MY GROUP, OUR BELIEFS: COMPENSATING FOR THREATS TO INDIVIDUAL
CONTROL THROUGH THE COLLECTIVE

BY

CHRIS GOODE

Submitted to the graduate degree program in Psychology and the Graduate Faculty of the
University of Kansas in partial fulfillment of the requirements for the degree of Doctor of
Philosophy.

_____

Chairperson Dr. Nyla R. Branscombe

_____

Co-Chairperson Dr. Ludwin E. Molina

_____

Dr. Christian S. Crandall

_____

Dr. Rachel McDonald

_____

Dr. David N. Smith

Date Defended: April 29th, 2016

The Dissertation Committee for Chris Goode
certifies that this is the approved version of the following dissertation:

MY GROUP, OUR BELIEFS: COMPENSATING FOR THREATS TO INDIVIDUAL
CONTROL THROUGH THE COLLECTIVE

_____

Chairperson Dr. Nyla R. Branscombe

Date approved:  April 29th, 2016

Abstract

Compensatory control theory proposes that people can compensate for a loss of personal control through endorsement of external sources of structure like ideologies. Social identity and self-categorization theories provide evidence that ideologies, as group-based beliefs, are endorsed more strongly by highly identified group members compared to those lower in identification. The present studies integrate these perspectives in order to investigate the use of ideology as a source of compensation. In all three studies a group-based control threat (vs. control boost) was employed to manipulate the perceived personal control of women participants. Study 1 ($N = 151$) investigated the potential interaction of threat and identification on the endorsement of gender egalitarianism and benevolent sexism. Study 2 ($N = 161$) investigated the degree to which identification and threat interacted to predict perceptions of order and structure for a gender-equal society, and whether these perceptions affect support for gender egalitarianism (a moderated-mediation model was tested). Study 3 ($N = 190$) investigated the degree to which identification and threat interacted to predict perceived personal control following a group-based threat to personal control, and the indirect effect of threat on perceived control through the endorsement of gender egalitarianism (a moderated-mediation model was tested). Across all 3 studies results revealed significant interactions between gender identification and a group-based threat to control on ideology endorsement, perceived structure of social relations, and perceived personal control. The integration of these theoretical perspectives on control threat, identification, and ideology is proposed as a more specific account of control compensation.

Table of Contents

List of Figures

My group, our beliefs: Compensating for threats to individual control through the collective

People generally expect they will be able to achieve desired outcomes and influence the world around them (e.g., efficacy; Bandura, 1977). Perceiving control over one's life is a vital aspect of physical and psychological well-being which often translates into important mental and physical outcomes (Greenaway, Cichocka, Van Veelen, Likki, & Branscombe, 2014; Knight, Haslam, & Haslam, 2010; Schulz, 1976; Steptoe & Appels, 1989). A sense of control over life's outcomes helps people maintain a sense that the social world is well-ordered and predictable (Kay, Sullivan, & Landau, 2014; Rothbaum, Weisz, & Snyder, 1982).

Historically, personal control was studied by focusing on either internal psychological processes (e.g., locus of control; see Lefcourt, 1981) or the influence of social contexts that afford control (e.g., secondary control; see Rothbaum, Weisz, & Snyder, 1982). Recent research on personal control has begun focusing on the interaction between these processes, noting that an individual's perception of control goes beyond their personal agency (i.e., ability to act) and is in part embedded in social systems they perceive as providing meaningful order to the world (e.g., strong federal government; Kay, Gaucher, Napier, Callan, & Laurin, 2008).

Despite the importance of perceived personal control for positive psychological functioning, these perceptions are sometimes challenged by chaotic or uncontrollable events (Kay, Sullivan, & Landau, 2014). In the event of a threat to perceived control, research from a compensatory control perspective commonly finds that people compensate for this loss by increasing their support for external sources of order (e.g., a controlling deity). As reviewed in detail below, researchers have found that when personal control is low, individuals can turn to a wide range of external sources capable of reassuring them that the world is structured and orderly.

While the aforementioned theory and research provides an informative, multi-level view on control, it has not yet investigated compensation for specific types of threat to personal control, such as threats based upon a target's personal characteristics or experiences (e.g., death of a loved one), or the target's social group memberships (e.g., discrimination). The present work focuses on the experience of low personal control due to being a member of a social group. For example, when a person learns that members of their group (e.g., women) are excluded from a certain outcome (e.g., being the CEO of a company), they may feel a lack of personal control over future occupational outcomes despite their own efforts (e.g., excluded from promotion regardless of their individual merit). Indeed, meta-analyses of the discrimination and psychological well-being literature have revealed that perceived pervasive discrimination is predictive of poor well-being including lower feelings of control (Schmitt, Branscombe, Postmes, & Garcia, 2014; Verkuyten, 1998) and physical health (Paradies, 2006; Pascoe &Richman, 2009). This is regarded as a *group-based threat* to personal control as the value of the individual's social group as a whole is threatened and decreases feelings of personal control for the individual group member.

Existing research from a compensatory control perspective also neglects the role of social identification. This is a critical omission as identification with social groups influences how people interpret and structure their social world (Ellemers, Spears, & Doosje, 2002). The external sources of structure that individuals endorse for compensation may be determined by the degree to which they identify with the group(s) these sources represent. The connection between social identification and any motivated endorsement of social systems for compensation is important considering the overwhelming evidence that groups play a vital role in providing individuals with a feeling of personal control (Greenaway et al., 2015).

This paper focuses on the use of ideology as a source of compensation when individuals feel a loss of control *due to* their membership in a social group. This work extends CCT by including social identification processes in order to make more specific predictions about *who* compensates with *what* ideology following a control threat. This work also extends work within SIT/SCT by demonstrating how one consequence of group identification, strong support for a group's norms and values, can have far-reaching consequences for how individuals cope with threatening information.

A series of studies were conducted to examine how group identification influences the use of ideology as a control-compensation source. This work tests if a threat to personal control motivates the endorsement of an ideology that most group members support (i.e., group-normative), and the rejection of an ideology that most members disagree with (i.e., non-normative). It also tests the degree to which group members perceive their ideology as offering structure and order to the social world. Finally, this work tests if endorsing a group normative ideology restores perceptions of personal control *after* they have been threatened.

As explained in detail below, compensatory control theory (CCT) offers a framework for understanding why individuals respond to a loss of personal control with greater endorsement of external sources of order (i.e., they provide order and structure to the social world; Kay, Sullivan, & Landau, 2014), as well as many of the external sources endorsed (e.g., a benevolent God; Kay et al., 2008) when control is lost. Additionally, social identity (SIT) and self-categorization (SCT) theories explain how social identification affects how individuals react to information concerning the group (Branscombe, Ellemers, Spears, & Doosje, 1999), and how much they endorse group-normative ideologies (Hogg & Reid, 2006). These two perspectives are combined

to investigate the moderating effect of group identification on the use of ideology to compensate for a group-based threat to control.

Clifford Geertz (1966) argued that human thoughts are fundamentally social in origin, function, and application. Thoughts are expressed through symbols that are shared and understood by group members; shared because the group offers a collective understanding of their meaning. Following from Geertz's cultural analysis, Remington (1971) conceptualized ideology as a shared set of values and beliefs that are grounded in a group's shared outlook. For Remington, ideologies work to consolidate group cohesion and solidarity, which promotes identification with that group. Borrowing from these theoretical analyses, ideology is defined as *a cohesive set of beliefs about the preferred structure of society that constitute a group's shared perspective*.

The ideologies that people adhere to are a product of the social groups that they find meaningful. This statement is in accordance with many theoretical accounts of ideology found outside of social psychology. From Marx's (Marx & Engels, 1932) conception of ideology as a representation of group-based interests aimed at legitimizing the oppression of those who do not control production), to Lane's (1962) emphasis on ideologies as reflections of the norms and morals of a group acquired through identification, theorists outside of psychology have often focused heavily on the group-based nature of ideologies (e.g., *ideological proxy,* Converse, 1964; *representations of social institutions*, Jackman, 1994; *social representations from a group's perspective*, Mannheim, 1936; *social values,* Feldman, 2003).

Theorists have often emphasized that ideologies represent a set of beliefs shared by group members that are used to understand, defend, or change the existing social structure. While many perspectives in social psychology acknowledge that ideologies are group-based belief systems,

they often place emphasis on ideologies held by dominant groups (Friesen, Kay, Eibach, & Galinsky, 2014; Jost, Pelham, Sheldon, & Sullivan, 2003; Sidanius & Pratto, 1999; Thorisdottir, Jost, & Kay, 2009) and neglect to consider the process of identification as a fundamental requirement of expressing ideology.

Social identity theory on the other hand places group identification at the heart of ideological endorsement (Haslam et al., 2010; Haslam & Reicher, 2012; Hogg, Meehan, & Farquharson, 2010) and is useful for understanding the use of ideology as a source of compensation. The selection and endorsement of a particular ideology may be dependent upon how much an individual identifies with the social group associated with the ideology. This argument is expanded upon later in the paper, but first CCT's account of control compensation is outlined.

**Compensatory Control Theory**

Compensatory control theory argues that the desire people have to feel in control over their lives (i.e., personal control) is derived from the even more fundamental need to perceive the social world as structured and ordered. If one has control over what happens to them (e.g., work hard and thereby gain success), then it follows that the world has a predictable order and outcomes can be anticipated, achieved or avoided (Kay, Sullivan, & Landau, 2014). When something interrupts or threatens the individual's perception of control, there is an underlying experience of chaos and unpredictability (Kay et al., 2014) which increases anxiety (Kay, Moscovitch, & Laurin, 2010). Anxiety then motivates a desire to reduce this negative state (Kay & Eibach, 2013). One of the ways individuals can reduce anxiety and reestablish a perception of control is to increase their support for an external agent of structure and order (e.g., benevolent god, strong national government; Kay et al., 2008; Rothbaum et al., 1982).

**Sources of structure.** Compensatory control theory argues that humans have a need to see their social world as having order and structure. This underlies the contention that personal control is one way to satisfy that need, and when personal control is threatened, this avenue to perceiving structure is temporarily blocked (Kay & Eibach, 2013; Kay, Sullivan, & Landau, 2014). People can compensate for this threat by circumventing the perception that personal control leads to a structured world, and instead focus on an external source they perceive as capable of providing order to the social world for them (Kay, Whitson, Gaucher, & Galinsky, 2009).

This argument is at the core of the CCT postulated control-restoration process as only those external systems that provide order and structure (vs. those that do not) should be suitable for control compensation. For example, in two studies, American participants indicated that work-place hierarchy was a more structured social system than work-place equality. Additional studies found that participants endorsed hierarchy more than equality when their personal control was threatened. These researchers also found that individuals higher in need-for-structure were higher in preference-for-hierarchy. Finally, when the authors framed hierarchy as un-structured, they found that individuals were *less* supportive of hierarchy compared to equality when personal control was threatened (Friesen, Kay, Eibach, & Galinsky, 2014). This work argues that hierarchical social arrangements are perceived as more structured than equal social arrangements, and therefore preferred as compensation sources. While this line of research provides important evidence that a desire for structure motivates the endorsement of an external system when personal control is threatened, there are two factors unaddressed by the authors that might alter how these findings are interpreted.

