalent on inequality-related issues such as sexism, racism, and the income gap because they are provided with justifications to form outgroup favoritism and tend to take comfort in the belief that they are advantaged in other ways (Jost & Burgess, 2000). As these beliefs and justifications contribute to the perceived (false) legitimacy of the socio-economic and political arrangements in the system, it is important for policy-makers and scholars to emphasize directly and strongly what is an authentic versus false legitimacy of a system. If people are educated to understand that these rationalizations are in fact false rationalizations, then people might be less likely to accept and endorse illegitimate arrangements.

This study presents evidence that even in a modern society such as in the United States where the ideology of gender-equality is prevailing and influential, women may still tend to resort to unequal traditional gender arrangements and recoil from gender egalitarianism when they feel they are losing control. If this is the case, then consider in countries where the government or the legal system is unreliable, how much the non-dominant group members such as women may feel threatened and hence forgo their rights.

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## APPENDIX A

## WRITTEN CONSENT FORM FOR SONA

Project Title: Scientific opinion and attitudes

Name of Investigator(s): Zheng Li

Nature and Purpose: This study will investigate people's 1) feelings about some scientific opinions and 2) attitudes towards certain social issues.

Explanation of Procedures: As a participant in this study, your participation is voluntary. You will read an essay about some scientific opinions and write a short response and complete several scales related to social issues. This study is expected to take approximately 30 minutes. You may discontinue involvement in the study at any time.

Discomfort and Risks: There are minimal anticipated risks involved with participating in this study.

Benefits and Compensation: You will be granted with 0.5 course credit for completing this study, there is no direct benefits other than learning about how psychological studies work

Confidentiality: All data collected will be anonymous and used for my thesis.

Right to Refuse or Withdraw: Your participation is voluntary. You are free to withdraw from participation at any time or to choose not to participate at all, and by doing so, you will not lose benefits to which you are otherwise entitled.

**Questions:** If you have questions about the study you may contact or desire information in the future regarding your participation or the study generally, you can contact the project investigator Zheng Li, at the Department of Psychology, University of Northern Iowa, lizae@uni.edu, or his faculty advisor Helen C. Harton, Ph.D. at the Department of Psychology, University of Northern Iowa 319-273-2235. You can also contact the office of the IRB Administrator, University of Northern Iowa, at 319-273-6148, for answers to questions about rights of research participants and the participant review process.

Signature

Date

APPENDIX B  
WRITTEN CONSENT FORM FOR MTURK

Project Title: Scientific opinion and attitudes

Name of Investigator(s): Zheng Li

Nature and Purpose: This study will investigate people's 1) feelings about some scientific opinions and 2) attitudes towards certain social issues.

Explanation of Procedures: As a participant in this study, your participation is voluntary. You will read an essay about some scientific opinions and write a short response and complete several scales related to social issues. This study is expected to take approximately 30 minutes. You may discontinue involvement in the study at any time.

Discomfort and Risks: There are minimal anticipated risks involved with participating in this study.

Benefits and Compensation: You will be granted with 50 cents for completing this study.

Confidentiality: All data collected will be anonymous and used for my thesis.

Right to Refuse or Withdraw: Your participation is voluntary. You are free to withdraw from participation at any time or to choose not to participate at all, but by doing so, you will lose benefits to which you are otherwise entitled.

**Questions:** If you have questions about the study you may contact or desire information in the future regarding your participation or the study generally, you can contact the project investigator Zheng Li, at the Department of Psychology, University of Northern Iowa, [lizae@uni.edu](mailto:lizae@uni.edu), or his faculty advisor Helen C. Harton, Ph.D. at the Department of Psychology, University of Northern Iowa 319-273-2235. You can also contact the office of the IRB Administrator, University of Northern Iowa, at 319-273-6148, for answers to questions about rights of research participants and the participant review process.

APPENDIX C  
DEMOGRAPHIC QUESTIONS

1. What is your age?

2. What is your gender?

3. What is your ethnicity?

European American/White

African American/Black

Hispanic

Asian

Native American

Other

4. What is your religious affiliation?

Catholic

Muslim

Atheist

Protestant (e.g., Christian, Baptist, Presbyterian, Methodist)

Mormon

Jewish

Agnostic

Hindu

Buddhist

None

Other

5. What is your political orientation?

1(Liberal) 2 (Moderate) 3 (Conservative) 4(other/do not know)

6. How religious are you?

(not at all) 1 2 3 4 5 6 7 (very much)

## APPENDIX D

## GENDER IDENTIFICATION AND PRE-EXISTING EGALITARIANISM

This survey is about thoughts. There are no right or wrong answers, so please respond honestly to each of the items below. Be sure to answer every item by circling the appropriate number beside each.

On the whole, I am satisfied with myself\*.

(strongly disagree) 1      2      3      4      5 (strongly agree)

Gays and lesbians are just as healthy and moral as anybody else. †

(strongly disagree) 1      2      3      4      5 (strongly agree)

It is important for the United States to have more female politicians.

(strongly disagree) 1      2      3      4      5 (strongly agree)

I feel that I have a number of good qualities\*

(strongly disagree) 1      2      3      4      5 (strongly agree)

Obedience and respect for authority are the most important values children should learn. †

(strongly disagree) 1      2      3      4      5 (strongly agree)

**Overall, being a woman has little to do with how I feel about myself.**

(strongly disagree) 1      2      3      4      5 (strongly agree)

I would feel more comfortable if a man rather than a woman were running the country's finances. ^

(strongly disagree) 1      2      3      4      5 (strongly agree)

I am able to do things as well as most other people.\*

(strongly disagree) 1      2      3      4      5 (strongly agree)

**Being a woman is an important reflection of who I am.**

(strongly disagree) 1      2      3      4      5 (strongly agree)



There is no “ONE right way” to live life; everybody has to create their own way. †

(strongly disagree) 1      2      3      4      5 (strongly agree)

Police should not intervene in domestic disputes between a husband and his wife.^

(strongly disagree) 1      2      3      4      5 (strongly agree)

I wish I could have more respect for myself.\*

(strongly disagree) 1      2      3      4      5 (strongly agree)

**Being a woman is unimportant to my sense of what kind a person I am.**

(strongly disagree) 1      2      3      4      5 (strongly agree)

I am more comfortable with men running big corporations than with women running them.

(strongly disagree) 1      2      3      4      5 (strongly agree)

The “old-fashioned ways” and the “old-fashioned values” still show the best way to live. †

(strongly disagree) 1      2      3      4      5 (strongly agree)

**In general, being a woman is an important part of my self-image.**

(strongly disagree) 1      2      3      4      5 (strongly agree)

Note: Items underlined are the measurement of pre-existing egalitarianism, those with ^ are items from Patriarchal Beliefs Scale (Yoon et al., 2015); items in bold are measurement of gender identification; items with \* are from Rosenberg Self-esteem Inventory (Rosenberg, 1965); items with † are from Rightwing Authoritarian Scale (Altemeyer, 1998).

APPENDIX E  
CONTROL THREAT PASSAGE

“The world really is a random place,” said Thomas Cornwallis, a statistics professor at Oxford. Cornwallis made the comments at a conference hosted by Harvard University in January. The conference, titled “Understanding the World,” was aimed at trying to understand the causes of events in the world. Cornwallis was one of several panelists who agreed that the world mostly operates in erratic, unpredictable ways. At the same conference, Marten Keese, a professor at Utrecht University in the Netherlands, spoke about an article he published in the renowned journal *Science*. Keese claimed that people’s behavior does not have clear causes. Although people may believe that the world is orderly and nonrandom, Keese says our perceptions are flawed. “Unperceived factors determine what happens to us. Most people believe their outcomes are under control, but our data suggest that random fluctuations have greater effects.”

APPENDIX F  
NON-THREAT PASSAGE

“The world really is an orderly place,” said Thomas Cornwallis, a statistics professor at Oxford. Cornwallis made the comments at a conference hosted by Harvard University in January. The conference, titled “Understanding the World” was aimed at trying to understand the causes of events in the world. Cornwallis was one of several panelists who agreed that the world mostly operates in stable, understandable patterns. At the same conference, Marten Keese, a professor at Utrecht University in the Netherlands, spoke about an article he published in the renowned journal *Science*. Keese claimed that people’s behaviour has clear causes. “There are good reasons for people to believe that the world is orderly and non-random,” said Keese. “Most people believe their outcomes are under control, and our data support that belief.”

## APPENDIX G

## PANAS WITH MANIPULATION CHECK

How do you feel right now?

Upset (not at all) 1 2 3 4 5 (extremely)

Hostile (not at all) 1 2 3 4 5 (extremely)

Alert (not at all) 1 2 3 4 5 (extremely)

**In control\* (not at all) 1 2 3 4 5 (extremely)**

Ashamed (not at all) 1 2 3 4 5 (extremely)

Inspired (not at all) 1 2 3 4 5 (extremely)

Nervous (not at all) 1 2 3 4 5 (extremely)

Determined (not at all) 1 2 3 4 5 (extremely)

Attentive (not at all) 1 2 3 4 5 (extremely)

Afraid (not at all) 1 2 3 4 5 (extremely)

Active (not at all) 1 2 3 4 5 (extremely)