First, the samples used in these studies were comprised of American participants, members of a culture where economic individualism and hierarchical social systems are normative (Feldman, 1983; Lipset, 1979; Sidanius & Pratto, 1999). For this reason, it might be that work-place hierarchy was rated as more structured than work-place equality because it represents a social norm. It is also plausible that highly identified Americans in these samples drove the main effect of preference for hierarchy and its endorsement following a control threat. Without a measure of American or workplace identification, it is unknown whether participant levels of identification with their social group affected their perceptions of structure for work-place hierarchy. Second, a motivation to perceive structure in the social world may influence how structured different social systems are rated when personal control has been threatened (Heine, Proulx, & Vohs, 2006). The authors found that when control is not manipulated, American participants rate hierarchy as more structured than equality. It is possible that following a threat to control, the ratings of a social system's structure may be influenced by the desire to perceive structure (a drive outlined in CCT as a result of a loss of control; Kay, Sullivan, & Landau, 2014). An individual motivated to look for structure in the social world (due to a loss of personal control) may heighten their ratings of structure for a group-normative social system. This increased perception of structure could lead to a greater endorsement of that system as a way to reinforce the perception that order and structure are in place. Combining these two observations, it is plausible that individuals who are highly identified with a social group will see a group-normative ideology as more structured when motivated to compensate for a loss of personal control. This point is addressed later on.

**Sources of compensation.** Compensatory control research has illustrated a variety of social systems that individuals *can* turn to when their personal control is low. For example,

participants who suffered a threat to their personal control were more supportive of a life-ordering god over a god that was merely responsible for creation (Kay et al., 2008). Additional studies have shown that threats to personal control (vs. no threat) result in stronger support for a national culture focused on law and order (Shepherd, Kay, Landau, & Keefer, 2011), belief in conspiracy theories (Whitson & Galinsky, 2008), faith in ordered origins of life theories (i.e., a distinctly ordered evolutionary process vs. a random evolutionary process; Rutjens, van der Pligt, & van Harreveld, 2010), belief in precognitive abilities (Greenaway, Louis, & Hornsey, 2013), endorsement of meritocracy (Goode, Keefer, & Molina, 2014), and belief in the existence and power of one's enemies (Sullivan, Landau, & Rothschild, 2010).

According to CCT, ideologies work like any other external source (e.g., God, government) when individuals are motivated to compensate for a loss of personal control. CCT argues that due to their structured nature of explaining social relations, people can use an ideology to re-establish their sense that the world is not chaotic or random. For example, participants primed to remember a time they lacked personal control (vs. remembering a time they had complete control) reported more anxiety concerning their future. As a means of managing this anxiety, these participants endorsed an economic ideology (i.e., meritocracy) significantly more than participants in the other condition. This elevated endorsement of meritocracy enabled these participants to become just as optimistic about their future economic prospects as individuals who did not experience a threat to their control (Goode, Keefer, & Molina, 2014).

Work within CCT has provided support for the argument that when personal control is threatened, a) the individual perceives less structure and order to their social world (Kay, Whitson, Gaucher, & Galinsky, 2011), b) this motivates the endorsement of an external system

perceived as providing order and structure to the world (Kay et al., 2008; Goode et al., 2014). However, this perspective has not yet addressed social identification, a key component of social life. Social identification may affect *what* ideology (if any) a group member endorses following a threat to personal control. The degree to which members assess their group's ideological beliefs as representing a structured social system (regardless of whether that system is hierarchical or equitable) might also be dependent upon identification with the group. Finally, social identification is likely to affect if the endorsement of the group's ideology works to restore perceptions of personal control.

The present studies treat identification as a factor people bring to a situation that affects how they interpret and respond in a specific context. Many individuals identify with specific groups and this identity carries over into many different contexts (Doosje & Ellemers, 1997; Turner, 1999). However, group identification is also not a static trait that is always constant. Self-categorization theory has illustrated the factors that lead to increased or decreased group identification *due to* a specific context, as well as many of the outcomes associated with it (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Both of these factors are important for understanding the effect of identification as they represent a cyclical process. A certain context may motivate an individual to align with a specific group and increase their endorsement of that group's ideology for the moment. At the same time that social identity can carry over into many other contexts and filter how the individual reacts in other situations. This paper focuses on the process by which individuals bring a social identity into a specific context, and how levels of identification with that group effect their response to threat.

Work within SIT and SCT has provided extensive evidence that the degree to which individuals value, or identify with, a social group affects how they respond to group-relevant

information (e.g., threat to the group's value; Branscombe, Ellemers, Spears, & Doosje, 1999).

This work also shows that when people identify with their social groups, they come to strongly

endorse the group's ideology (Hogg & Reid, 2006). Finally, recent work has found that

identification with a group can promote perceptions of personal control (Greenaway et al., 2015).

**The Self and the Group**

Social identity theory states that one's s*ocial identity* is that part of the individual's self-

concept derived from their group memberships (Tajfel & Turner, 1979). Rather than seeing

groups as simply a collection of individual people, or intergroup relations as an abstraction of

interpersonal relations, SIT argues that groups are psychologically meaningful identities that can

help define an individual's sense of self (Haslam et al., 2010).

Self-categorization theory (SCT; Turner et al., 1987) builds upon SIT to propose that

identifying with a group causes individuals to think and behave as they believe a "typical" group

member should. When a person aligns with a social identity, the individual begins to think in

terms of *we* instead of *I*. As a result, individuals begin to see themselves as less of a distinct

person and more as an interchangeable representative of the group (i.e., depersonalization;

Abrams, & Hogg, 1990). Also important is the degree to which the individual already identifies

with that social group when faced with a group-relevant social context (Doosje & Ellemers,

1997; Turner, 1999) as this can shape how group-relevant information is interpreted (i.e., seeing

a connection to their "self" or disregarding the information as irrelevant to their "self"; Oakes,

Haslam, & Turner, 1994).

SCT and SIT often use the terms "low-identifiers" and "high-identifiers" to conceptually

differentiate those who only somewhat value a group identity from those who highly value it

(Branscombe, Ellemers, Spears, & Doosje, 1999; Turner, 1999). In response to information that

threatens the group's value on a certain dimension, low identified group members will often distance themselves from the group by seeing themselves as distinct individuals (Wann & Branscombe, 1991). High-identified group members, on the other hand, often respond by increasing their identification and commitment to the group's norms and beliefs. In a study on collective self-esteem, Branscombe and Wann (1994) found that compared to low identified participants, those who were highly identified with the social group *Americans* experienced decreased collective self-esteem (CSE) following a threat (vs. no threat) to their social group's value (i.e., an American losing a boxing match to a Russian). This decrease in CSE directly led to increased derogation of Russians, which in turn led to a subsequent increase in CSE. Conversely, low identified group members did not significantly differ in either CSE or outgroup derogation between experimental conditions. Highly identified group members responded to a group-based threat by defending their group and derogating threatening outgroup members. This allowed the high identifiers to alleviate the threat to their collective self-esteem and reestablish their feelings of group worth. Low identified individuals in contrast did not seem to suffer from the threat (no significant loss of CSE) nor were they motivated to derogate any outgroups. This work illustrates how responses to a group-based threat vary by the degree to which group members find that social identity meaningful.

**Group Identity and Ideology.** As individuals increase their identification with a social group, they also increase their support of that group's ideological beliefs (Hogg & Reid, 2006). For example, researchers have found that high identifiers are more supportive of the group's ideology and actions than low identifiers (i.e., authoritarianism; protests; Hogg, Meehan, & Farquharson, 2010). In another series of studies, Palestinian participants who highly identified with their national group endorsed more extremist ideological beliefs and behaviors pertaining to

the Palestinian/Israeli conflict (i.e., use of suicide bombings to attack Israelis) compared to those lower in identification. At the same time, Israeli participants who highly identified with their national group more strongly endorsed the use of strong military tactics to combat the Palestinian forces. High identifiers from both of these national groups supported extremist ideological beliefs (held by a subset of the larger Palestinian and Israeli population) and actions reflecting their ideological stance (Hogg & Adelman, 2013).

In sum, social identity is an aspect of the self that is defined by the social groups that people value. The groups that people identify with and are as much a part of their identity as their personal self. Identifying with social groups promotes psychological cohesion between group members with regards to social norms, attitudes and behaviors (Hogg & Reid, 2006). Individuals who highly identify with their group accept and express their group's ideology more so low identifiers (Hogg & Adelman, 2013; Hogg, Meehan, & Farquharson, 2010).

How much individuals identify with a group is not only related to how they react to a group-based threat, or how much they endorse a group's shared beliefs, but is also directly related to their feelings of personal control.

**Personal Control via the Group**

Earlier research from a SIT/SCT perspective addressed how identifying with a group can promote perceptions of control through collective action and group-based efficacy (Haslam, Postmes, & Ellemers, 2003; Turner, 1982; Van Zomeren, Spears, Fischer, & Leach, 2004). More recent research has begun to examine the relationship between social identification and perceptions of personal rather than collective control.

Greenaway et al. (2015) shows that people can gain a sense of personal control through identification with a social group. In a series of studies the authors found a connection between

social identification, personal control and positive health outcomes. Using the world values survey, the authors found that across 47 countries, group identification lead to increased life satisfaction and happiness (self-report) and that perceived personal control positively moderated this relationship. In another study, the authors found that increased identification with one's political party predicted greater life satisfaction, and this effect was mediated by increased perceptions of personal control. For both U.S. Democrats and Republicans who differed in whether their group had recently sustained a major loss or not, there was a direct link between social identity and perceived personal control; this effect was not moderated by party preference. In another study, the authors employed a longitudinal design and a manipulation of social identity. They found that higher levels of social identification led to increased feelings of personal control, and that perceptions of personal control directly led to improved health. These findings indicate that people are able to gain a sense of personal control from their group memberships, and that this control has a direct bearing on their health.

When people identify with their group they feel a greater sense of personal control (Greenaway et al., 2015). However, increased social identification is associated with many different outcomes, such as the expression of ideology (Hogg & Reid, 2006); the derogation of outgroups (Outten, Schmitt, Miller & Garcia, 2012); and even feelings of collective guilt (Wohl, Branscombe, & Klar, 2006). While prior research has shown that increased identification leads to greater perceived control, it has not specified how social identities ultimately provide this sense of control. Finally, like CCT, this work has yet to look at the specific case of control loss due to group membership.

**Current Research**

The current research was designed to examine the effect of group identification on how individuals compensate for group-based threats to their personal control. As already stated, previous work has yet to integrate social identification processes into a framework of control compensation through ideology. While past research within CCT has demonstrated that threats to personal control appear to motivate the endorsement of a variety of external sources of structure (e.g., Kay et al., 2008), and specifically that ideology is endorsed following a threat to control (Goode et al., 2014), it has neglected social identification as a factor in the compensation process.

Similarly, SIT and SCT offer a comprehensive account of how social identification affects 1) individuals' responses to a group-based threat (Branscombe et al., 1999; Branscombe & Wann, 1994); 2) endorsement of ideology (Hogg & Reid, 2006); and 3) perceptions of personal control (Greenaway et al., 2015). However, this research has not yet put these pieces together. The current studies draw upon the insight that a valued social identity can provide the resources to cope with threat based on group membership. Specifically, whether group-normative ideologies provide a means of coping with group-based threats to control.

The present studies are comprised of American samples from the social group *women.* All three studies investigated how women living in the U.S. responded to threatening information regarding their group's experience in the occupational sphere. Women have a long history of inequality in the American workforce (e.g., lower wages, lower rate of promotions, sexual harassment; Acker, 2006). Consequently, many women are likely to have felt a lack of personal control due to sexism in the workplace. Study 1 investigates how levels of gender-identification moderate women's endorsement of gender-egalitarianism (vs. benevolent sexism) following a group-based threat to control. Study 2 assesses women's perceptions of structure and

order for a gender equal society following a group-based threat (vs. no threat) to personal control, and if identification moderates this relationship. Study 3 investigates whether levels of identification with the group *women* interacts with a group-based threat to control on any effects of endorsing gender egalitarianism on restoring perceptions of personal control.

## Study 1

Study 1 investigated the moderating effect of group identification on ideology endorsement for control compensation. Participant identification with the social group *women* was measured first to examine how differences in gender identification might affect responses to a group-based threat. Next, personal control was manipulated via group-based information such that participants were shown information indicating that women in the U.S. have experienced an increase (vs. decrease) in sexual discrimination incidents across several years within the workplace.

Motivation to compensate for a loss of personal control through increased endorsement of a group-normative ideology, but not of a non-normative ideology was then tested. Gender egalitarianism, or the belief that women and men should have equal footing in society, was used as a group-normative ideology. In a recent national poll, researchers found that a majority of women in the U.S. support this belief (Wike & Simmons, 2015). In contrast, benevolent sexism, or the belief that that women should have restricted roles based upon natural gender differences, was included as a representation of a non-normative ideology. It is hypothesized that:

*H1: Highly identified women will endorse gender egalitarianism more than benevolent sexism following a group-based threat to their personal control.*

*H2: Highly identified women will endorse gender egalitarianism more than lowly identified women following a group-based threat to personal control.*

*H3: Highly identified women will endorse gender egalitarianism more after a threat to personal control than highly identified women who did not experience a threat.*

**Method**

**Participants.** One-hundred sixty women residing in the United States (U.S.) participated via Amazon's Mechanical Turk online service for a small financial incentive ($0.45). Nine participants were dropped from the analysis due to their failure to complete over 50% of the survey materials. The final sample ($N = 151$) ranged in age from 18 to 77 ($M = 37.17$, $SD = 13.61$). Political ideology was measured on a scale from 0 = *completely liberal* to 100 = *completely conservative* and the sample was slightly skewed liberal ($M = 42.13$, $SD = 31.77$). When asked to indicate their ethnicity, 76.6% of participants self-categorized as White; 12.1% as Asian; 5.6% as Black; 4.8% as Latina; and 0.8% did not indicate their ethnicity.

**Gender identity.** Individual differences in gender identification were assessed using 4 items modified from Luhtanen & Crocker, 1992; "Overall, being a woman has very little to do with how I feel about myself (reverse scored);" "Being a woman is unimportant to my sense of what kind of person I am (reverse scored);" "Being a woman is an important reflection of who I am;" "In general, being a woman is an important part of my self-image." Participants were asked to indicate their agreement using a 7-point scale (1 = *Strongly Disagree*; 7 = *Strongly Agree*) for these (and all subsequent) items. These items formed a reliable composite ($\alpha = .82$) and scores were averaged (See Appendix A).

**Group-based manipulation of personal control.** Participants were randomly assigned to view one of two fabricated reports ostensibly from the United States Department of Justice describing rates of sexual discrimination against American women in the workforce over three years (2010-2013). In the *group-based control threat* condition participants saw a graph showing

rates of sexual discrimination as increasing. The accompanying text emphasized this trend: *"Recent data from the National Institute of Justice shows that rather than getting better or staying the same over time, things are getting worse for women in the workforce. A new report states that verified and adjudicated incidents of sexual discrimination in the workforce has increased over time. Occupational discrimination prevents women from moving up in salary and/or position and at this point women have less control over their economic and occupational futures as in times past."*

Participants in the group-based control boost condition saw a graph showing rates of sexual discrimination against women as decreasing. The accompanying text emphasized this trend: *"Recent data from the National Institute of Justice shows that rather than getting worse or staying the same over time, things are getting better for women in the workforce. A new report states that verified and adjudicated incidents of sexual discrimination in the workforce has decreased over time. Occupational discrimination prevents women from moving up in salary and/or position and at this point women have much more control over their economic and occupational futures as in times past."*[1] (See Appendix B).

**Ideology**. Each participant completed measures of both gender egalitarianism and benevolent sexism with their order of presentation counterbalanced (See Appendix C). To assess endorsement of gender egalitarianism, participants were asked to rate their agreement with 6 items modified from both the egalitarianism and inegalitarianism scale (Klugel & Smith, 1986) and the American national election studies egalitarianism scale (Feldman, 1988). For example, "If women were treated more equally in this country we would have fewer problems;" "There should be more focus on equality of outcomes for women in today's society;" "We have gone too

far in pushing equal rights for women in this country (reverse scored)." These items formed a reliable composite ($\alpha = .90$).

To assess endorsement of benevolent sexism, participants were asked to rate their agreement with 6 items from ambivalent sexism inventory's benevolent sexism sub-scale (Glick & Fiske, 1996). For example, "Most women interpret innocent remarks as sexist;" "Women should be cherished and protected by men;" "Women exaggerate problems at work." These items formed a reliable composite ($\alpha = .85$). There was a significant, negative, relationship between scores on gender egalitarianism and benevolent sexism, $r = -.66$, $p < .001$.

**Manipulation of personal control.** Using a pilot sample not included in main study ($N = 82$), we randomly assigned women participants to view either the *group-based control threat* or the *group-based control boost* manipulation. Following exposure to the manipulation, participants indicated their agreement with 4 items modified from the Mastery scale (Pearlin et al., 1981; $\alpha = .89$) "I feel that I have a great degree of control over what happens to me in my life;" "I believe that what happens to me in the future mostly depends on me;" "I feel a high sense of personal control over my life;" and "I believe that I can do just about anything I really set my mind to." These items were embedded in a larger list of filler items purportedly used to assess individual personality characteristics (See Appendix E).

## Results

See Table 1 for a list of correlations between variables of interest and demographic variables.

**Manipulation check.** The effect of the manipulation of sexual discrimination on participants' levels of perceived personal control was tested using our pilot sample. As expected, participants in the *group-based threat* condition indicated lower perceived personal control ($M =$

4.70, *SD* = 1.09) in comparison to participants in the *group-based boost* condition (*M* = 5.32, *SD* = 0.84), *F*(1, 79) = 8.29, *p* = .005, $\eta^2$ = .09.

**Gender identification.** The effect of random assignment to experimental condition was tested to ensure there was no relationship between degree of gender identification and experimental condition. This was done due to the prediction that gender identification would moderate the effects of the experimental manipulation on ideology endorsement. A one-way ANOVA confirmed there was no significant difference by experimental condition on participants' gender identification, *F*(1, 150) = 1.36, *p* = .17. Therefore gender identification was employed as a moderator in all subsequent analyses.

**Ideology.** A repeated measures ANOVA indicated that across conditions, participants were more supportive of gender egalitarianism (*M* = 5.58, *SD* = 1.33) than benevolent sexism (*M* = 3.20, *SD* = 1.37, *p* < .001). Linear regression analysis indicated a significant interaction of gender identification (mean centered) and experimental condition (dummy-coded as 0 = *control boost*; 1 = *control threat*) on gender egalitarianism, *b* = .48, *SE* = 0.22, *t*(146) = 2.24, *p* = .028. Analysis did not reveal a main effect of condition (*b* = .14, *p* = .50) or gender identification (*b* = .02, *p* = .91) on gender egalitarianism.

Probing the interaction between gender identification and experimental condition, gender identification predicted greater endorsement of gender egalitarianism in the *group-based control threat* condition (*b* = 0.50, *SE* = 0.13, *t*(72) = 3.98, *p* < .001) but had no effect in the *group-based control boost* condition (*b* = 0.016, *SE* = .17, *t*(76) = 0.10, *p* = .92). Simple effects tests of experimental condition were conducted at both high and low levels of gender identification. For participants who highly identified with *women* (+1 SD) those in the *group-based control threat* condition endorsed gender egalitarianism significantly more than those in the *group-based*

*control boost* condition ($b = 0.62$, $SE = 0.30$, $t(146) = 2.07$, $p = .04$). However, for participants low in identification with women (-1 SD), there was no significant difference in gender egalitarianism by experimental condition ($b = -0.34$, $SE = 0.33$, $t(146) = -1.11$, $p = .27$; See Figure 1).

Next, gender identification, experimental condition, and their interaction term were regressed onto benevolent sexism. Analysis did not reveal a main effect of experimental condition ($b = -0.27$, $p = .22$) or gender identification (mean centered; $b = 0.24$, $p = .11$) on benevolent sexism. As expected, analysis indicated a significant interaction, $b = -0.59$, $SE = 0.22$, $t(146) = -2.65$, $p = .009$. Probing this interaction within each experimental condition found that gender identification predicted significantly less benevolent sexism in the *group-based control threat* condition ($b = -0.36$, $SE = 0.15$, $t(72) = -2.41$, $p = .02$) but had no effect in the *group-based control boost* condition ($b = 0.24$, $SE = .16$, $t(76) = 1.47$, $p = .15$).

Simple effects tests of experimental condition were conducted at both high and low levels of gender identification. For participants who highly identified with *women* (+1 SD), those in the *group-based control threat* condition endorsed benevolent sexism significantly less so than those in the *group-based control boost* condition ($b = -0.86$, $SE = 0.31$, $t(146) = -2.76$, $p = .006$). However, for participants low in identification with women (-1 SD), there was no significant difference in benevolent sexism by experimental condition ($b = 0.32$, $SE = 0.32$, $t(146) = 1.02$, $p = .30$; See Figure 2).