Note: \* = manipulation check question

APPENDIX H  
AUTHOR-GENERATED SCALE

1. Which one is more important for you, pursuing a career or having a family?  
(pursuing a career) 1 2 3 4 5 6 7 8 9 (having a family)
2. Who should do more of the household chores in a family?  
(the husband) 1 2 3 4 5 6 7 8 9 (the wife)
3. I believe the most important contribution a woman makes is as a mother.  
(strongly disagree) 1 2 3 4 5 6 7 8 9 (strongly agree)
4. A man should make more money than a woman.  
(strongly disagree) 1 2 3 4 5 6 7 8 9 (strongly agree)
5. Who should spend more effort on rearing children in a family?  
( the husband) 1 2 3 4 5 6 7 8 9 (the wife)
6. How long do you think maternity leave should be?  
1. One week 2. Two to four weeks 3. Four to six weeks 4. About two months 5. Two to three months 6. Three to four months 7. About half year 8. About nine month 9. About one year
7. It is better for a woman to take her husband's last name.  
(strongly disagree) 1 2 3 4 5 6 7 8 9 (strongly agree)
8. Do you think a man should be a provider or caregiver?  
(provider) 1 2 3 4 5 6 7 8 (caregiver)
9. For your first formal job, how much salary per year do you think it is reasonable and satisfactory?  
1. 2, 5000 – 30,000 2. 30,000- 35,000 3. 35,000 – 40, 000 4. 40, 000- 45, 000 5. 45, 000 -50, 000 6. 50, 000- 55, 000 7. 55, 000- 60, 000 8. 60, 000 – 65, 000 9. above 65, 000
10. In your opinion, for your first formal job, how long should it take to get you promoted?  
1. Within three months 2. Within half a year 3. Six months to one year 4. One year to 18 months 5. 18 months to two years 6. Two to three years 7. Three to five years 8. Five to seven years 9. After seven years

Note: items 9 and 10 were not presented in the mTurk sample

APPENDIX I  
AMBIVALENT SEXISM SCALE

1. No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
3. In a disaster, women ought not necessarily to be rescued before men. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
4. Most women interpret innocent remarks or acts as being sexist.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
5. Women are too easily offended.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
6. People are often truly happy in life without being romantically involved with a member of the other sex. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
7. Feminists are not seeking for women to have more power than men.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
8. Many women have a quality of purity that few men possess. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
9. Women should be cherished and protected by men. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
10. Most women fail to appreciate fully all that men do for them.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
11. Women seek to gain power by getting control over men.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
12. Every man ought to have a woman whom he adores. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
13. Men are complete without women. \*

- (disagree strongly) 0 1 2 3 4 5 (agree strongly)
14. Women exaggerate problems they have at work.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
16. When women lose to men in a fair competition, they typically complain about being discriminated against.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
17. A good woman should be set on a pedestal by her man. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
18. There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
19. Women, compared to men, tend to have a superior moral sensibility. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
20. Men should be willing to sacrifice their own wellbeing in order to provide financially for the women in their lives. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
21. Feminists are making entirely reasonable demands of men.  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
22. Women, as compared to men, tend to have a more refined sense of culture and good taste. \*  
(disagree strongly) 0 1 2 3 4 5 (agree strongly)
- Note: \*= Benevolent Sexism

APPENDIX J  
GENDER-SPECIFIC SYSTEM JUSTIFICATION SCALE

In general, relations between men and women are fair

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*

The division of labor in families generally operates as it should

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*

Gender roles need to be radically restructured

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*

For women, the United States is the best country in the world to live in

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*

Most policies relating to gender and the sexual division of labor serve the greater good

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*

Everyone (male or female) has a fair shot at wealth and happiness

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*

Sexism in society is getting worse every year

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*

Society is set up so that men and women usually get what they deserve

*(strongly disagree)* 1 2 3 4 5 *(strongly agree)*



## APPENDIX K DEBRIEFING

Thanks again for taking part in my study. This is a study about how threats to people's control can lead to the internalization of traditional gender concepts and arrangements among women. Previous studies indicate that when people are threatened, they tend to support and endorse the status quo because it helps people to see the world as predictable, structured, and ordered, which helps them to regain and maintain certainty and control. In this study, we hypothesize that when female participants' control is threatened, they may tend to justify the current social arrangement for different genders by agreeing more with items about benevolent sexism, which is the idea of women as being sweet but needing protection and care from men, and agree less with items about gender-role egalitarianism. So in the beginning, you read and wrote essays about either having, or not having control, depending on whether you were in the experimental group or the comparison group to induce a control threat. Then you completed questions about how women perceive the gender roles.

We couldn't tell you this earlier, of course, because it might have affected how you responded. Please understand that there are no good or bad answers in your responses. Theorists of system justification suggest that people tend to support and justify the status quo, whereas other researchers argue that people tend to booster their self-esteem by identifying with their personal ideologies. So any response you gave here is reasonable, and there is nothing wrong with it.

If you read the passage claiming that people do not have control over what is happening, we want to let you know that it is made up by researchers to induce control threat. So of course it is not true. If you try to list things you have control over in your life, you will find it easy to come up with several ones.

If you feel any discomfort after this study, please seek help with the counseling center or contact the experimenter at [lizae@uni.edu](mailto:lizae@uni.edu) for suggestions.

Thank you for your time!