## Discussion

Study 1 provided evidence that a group-based threat can lower perceptions of personal control (pilot data), indicating that a group-based phenomena can impact individual level outcomes. Study 1 also showed that identification with the group prior to the experience of a

group-based threat moderates how individuals respond. In the *group-based control threat* condition, identification significantly predicted increased egalitarianism and decreased benevolent sexism, effects not present in the *group-based control boost* condition (H1 & H2). Furthermore, at high levels of group identification (+1 SD) there was a condition effect such that these participants were more supportive of egalitarianism, and more rejecting of benevolent sexism, following a group-based control threat vs. a boost (H3). These findings support the argument that highly identified group members are motivated to compensate for group-based threats to personal control by adhering to group-normative ideologies specifically, and not just any ideology that deals with social structure.

One interpretation of the results of Study 1 could be that the highly identified women increased their endorsement of gender egalitarianism simply because this belief matched the source of the group-based threat (sexism). This would imply that the effects of condition on egalitarianism endorsement was not due to the ideology's ability to provide a perception of order and structure, a function of compensatory sources predicted by CCT. The match between the source of the threat and the ideology endorsed is in line with prior theorizing on ideology and compensation. CCT argues that when available, the most applicable ideology for a specific threat will be used (Kay & Eibach, 2013). For example, it is more likely that an individual who feels a loss of personal control over their "love life" would increase belief in an ideology of "soul-mates" to compensate rather than increase endorsement of an ideology of free market capitalism, as free market capitalism does not often have much to say regarding true love. Yet, an ideology's relation to the source of a control threat does not exclude its ability to provide a sense of social structure for the individual. The effect of a group-based threat to personal control on the

perceived structure and order of the social relations an ideology represents, as well as its direct effect on ideology endorsement, was tested in Study 2 to provide evidence for this claim.

## Study 2

Study 2 investigated the moderating effect of group identification on how a group-based control threat might influence ratings of structure ascribed to a social system represented by a group-normative ideology (i.e., a gender equal society represented by gender-egalitarianism). Study 2 also investigated how perceptions of structure would influence the endorsement of a group-normative ideology following a threat to personal control. The same group-based control manipulations used in Study 1 were employed. The degree to which a gender-equal society is structured and ordered was measured next, followed by the endorsement of gender egalitarianism. It was expected that:

> *H4: After exposure to a group-based threat to personal control, highly identified women will perceive a gender equal society as more structured than lowly identified women.*
>
> *H5: Highly identified women who are exposed to a group-based control threat will perceive a gender equal society to be more structured in comparison to highly identified women whose control was not threatened.*

and that;

> *H6: For highly identified women, the perceived structure of a gender equal society will mediate the effect of a group-based threat to control on gender egalitarianism.*

## Method

**Participants.** One-hundred sixty-eight women residing in the United States participated via Amazon's Mechanical Turk online service for a small financial incentive ($0.45). Seven participants were dropped from analysis due to their failure to complete at least 50% of the study

materials. The final sample ($N$ = 161) ranged in age from 18 to 73 ($M$ = 38.17, $SD$ = 12.85). Political ideology was measured on a scale from 0 = *completely liberal* to 100 = *completely conservative*, and the sample was skewed somewhat liberal ($M$ = 38.51, $SD$ = 30.11). When asked to indicate their ethnicity, 79.2% of participants self-categorized as White; 9.4% as Asian; 5.9% as Black; 5.1% as Latina; and 0.4% did not indicate their ethnicity.

**Gender identification.** Individual differences in gender identification were assessed using the 4-item measure from Study 1. The items again formed a reliable measure ($\alpha$ = .89).

**Group-based manipulation of personal control.** Participants were randomly assigned to view one of the two group-based control manipulations from Study 1.

**Structure of gender equality.** Two items assessed how structured participants perceived a gender-equal society to be (See Appendix D). Participants were asked: "Thinking about a society that is completely gender-equal, how structured do you think that society would be?" and "Thinking about a society that is completely gender-equal, how chaotic do you think that society would be (reverse scored)?" Each question was answered using a 7-point scale with 1 = *not at all stable (chaotic)* and 7 = *completely stable (chaotic)*. These 2 items were highly correlated, $r$ = .65, $p$ < .001, and scores were combined.

**Gender egalitarianism**. Each participant filled out the same 6-item measure of gender egalitarianism ($\alpha$ = .89) from Study 1.

## Results

See Table 2 for a list of correlations between variables of interest and demographic variables.

**Gender identification.** A one-way ANOVA confirmed there was no significant difference by experimental condition on participants' gender identification, $F(1, 159) = 0.92$, $p = .34$. Therefore gender identification was employed as a moderator in all subsequent analyses.

**Structure of gender equality.** Linear regression indicated a main effect of experimental condition ($b = 0.40$, $SE = 0.21$, $t(157) = 2.04$, $p = .04$), with participants in the *group-based threat* condition perceiving more structure to gender equality ($M = 5.50$, $SD = 1.22$) than participants in the *group-based control boost* condition ($M = 5.07$, $SD = 1.54$). Analysis did not reveal a significant effect of gender identification ($b = -0.22$, $p = .14$) on perceived structure of gender equality. There was a significant interaction of gender identification (mean centered) and experimental condition (dummy-coded as 0 = *control boost*; 1 = *control threat*) on the perceived structure of a gender equal society, $b = 0.62$, $SE = 0.21$, $t(157) = 2.87$, $p = .005$.

Probing the interaction between gender identification and experimental condition, gender identification predicted greater perceived structure of gender equality in the *group-based control threat* condition ($b = 0.40$, $SE = 0.13$, $t(80) = 2.98$, $p = .004$) but gender identification did not reach significance in the *group-based control boost* condition ($b = -0.22$, $SE = .17$, $t(77) = -1.31$, $p = .19$).

Simple effects tests of experimental condition were conducted at both high and low levels of gender identification. For participants who highly identified with *women* (+1 SD) those in the *group-based control threat* condition perceived a gender equal society as significantly more structured as compared with those in the *group-based control boost* condition ($b = 1.04$, $SE = 0.31$, $t(157) = 3.43$, $p < .001$). However, for participants low in identification with women (-1 SD), there was no significant difference in how structured they perceived a gender equal society

to be between experimental conditions ($b$ = -0.19, $SE$ = 0.31, $t(157)$ = -0.65, $p$ = .52; See Figure 3).

**Gender egalitarianism.** Regression analysis did not reveal a main effect of condition ($b$ = 0.18, $p$ = .37) or gender identification ($b$ = -0.22, $p$ = .12) on gender egalitarianism. Analysis indicated a significant interaction between gender identification (mean centered) and experimental condition (dummy-coded as 0 = *control boost*; 1 = *control threat*) on gender egalitarianism, $b$ = 0.53, $SE$ = 0.20, $t(157)$ = 2.62, $p$ = .01.

Probing this interaction within each experimental condition, gender identification predicted greater support for gender egalitarianism in the *group-based control threat* condition ($b$ = 0.31, $SE$ = 0.14, $t(80)$ = 2.21, $p$ = .03) but not in the *group-based control boost* condition ($b$ = -0.22, $SE$ = .15, $t(77)$ = -1.51, $p$ = .14). Simple effects tests of experimental condition were conducted at both high and low levels of gender identification. Highly identified women (+1 SD) in the *group-based control threat* condition endorsed gender egalitarianism significantly more than those in the *group-based control boost* condition ($b$ = 0.70, $SE$ = 0.28, $t(157)$ = 2.45, $p$ = .01). However, there was no significant difference in gender egalitarianism by experimental condition for low identifiers ($b$ = -0.36, $SE$ = 0.29, $t(157)$ = -1.26, $p$ = .21; See Figure 4).

**Moderated mediation.** A test of whether gender equality mediated the relationship between gender identification and gender egalitarianism in the *group-based control threat* condition, but not in the *group-based control boost* condition was conducted (Figure 5). Using Model 8 of the PROCESS macro (Hayes, 2013) with 10,000 bias-corrected bootstrap resamples, two regression equations were computed. The first equation used gender identification, experimental condition, and their interaction term to predict perceived structure of gender equality. The second equation used perceived structure of gender equality, gender identification,

experimental condition, and the interaction of identification by condition to predict gender egalitarianism (Figure 5, Panel A).

As shown earlier, the interaction between gender identification and experimental condition on perceived structure of gender equality was significant. Perceived structure of gender equality also significantly predicted gender egalitarianism, $b = .51$, $SE = .06$, $t(159) = 8.27$, $p <$ .001. The index of moderated mediation [2] (Hayes, 2015) was significant, .31 [.09, .59]. [3] Next the indirect effects in both experimental conditions was tested using Model 4 of the PROCESS macro (Hayes, 2013) with 10,000 bias-corrected bootstrap resamples. As displayed in panels B and C of Figure 5, perceived structure of gender equality mediated the effect of gender identification on egalitarianism in the *group-based control threat* condition, indirect effect = .19, [.05, .42], but did not in the *group-based control boost* condition, indirect effect = -.11 [-.31, 04].

**Discussion**

Study 2 replicated the effect of gender identification moderating the endorsement of gender egalitarianism following a group-based threat to personal control from Study 1. Highly identified women (in comparison to low identifiers) were more supportive of gender egalitarianism after exposure to a group-based control threat (H1). At high levels of identification (+1 SD) women exposed to a group-based control threat were more supportive of egalitarianism than women not exposed to a threat (H2). Evidence that threat to control motivated the perception of structure and order in a social system was also found. Specifically, highly identified women perceived a gender-equal society as more structured and ordered in comparison to low identifiers following a group-based threat to personal control (H4). Additionally, at high level of identification (+1 SD) women exposed to threat perceived a gender equal society to be more structured and ordered than did women not exposed to threat (H5).

Finally, for highly identified women who experienced a group-based threat to personal control, increased perceptions of structure for a gender equal society led to an increase in egalitarianism (H6). This effect is important as it bridges CCT and SIT/SCT.

CCT emphasizes that the reason individuals can use external sources for control compensation is due to those sources' ability to provide structure and order to the social world (Kay, Sullivan, & Landau, 2014). SIT emphasizes that group identification influences the degree to which individuals adhere to group beliefs following a threat (Branscombe & Wann, 1994; Hogg & Adelman, 2013). Study 2 begins to integrate these perspectives by showing that social identification influences the degree to which individuals imbue a social system with structure and order following a loss of personal control (as predicted by SIT) and that this perceived structure then directly leads to an increase in ideology endorsement (as predicted by CCT).

Up to this point, the studies have shown that group-based threats to personal control motivate highly identified individuals to increase their endorsement of a group-normative ideology, and that this same effect is absent for low identifiers (Study 1 & Study 2). The results also suggest that an increase in perceived structure of the social system that an ideology represents can explain the effect of a threat to control on ideology endorsement. However, neither Study 1 nor 2 has demonstrated that this process actually works to restore a sense of personal control for the individual. The extent to which this process is effective in restoring control is the focus on Study 3.

If gender egalitarianism is used as a compensation source, then there ought to be an effect of endorsement on subsequent feelings of control. Although theorized, this restoration process is not commonly addressed in research on compensatory control, or in research on social identity

and personal control. A direct test of the effectiveness of ideology endorsement on resulting perceptions of personal control was conducted in Study 3.

## Study 3

Study 3 was designed to address the effect of ideology endorsement, following a group-based control threat, on subsequent perceptions of personal control. The same group-based control manipulation used in Studies 1 and 2 was employed to manipulate perceived control. Gender egalitarianism was measured next, followed by a measure of perceived personal control.

It was expected that the effect of identification and threat to control on gender egalitarianism found in Studies 1 and 2 would be replicated. It was also expected that identification and threat would interact to predict perceptions of personal control *after* ideology endorsement such that;

> *H7: Highly identified women will perceive more personal control than lowly identified women in the group-based threat to personal control experimental condition.*
>
> *H8: Highly identified women will perceive more personal control following a threat to control than highly identified women who did not experience a threat.*

Finally, in support of the argument that ideology endorsement can restore control following a threat it was expected that;

> *H9: For highly identified women, gender egalitarianism will mediate the effect of a group-based threat to control on increased perceived personal control.*

## Method

**Participants.** Two-hundred women residing in the United States participated via Amazon's Mechanical Turk online service for a small financial incentive ($0.45). Six participants were dropped from analysis due to their stated belief that the information in the

study manipulation was false. Four additional participants were dropped due to their failure to complete at least 50% of the study materials. The final sample ($N$ = 190) ranged in age from 19 to 67 ($M$ = 37.63, $SD$ = 12.79). Political ideology was measured on a scale from 0 = *completely liberal* to 100 = *completely conservative*, and the sample was skewed liberal ($M$ = 37.47, $SD$ = 27.24). When asked to indicate their ethnicity, 80.5% of participants self-categorized as White; 7.4% as Black; 5.3% as Asian; 3.7% as Latina; .05% as Native American; and 2.6% as "Other".

**Gender identification.** Individual differences in gender identification were assessed using the same 4 items from Studies 1 and 2. The items again formed a reliable measure ($α$ = .88).

**Group-based manipulation of personal control.** Participants were randomly assigned to view one of the two group-based control manipulations from Studies 1 and 2.

**Gender egalitarianism**. Each participant filled out the same 6-item measure of gender egalitarianism ($α$ = .85) from Studies 1 and 2.

**Perceived personal control.** Each participant filled out the same 4-item measure of perceived personal control (Appendix E) used to assess manipulation effectiveness from Study 1 ($α$ = .84).

### Results

See Table 3 for a list of correlations between variables of interest and demographic variables.

**Gender identification.** A one-way ANOVA confirmed there was no significant difference by experimental condition on participants' gender identification, $F(1, 188)$ = 1.23, $p$ = .27. Therefore gender identification was employed as a moderator in all subsequent analyses.

**Gender egalitarianism.** Regression analysis did not reveal a main effect of condition ($b$ = 0.13, $p$ = .38) or gender identification ($b$ = 0.12, $p$ = .20) on gender egalitarianism. As predicted, the interaction between gender identification (mean centered) and experimental condition (dummy-coded as 0 = *control boost*; 1 = *control threat*) was significant on gender egalitarianism, $b$ = 0.49, $SE$ = 0.15, $t(186)$ = 2.67, $p$ = .008.

Probing this interaction between gender identification and experimental condition, gender identification predicted greater support for gender egalitarianism in the *group-based control threat* condition ($b$ = 0.53, $SE$ = 0.10, $t(91)$ = 5.07, $p < .001$) but not in the *group-based control boost* condition ($b$ = 0.12, $SE$ = .10, $t(97)$ = 1.69, $p$ = .25). Simple effects tests of experimental condition were conducted at both high and low levels of gender identification. For highly identified women (+1 SD), those in the *group-based control threat* condition endorsed gender egalitarianism significantly more than those in the *group-based control boost* condition ($b$ = 0.54, $SE$ = 0.21, $t(186)$ = 2.57, $p$ = .01). However, for low identifiers (-1 SD), there was no significant difference in gender egalitarianism by experimental condition ($b$ = -0.27, $SE$ = 0.22, $t(186)$ = -1.28, $p$ = .19; See Figure 6).

**Perceived personal control**. I next regressed scores of *perceived personal control* onto experimental condition (dummy-coded as 0 = *control boost*; 1 = *control threat*), gender identification (mean centered) and their interaction term. Analysis did not reveal a main effect of condition ($b$ = 0.05, $p$ = .69) or of gender identification ($b$ = 0.07, $p$ = .35). As predicted, the interaction between gender identification and experimental condition was significant, $b$ = 0.40, $SE$ = 0.13, $t(186)$ = 3.15, $p$ = .002.

Probing this interaction of gender identification by experimental condition, I found that gender identification predicted greater perceived personal control in the *group-based control*

*threat* condition ($b = 0.48$, $SE = 0.09$, $t(91) = 5.03$, $p < .001$) but not in the *group-based control boost* condition ($b = 0.07$, $SE = 0.08$, $t(97) = 0.88$, $p = .37$). Simple effects of experimental condition were conducted at both high and low levels of gender identification. High identifiers (+1 SD) in the *group-based control threat* condition perceived themselves as having significantly more personal control than those in the *group-based control boost* condition ($b = 0.46$, $SE = 0.18$, $t(186) = 2.57$, $p = .011$). Conversely, low identifiers (-1 SD) in the *group-based control threat* condition perceived themselves as having significantly less personal control compared with those in the *group-based control boost condition*, $b = -0.36$, $SE = 0.18$, $t(186) = -1.96$, $p = .05$ (See Figure 6).

**Moderated mediation.** Next, a test was run to determine if gender egalitarianism mediated the relationship between gender identification and perceived personal control in the *group-based control threat* condition, but not in the *group-based control boost* condition (Figure 7). Two regression equations were computed Using Model 8 of the PROCESS macro (Hayes, 2013) with 10,000 bias-corrected bootstrap resamples. The first equation used gender identification, experimental condition, and their interaction term to predict gender egalitarianism. The second equation used gender egalitarianism, gender identification, experimental condition, and the interaction of identification by condition to predict perceived personal control (Figure 7, Panel A).

As noted earlier, the interaction between gender identification and experimental condition on gender egalitarianism was significant. Gender egalitarianism also significantly predicted perceived personal control, $b = .21$, $SE = .06$, $t(188) = 3.40$, $p = .001$. The index of moderated mediation (Hayes, 2015) was significant, .08 [.02, .19]. [4] Next, the indirect effects in both experimental conditions were examined using Model 4 of the PROCESS macro (Hayes, 2013)

with 10,000 bias-corrected bootstrap resamples. As displayed in panels B and C of Figure 7, gender egalitarianism mediated the effect of gender identification on perceived personal control in the *group-based control threat* condition, indirect effect = .12 [.02, .25], but did not in the *group-based control boost* condition, indirect effect = .01 [-.01, 07].

### Discussion

Study 3 provided consistent support for my predictions. Replicating the findings from Studies 1 and 2, highly identified (vs. lowly identified) women were more supportive of gender egalitarianism following a group-based threat to personal control (H9). Similarly, at high levels of gender identification (+1 SD), women were more supportive of egalitarianism following a threat to personal control compared to those not threatened (H10).

Study 3 also provided evidence for the compensation process through a group-normative ideology. Highly identified women reported *more* perceived personal control after exposure to a group based-control threat in comparison to low identifiers in the threat condition (H7) and in comparison to highly identified women not exposed to threat (H7). On the surface, this effect may seem counterintuitive as a group-based control threat is expected to lower control rather than increase it. However after modeling the moderated-mediation effect of identification, threat, and egalitarianism on perceived personal control, the results provide clear support for the predictions. Following a group-based threat to personal control, highly identified women were able to compensate for this loss by increasing their endorsement of gender egalitarianism. This increased endorsement of gender egalitarianism then served to restore perceptions of personal control. Conversely, lowly identified women were left feeling less personal control in the threat condition in comparison to their counterparts not exposed to threat.

This study provides evidence that compensatory endorsement of a group-normative ideology increases feelings of personal control. While research on compensatory control has shown that control threat leads to increased endorsement of external systems or beliefs, and research on social identity has shown that identification directly influences perceived control, this study brings both of these effects together to show the full process of threat - to compensation - to restoration. These data explain in part why highly identified group members endorse their group's normative beliefs and provides a clear demonstration of the effectiveness of ideology for control compensation.

**General Discussion**

Across three studies, group identification moderated the effects of a group-based threat to personal control on the compensation process. Specifically, highly identified women (vs. low) responded to a group-based threat to personal control with greater endorsement of a group-normative ideology (Studies 1, 2, & 3) and a greater rejection of a non-normative ideology (Study 1). Women high in gender identification endorsed gender egalitarianism (group-normative ideology) more so after a threat than when a threat was not present (Studies, 1, 2, & 3), providing evidence for the motivated endorsement of ideology following a threat to personal control. This effect supports the compensatory argument for ideology endorsement whereby individuals experiencing a loss of personal control are motivated to increase their support for an external source of structure and order. In these studies women did not simply support their group's ideology because they were exposed to a group-based threat to control; nor did they merely endorse the ideology because they were highly identified with their group. Instead a more nuanced account was supported where an interaction between high identification and the presence of a threat to control resulted in a motivated increase in ideology endorsement.

In addition, high identified women perceived more structure in a social system supported by their group's ideology following a group-based threat to personal control. This increased perception of structure directly led to an increased endorsement of the group's ideology. This effect was significant when comparing women high and low in gender identification after a control threat, as well as when comparing women high in identification across experimental conditions. Similar to the effect found for ideology endorsement, perceptions of structure were dependent both upon the strength of group identity held by the participant, as well as the presence (or absence) of a group-based threat to control. This suggests that despite general perceptions that one social system is more structured than another (e.g., hierarchy vs. equality; Friesen et al., 2014), identification and the presence of a threat (or lack of one) impacts what social systems are seen as ordered and useful for compensation.

Finally, by testing whether or not the motivated endorsement of a group-normative ideology actually compensates for a loss of personal control, the restoration function of such ideology was revealed. The results from Study 3 confirm that endorsement of group-relevant ideology can restore perceived control. A group-based control threat motivated increased support for a group-normative ideology, which in turn partially explained the increase in perceived personal control. Although these studies provide new insight into the ways in which social identity influences the use of ideology to effectively compensate and restore feelings of personal control, they also point to fruitful avenues for future research.

**Limitations and Future Directions**

**Generalization**. All three studies reported were comprised of women participants living in the U.S., and as such the generalizability of these effects to other social groups may be limited. However, another set of studies does suggest the applicability of these findings to other

groups. For example, recent work (Goode, Keefer, Branscombe, & Molina, 2015) has found that following a group-based threat (as opposed to a neutral condition), American participants reported increased national identification, and meritocracy endorsement (a normative ideology in America regarding hard work leading to success). In this research, increased national identification directly led to increased endorsement of meritocracy. Furthermore, an additional study found that national identification and meritocracy acted as serial mediators of the effect of a group-based control threat predicting *increased* perceptions of personal control. This is further evidence that compensation through endorsement of a group-normative ideology can restore perceptions of personal control. This work found similar results as the ones reported here with a different social group (i.e., *Americans*); however these studies used group identification as a mediator rather than a moderator and as such their effects are not directly comparable. More research will need to be done to ensure that the process reported in this paper is generalizable to more social groups.

Similarly, we cannot conclude from these studies that *all* women in America will react in the same manner. As seen in the demographics of each study, these samples were primarily White and liberal. In contrast to the present samples, the population of women in the United States is much more diverse in terms of ethnicity and political ideology, not to mention occupation, religion, and many other factors. The argument to this point has assumed that higher identification with the group *women* increases endorsement of gender egalitarianism because this ideology is *normative to American women*, and indeed a national poll of women revealed that the majority support gender equality (Wike & Simmons, 2015). However, we cannot take the results from a national survey as proof that all women reject notions of natural gender differences or ideologies that support that view, or even that their definition of "equality" equates with the

dissolution of *any* gender difference in social standing. With a larger and more diverse sample, it would be possible to determine whether differences in the content of a social identity, or the way different members define what that group represents, moderates reactions to group-based threats and any compensation through ideology. For example, one common way of defining *women* is as a group that is equal to men and deserving of absolute social equality (the view taken in this paper; Lull, Mulac, & Rosen, 1983). On the other hand, another way of defining *women* is as a group that is *naturally different* from men and deserving of gender-specific social roles (Smith & Self, 1981). By taking both perspectives into account, research might find that individuals who subscribe to each type of gender identity *content* may highly identify with the social group *women* (based upon their definition of the group)*,* but hold diverging beliefs about the preferred structure of gendered relations (Skevington, & Baker, 1989). Consequently, while Study 1 showed that highly identified women in that sample rejected benevolent sexism following a group-based threat to personal control, women who strongly believe in natural differences between sexes may have embraced benevolent sexism following a control threat as a way of compensating.  Instead of assuming all highly identified women support gender equality, research taking into account alternative definitions of the group would permit a comparative investigation into how definitions of a group influence the use of ideology as a source of compensation, further emphasizing how important group identification processes are to ideological endorsement.

**Further action.** While this work provides a novel account of control restoration through identity and ideology (Study 3), future work will need to investigate to what extent restored control influences future actions. According to CCT, compensating for a loss of control first re-establishes the perception that the world is ordered and predictable, and then enables the

individual to confidently plan for future action. The compensatory process promotes the individual's sense of agency (i.e., their perceived ability to positively impact their environment) by situating the individual in an ostensibly predictable and unthreatening social environment (Kay, Sullivan, & Landau, 2014). Work within compensatory control theory has found that participants primed with the idea of structure (vs. randomness) express more willingness to engage in goal-oriented action (Studies 1 & 2) and are more likely to take steps toward achieving their goals (Study 3; Kay, Laurin, Fitzsimmons, & Landau, 2014). These findings support CCT's claim that compensation sources reassure the individual that the social world is meaningfully ordered and in turn re-establish optimism over the future (Kay, Laurin, Fitzsimmons, & Landau, 2014; Kay, Sullivan, & Landau, 2014). However this work does not look at how restored feelings of control affect expectations for future action, nor the influence of identity and ideology on the nature of said action. For instance, it may be that highly identified women in our samples, after endorsing gender egalitarianism and restoring perceived control, might have been more willing to engage in social action (e.g., work stoppage) aimed at decreasing sexual discrimination in the workplace (policy reform).

Prior social identity theorizing argues that a shared social identity helps group members to coordinate their actions and effect change within their social environment (Ellemers, de Gilder, & Haslam, 2004). Individuals within a group can combine their efforts in order to attain common goals and effectively reach desired outcomes (Haslam, Powell, & Turner, 2000). From this perspective, control is achieved through social influence and group cohesion, rather than social influence and cohesion being the result of increased control through ideology compensation. However, it is plausible that the reverse is true as well. Highly identified group members who perceive a lack of control due to their membership in a given group (e.g., sexism)

may use ideology to support their view of desired social relations (e.g., equality) and thereby restore feelings of lost control. This process may be at the heart of future action taken to address the source of the original threat (e.g., political movements).

Historical evidence offers some support for this argument. In 2014, social protest erupted in Ferguson, Missouri following the officer-involved killing of resident Michael Brown (Suhr & Salter, 2014). However, citizen unrest had been pervasive in this community prior to this event. Many Black residents felt victimized (arguably a state of low personal control) by the police and local government for decades over municipal infractions that led to fines or imprisonment. Admonished by critics as "kangaroo courts", local municipalities were able to extract fines from residents (often lower-class Black residents) for minor violations of municipal code such as wearing baggy pants. The protests that erupted following Mr. Brown's death were not only about that most recent event, but also about generations of inequality within the community. The protestors pushed class and race relations in Ferguson into the national spotlight. Social pressure by protestors and their allies outside of Ferguson, pushed Missouri Governor Jay Nixon to enact legislation to stop these municipalities from profiting off minor code violations. The State government also enacted over 40 measures aimed at reforming the use of force by Missouri police officers (Craven, Stewart, & Reilly, 2015). While it must be noted that the Ferguson protests represent a highly intricate social event rather than a controlled psychological experiment, it is plausible that in this case people who felt threatened due to their group membership reacted to that loss of control through group identification, endorsement of group-normative beliefs, and social action aimed at restoring their feelings of control. This historical event provides a template for future research on the use of control compensation for motivating subsequent political behaviors.

**Ingroup bias, outgroup derogation.** Finally, the present work failed to measure any attitudes or behaviors directed at outgroups following ideology endorsement or control restoration. This is an important question as previous work has shown that when the self is threatened via group membership, group members may derogate outgroup members as a way of assuaging the threat (Branscombe, Schmitt, & Harvey, 1999; Branscombe, & Wann, 1994; Huo & Molina, 2006). It is plausible that the ideology-bolstering effects of identification after a group-based control threat may also influence perceptions of out-group members. In the studies presented, women were told their group was suffering due to sexism in the workplace. While not stated directly, it is plausible that the participants understood the reported sexism to be perpetrated by male workers. Thus, the degree to which women identify with their group and use ideology to compensate for a threat, might also influence their attitudes toward the people they see as the root of their group's problems. While personal control may be restored by the compensation process, intergroup conflict may increase. This is not a critique of these hypothetical effects however, as depending upon the group's social standing, outgroup animosity may lead to greater conflict and ultimately social justice.

Research concerning collective action has suggested that there should be an emphasis on the acknowledgement of intergroup injustice. From this perspective, it is argued that disadvantaged groups should use collective action as a way to strengthen ingroup identity and cohesion, encourage the recognition of group-based injustice, and motivate further action aimed at changing the status quo (Dixon, Tropp, Durrheim, & Tredoux, 2010; Wright, & Lubensky, 2009). Collective action seeks to address group-based injustice through social reform. If group members use ideology to compensate for a loss of control due to group membership, and this in turn restores perceived control while at the same time increasing derogation of the outgroup

responsible for the threat, this process could promote future political action on behalf of the threatened group aimed at decreasing the outgroup's ability to threaten them in the future.

However, outgroup derogation is also likely to be expressed by dominant groups when a group-based threat is experienced. For instance, when members of high status social groups experience threat based upon group membership (e.g., loss of numerical majority in society), they often perceive the threat as coming from low status groups (Danbold & Huo, 2014) and respond with greater prejudice and discrimination aimed at maintaining or increasing their dominant position (Outten, Schmitt, Miller, & Garcia, 2012).

For subordinate groups, negative attitudes toward an outgroup might motivate collective action aimed at decreasing intergroup inequality, yet for dominant groups, this same process may work to reinforce group boundaries and more strongly maintain privilege. Future research will need to investigate 1) if outgroup derogation is present following compensation for a group-based threat to control, 2) if this effect is present for both subordinate and dominant groups following a threat, and 3) what possible outcomes might stem from outgroup derogation (e.g., collective action, intergroup aggression).

**Practical Implications**

The findings of the current studies provide evidence that when control is threatened based upon group membership, compensation through ideology is contingent upon social identification. After a threat, individuals who are highly identified with the group can increase their endorsement of the group's shared perspective as a means of reaffirming their belief that the world is meaningfully structured. Compensatory control theory has gone to great lengths testing which external sources people will turn to in response to threat, as well as illustrating the overarching need for structure and order that underlies the compensation motivation (Kay et al.,

2014). However, this theoretical perspective has neglected considering how individuals compensate for group-based threats to their personal control, how social identification influences ideology endorsement, and whether those strategies are effective means of restoring perceived personal control.

Integrating social identity and self-categorization theories into the compensatory control model, the present work demonstrates that when highly identified group members experience a group-based threat to their personal control, they see the social relations described by their ideology as more structured and ordered, leading to an increase in their support of the ideology. By increasing support for their group's beliefs, these members are able to effectively increase their perceptions of personal control. These results can be incorporated within SIT/SCT as well. While researchers have found that group identification is a source of personal control for the group member (Greenaway et al., 2015), this work has not identified all of the outcomes from identification that are directly linked to control. The present studies illustrate that one important result of social identification, ideology support, can be used to compensate for a loss of control. Furthermore, SIT/SCT have not contemplated the structure-offering nature of identification, an important variable to any compensation source from a CCT perspective. Study 2 of this paper revealed that group identification leads to a greater perceived structure for a social system represented by an ideology, and this perception leads to more endorsement of the ideology. Future SIT/SCT research can take these effects into account and investigate what other aspects of group identification might be seen as offering perceptions of structure and consequently as more appealing for compensation when personal control is threatened.

The results reported in this paper are particularly important with respect to their implications for low status groups. Members of groups that are low in social status, stigmatized,

underrepresented in positions of power, and discriminated against may frequently experience a lack of perceived personal control due to the their subordinate placement in the social structure. If members fail to identify with their targeted group and instead adhere to nationally-normative beliefs that legitimize inequality (dominant group ideologies), then personal control may be reaffirmed at the cost of maintaining unequal status relations. However, if individuals come to perceive the group-based threats to their control as illegitimate and subject to resistance, then increased identification with their group may promote adherence to ideologies that challenge and threaten the status quo (Haslam & Reicher, 2012; Reynolds, Jones, O'Brien, & Subasic, 2013).

Just as group membership may be the reason that individuals have their personal control threatened, it may also be the avenue by which they compensate while increasing their beliefs in a social system that no longer withholds equality (Reynolds, Haslam, & Turner, 2102). By increasing our understanding of when and why individuals subscribe to certain ideologies, we can also increase our understanding of how these ideologies can be used for social change and the facilitation of social action (Dixon, Tropp, Durheim, & Tredoux, 2010; Wright & Lubensky, 2009).

**References**

Abrams, D., & Hogg, M. A. (1990). Social identification, self-categorization and social

    influence. *European Review of Social Psychology, 1*, 195-228.

    doi:10.1080/14792779108401862

Acker, J. (2006). Inequality regimes: Gender, class, and race in organizations. *Gender & Society,*

    *20*(4), 441-464. doi:10.1177/0891243206289499

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change.

    *Psychological Review, 84*, 191-215. doi:10.1037/0033-295X.84.2.191

Branscombe, N. R., Ellemers, N., Spears, R., & Doosje, B. (1999). The context and content of

    social identity threat. In N. Ellemers, R. Spears, & B. Doosje (Eds.), *Social identity* (pp.

    35-58). Oxford: Blackwell.

Branscombe, N.R., Schmitt, M.T., & Harvey, R.D. (1999). Perceiving pervasive discrimination

    among African-Americans: Implications for group identification and well-being. *Journal*

    *of Personality and Social Psychology, 77*, 135-149.

Branscombe, N. R., & Wann, D. L. (1994). Collective self-esteem consequences of outgroup

    derogation when a valued social identity is on trial. *European Journal of Social*

    *Psychology, 24*, 641-657. doi:10.1002/ejsp.2420240603

Converse, P. E. (1964). The nature of belief systems in mass publics. In D. E. Apter (Ed.),

    *Ideology and discontent* (pp. 206-261). New York, NY: Free Press.

Craven, J., Stewart, M., & Reilly, R. J. (2015). The Ferguson protests worked: *Huffington Post.*

    Retrieved from http://www.huffingtonpost.com/entry/ferguson-protests-municipal-court-

    reform_us_55a90e4be4b0c5f0322d0cf1

Danbold, F., & Huo, Y. J. (2015). No longer "all American"?: Whites' defensive reactions to

their numerical decline. *Social Psychological and Personality Science, 6,* 210218. doi:
10.1177/1948550614546355

Doosje, B. & Ellemers, N. (1997). Stereotyping under threat: The role of group identification. In
R. Spears, P. J. Oakes, N. Ellemers & S. A. Haslam (Eds), *The social psychology of
stereotyping and group life* (pp. 257-272). Oxford: Blackwell.

Dixon, J., Tropp, L. R., Durrheim, K., & Tredoux, C. (2010). "Let them eat harmony" prejudice-
reduction strategies and attitudes of historically disadvantaged groups. *Current
Directions in Psychological Science, 19*, 76-80. doi:10.1177/0963721410363366

Ellemers, N., De Gilder, D., & Haslam, S. A. (2004). Motivating individuals and groups at work:
A social identity perspective on leadership and group performance. *Academy of
Management Review*, *29*, 459-478. doi:10.5465/AMR.2004.13670967

Ellemers, N., Spears, R., & Doosje, B. (2002). Self and social identity. *Annual Review of
Psychology, 53*. 161-186. doi:10.1146/annurev.psych.53.100901.135228

Feldman, S. (1983). Economic individualism and American public opinion. *American Politics
Quarterly, 11,* 3-29.

Feldman, S. (1988). Structure and consistency in public opinion: The role of core beliefs and
values. *American Journal of Political Science, 32*, 416-440.

Feldman, S. (2003). Values, ideology, and the structure of political attitudes. In D. O. Sears, L.
Huddy, & R. Jervis (Eds.), *Oxford handbook of political psychology* (pp. 477-508). New
York, NY: Oxford University Press.

Friesen, J. P., Kay, A. C., Eibach, R. P., & Galinsky, A. D. (2014). Seeking structure in social
organization: Compensatory control and the psychological advantage of hierarchy.

*Journal of Personality and Social Psychology, 106*, 590-609. doi: http://dx.doi.org/10.1037/a0035620

Geertz, C. (1966). *Person, time, and conduct in Bali: An essay in cultural analysis*. Southeast Asia Studies, Yale University.

Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*, 491-512.

Goode, C., Keefer, L. A., Branscombe, N. R., & Molina, L. E. (2016). Identity, ideology and control: Compensating for group-based threats to personal control through identification and ideology. *Resubmitted to European Journal of Social Psychology*.

Goode, C., Keefer, L. A., & Molina, L. E. (2014). A compensatory control account of meritocracy. *Journal of Social and Political Psychology, 2*, 313-334. doi:10.5964/jspp.v2i1.372

Greenaway, K. H., Cichocka, A., van Veelen, R., Likki, T., & Branscombe, N. R. (2014). Feeling hopeful inspires support for social change. *Political Psychology, 37,* 89-107. doi:10.1111/pops.12225

Greenaway, K. H., Haslam, S. A., Cruwys, T., Branscombe, N. R., Ysseldyk, R., & Heldreth, C. (2015). From "we" to "me": Group identification enhances perceived personal control with consequences for health and well-being. *Journal of Personality and Social Psychology*, *109,* 53-74. doi:10.1037/pspi0000019

Greenaway, K. H., Louis, W. R., & Hornsey, M. J. (2013). Loss of control increases belief in precognition and belief in precognition increases control. *PLoS ONE, 8*(8), e71327. doi:10.1371/journal.pone.0071327

Haslam, S. A., Ellemers, N., Reicher, S. D., Reynolds, K. J., & Schmitt, M. T. (2010). The social identity perspective tomorrow: Opportunities and avenues for advance. In T. Postmes, & N.R. Branscombe (Eds.), *Rediscovering social identity* (pp. 357-379). New York, NY: Psychology Press.

Haslam, S. A., Postmes, T., & Ellemers, N. (2003). More than a metaphor: Organizational identity makes organizational life possible. *British Journal of Management*, *14*, 357-369. doi:10.1111/j.1467-8551.2003.00384.x

Haslam, S. A., Powell, C., & Turner, J. C. (2000). Social identity, self-categorization and work motivation: Rethinking the contribution of the group to positive and sustainable organizational outcomes. *Applied Psychology: An International Review*, *49*, 319-339. doi: 10.1111/1464-0597.00018

Haslam, S. A., & Reicher, S. D. (2012). When prisoners take over the prison a social psychology of resistance. *Personality and Social Psychology Review*, *16*, 154-179. doi:10.1177/1088868311419864

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.

Hayes, A. F. (2015). An index and test of linear moderated mediation. *Multivariate Behavioral Research, 50*, 1-22. doi: 10.1080/00273171.2014.962683

Heine, S. J., Proulx, T., & Vohs, K. D. (2006). The meaning maintenance model: On the coherence of social motivations. *Personality and Social Psychological Review, 10*, 88–111. doi: 10.1207/s15327957pspr1002_1

Hogg, M. A., & Adelman, J. (2013). Uncertainty-identity theory: Extreme groups, radical behavior, and authoritarian leadership. *Journal of Social Issues, 69,* 436-454. doi: 10.1111/josi.12023

Hogg, M. A., Meehan, C., & Farquharson, J. (2010). The solace of radicalism: Self-uncertainty and group identification in the face of threat. *Journal of Experimental Social Psychology, 46*, 1061–1066. doi: 10.1016/j.jesp.2010.05.005

Hogg, M. A., & Reid, S. A. (2006). Social identity, self-categorization, and the communication of group norms. *Communication Theory, 16*, 7-30. doi:10.1111/j.1468-2885.2006.00003.x

Huo, Y. J., & Molina, L. E. (2006). Is pluralism a viable model of diversity? The benefits and limits of subgroup respect. *Group Process & Intergroup Relations, 9*, 359-376. doi:10.1177/1368430206064639

Jackman, M. R. (1994). *The velvet glove: Paternalism and conflict in gender, class, and race relations*. Berkeley, CA: University of California Press.

Jost, J. T., Pelham, B. W., Sheldon, O., & Sullivan, B. (2003). Social inequality and the reduction of ideological dissonance on behalf of the system: Evidence of enhanced system justification among the disadvantaged. *European Journal of Social Psychology*, *33*, 13-36. doi:10.1002/ejsp.127

Kay, A. C., & Eibach, R. P. (2013). Compensatory control and its implications for ideological extremism. *Journal of Social Issues*, *69*, 564-585. doi:10.1111/josi.12029

Kay, A. C., Gaucher, D., Napier, J. L., Callan, M. J., & Laurin, K. (2008). God and the government: Testing a compensatory control mechanism for the support of external

systems. *Journal of Personality and Social Psychology, 95*, 18–35.

http://dx.doi.org/10.1037/0022-3514.95.1.18

Kay, A. C., Laurin, K., Fitzsimons, G. M., & Landau, M. J. (2014). A functional basis for

structure-seeking: Exposure to structure promotes willingness to engage in motivated

action. *Journal of Experimental Psychology: General, 143*, 486-491.

http://dx.doi.org/10.1037/a0034462

Kay, A. C., Moscovitch, D. A., & Laurin, K. (2010). Randomness, attributions of arousal, and

belief in God. *Psychological Science*, *21*, 216-218. doi:10.1177/0956797609357750

Kay, A. C., Sullivan, D., & Landau, M. J. (2014). The psychological importance of beliefs in

control and order: Historical and contemporary perspectives in social and personality

psychology. In M. Mikulincer & P. R. Shaver (Eds.), *APA handbook of social and

personality psychology* (pp. 309-337). Washington DC: American Psychological

Association.

Kluegel, J. R., & Smith, E. R. (1986). *Beliefs about inequality: Americans' view of what is and

what ought to be.* Hawthorne, NY: Aldine de Gruyter.

Knight, C., Haslam, S. A., & Haslam, C. (2010). In home or at home? How collective decision

making in a new care facility enhances social interaction and wellbeing amongst older

adults. *Ageing & Society, 30*, 1393-1418. doi:10.1017/S0144686X10000656

Lane, R. E. (1962). *Political ideology: Why the American common man believes what he does*.

Oxford, England: Free Press of Glencoe.

Lefcourt, H. M. (1981). *Research with the locus of control construct: Volume 1*. New York, NY:

Academic Press.

Lipset, S. M. (1979). *The first new nation*. New York, NY: Norton.

Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's identity. *Personality and Social Psychology Bulletin, 18*, 302-318.

Lull, J., Mulac, A., & Rosen, S. L. (1983). Feminism as a predictor of mass media use. *Sex Roles, 9,* 165-167.

Mannheim, K. (2013). *Ideology and utopia*. New York, NY: Routledge.

Marx, K., & Engels, F. (1979). The German ideology, 1932. *The Marx-Engels Reader*, 146-202.

Oakes, P. J., Haslam, S. A., & Turner, J. C. (1994). *Stereotyping and social reality*. Oxford: Blackwell.

Outten, R. H., Schmitt, M. T., Miller, D. A., & Garcia, A. L. (2012). Feeling threatened about the future: White's emotional reactions to anticipated ethnic demographic changes. *Personality and Social Psychology Bulletin, 38*, 14-25. doi: 10.1177/0146167211418531

Paradies, Y.C. (2006). A systematic review of empirical research on self-reported racism and health. *International Journal of Epidemiology, 35*, 888-901. doi: 10.1093/ije/dyl056

Pascoe, E.A., & Richman, L.S. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin, 135*, 531-554. doi: 10.1037/a0016059

Pearlin, L. L., Lieberman, M. A., Menaghan, E. A., & Mullan, J. T. (1981). The stress process. *Journal of Health and Social Behavior, 22*, 337-356.

Remington, T. (1971). *The origin of ideology*. Pittsburgh University Center for International Studies: University of Pittsburgh.

Reynolds, K. J., Haslam, S. A., & Turner, J. C. (2012). Prejudice, social identity, and social change: Resolving the Allportian problematic. In J. Dixon & M. Levine (Eds.), *Beyond prejudice: Extending the social psychology of conflict, inequality and social change* (pp. 48-69). New York, NY: Cambridge University Press.

Reynolds, K. J., Jones, B. M., O'Brien, K., & Subasic, E. (2013). Theories of socio-political change and the dynamics of sub-group versus superordinate interests. *European Psychologist, 18*, 235-244. doi:10.1027/1016-9040/a000159

Rothbaum, R., Weisz, J. R., Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of Personality and Social Psychology, 42,* 5–37. http://dx.doi.org/10.1037/0022-3514.42.1.5

Rutjens, B. T., van der Pligt, J., & van Harreveld, F. (2010). Deus or Darwin: Randomness and belief in theories about the origin of life. *Journal of Experimental Social Psychology*, *46*, 1078-1080. doi: 10.1016/j.jesp.2010.07.009

Schmitt, M.T., Branscombe, N.R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: A meta-analytic review. *Psychological Bulletin, 140*, 921-948. doi: 10.1037/a0035754

Schulz, R. (1976). Effects of control and predictability on the physical and psychological well-being of the institutionalized aged. *Journal of Personality and Social Psychology, 33*, 563-573. doi:10.1037/0022-3514.33.5.563

Shepherd, S., Kay, A. C., Landau, M. J., & Keefer, L. A. (2011). Evidence for the specificity of control motivations in worldview defense: Distinguishing compensatory control from uncertainty management and terror management processes. *Journal of Experimental Social Psychology, 47*, 949-958. doi:10.1016/j.jesp.2011.03.026

Skevington, S., & Baker, D. (Eds.). (1989). *The social identity of women.* London: Sage

Smith, M. D., & Self, G. D. (1981). Feminists and traditionalists: An attitudinal comparison. *Sex Roles, 7*, 183-188.

Sidanius, J., & Pratto, F. (1999). *Social dominance: An intergroup theory of social hierarchy and*

*oppression.* New York, NY: Cambridge University Press.

Steptoe, A., & Apples, A. (Eds.). (1989). *Stress, personal control and health.* Oxford, ENG: Wiley & Sons.

Sullivan, D., Landau, M. J., & Rothschild, Z. K. (2010). An existential function of enemyship: Evidence that people attribute influence to personal and political enemies to compensate for threats to control. *Journal of Personality and Social Psychology, 98,* 434-449. doi:10.1037/a0017457

Suhr, J., & Salter, J. (2014). Protest turn violent in St. Louis suburb. *Yahoo News.* Retrieved from https://www.yahoo.com/news/id-officer-killed-teen-festering-issue-195808507.html?ref=gs#

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-48). Monterey, CA: Brooks/Cole.

Thorisdottir, H., Jost, J. T., & Kay, A. C. (2009). On the social and psychological bases of ideology and system justification. In H. Thorisdottir, J. T. Jost & A. C. Kay (Eds.) *Social psychological bases of ideology and system justification*, (pp. 3-26). New York, NY: Oxford University Press.

Turner, J. C. (1982). Towards a cognitive redefinition of the social group. In H. Tajfel (Ed.), Social identity and intergroup relations (pp. 15-40). Cambridge, MA: Cambridge University Press.

Turner, J. C. (1999). Some current issues in research on social identity and self-categorization theories. In N. Ellemers, R. Spears, & B. Doosje (Eds.), *Social identity* (pp. 6-34). Malden, MA: Blackwell.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Cambridge, MA: Blackwell

Van Zomeren, M., Spears, R., Fischer, A. H., & Leach, C. W. (2004). Put your money where your mouth is!: Explaining collective action tendencies through group-based anger and group efficacy. *Journal of Personality and Social Psychology, 87*, 649–664. doi:10.1037/0022-3514.87.5.649

Verkuyten, M. (1998). Perceived discrimination and self-esteem among ethnic minority adolescents. *The Journal of Social Psychology, 138*, 479-493.

Wann, D.L., & Branscombe, N.R. (1991). Die-hard and fair-weather fans: Effects of sports team identification on BIRGing and CORFing tendencies. *Journal of Sport and Social Issues*, *14*, 103 117. doi:10.1177/019372359001400203

Whitson, J. A., & Galinsky, A. D. (2008). Lacking control increases illusory pattern perception. *Science*, *322*, 115-117. doi:10.1126/science.1159845

Wike, R., & Simmons, K. (2015). *Global support for principle of free expression, but opposition to some forms of speech: American especially likely to embrace individual liberties.* Retrieved from http://www.pewglobal.org/files/2015/11/Pew-Research-Center-Democracy-Report-FINAL-November-18-2015.pdf

Wohl, M. J. A., Branscombe, N. R., & Klar, Y. (2006). Collective guilt: Emotional reactions when one's group has done wrong or been wronged. *European Review of Social Psychology, 17*, 1-37. doi:10.1080/10463280600574815

Wright, S. C., & Lubensky, M. E. (2009). The struggle for social equality: Collective action versus prejudice reduction. In S. Demoulin, J-P. Leyens, & Dovidio, J. F. (Eds.),

*Intergroup misunderstandings: Impact of divergent social realities* (pp. 291-310). New York, NY: Psychology Press.

Footnotes

1. Originally a *control* condition was piloted tested along with the threat and boost conditions. In this condition women were shown a graph and text that portrayed rates of sexual discrimination as remaining constant over time. However women in this condition displayed similar patterns as women in the *threat* condition and their written responses showed that an overwhelming majority perceived a constant trend of sexual discrimination as a threat to their gender group. Therefore in the present studies we did not include a control condition.

2. The index of moderated mediation is a measured parameter that quantifies the relationship between a proposed moderator and the indirect effect of an IV on the DV through a mediating variable. It applies to any mediation model in which the indirect effect is estimated as linearly moderated. The 95% confidence interval for the index of moderated mediation is expected to not include zero for a significant moderated mediation effect to be present. More detail for the computation and interpretation of this parameter can be found in Hayes' (2015) paper on moderated-mediational analyses.

3. An alternative model with gender identification interacting with experimental condition on perceived structure of equality through gender egalitarianism (as the mediator) also indicated a significant effect, index of moderated mediation = .30 [.06, .63]. Examining the indirect effects of this model in both experimental conditions resulted in parallel effects as reported above. Gender egalitarianism mediated the effect of gender identification on the perceived structure of gender equality in the *group-based control threat* condition (indirect effect = .14, [.003, .38]), but did not in the *group-based control boost* condition (indirect effect = -.15 [-.39, .02].

4. An alternative model with gender identification interacting with experimental condition on perceived gender egalitarianism through perceived personal control (as the mediator) was not significant, index of moderated mediation = .09 [-.03, .27].

**Figure 1**

Interaction effect of gender identification by experimental condition on egalitarianism (Study 1).
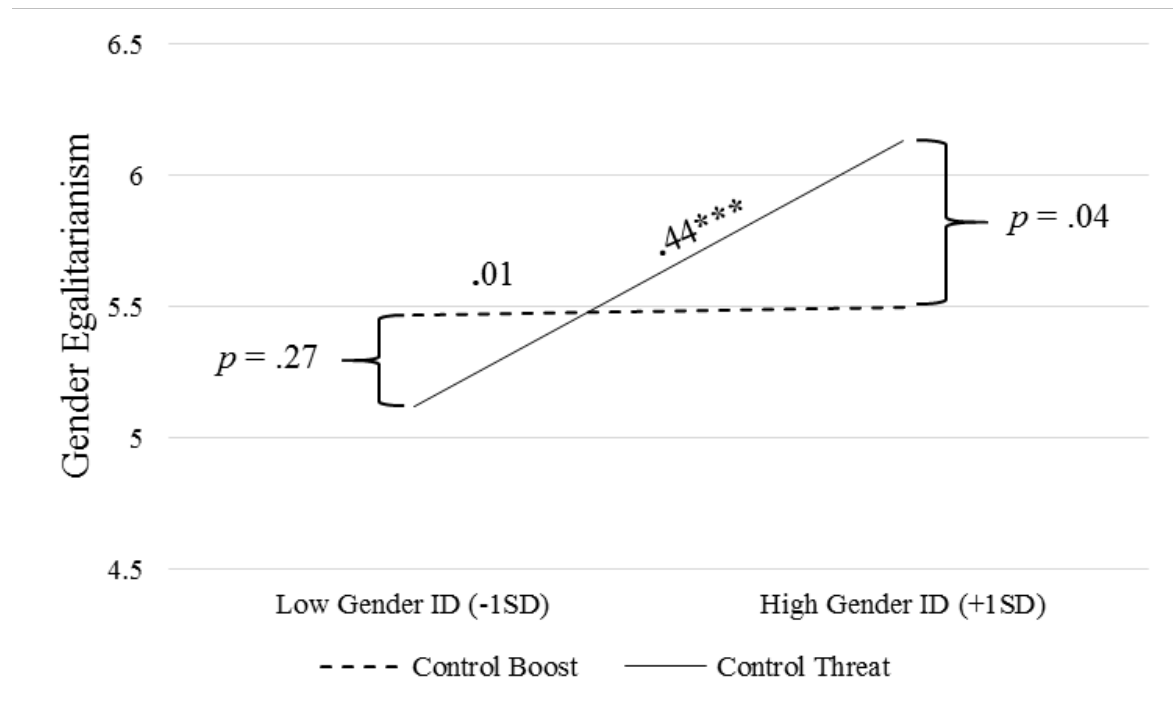


*Note.* Scale ranged from 1-7; higher scores indicate greater endorsement of gender egalitarianism; $*p < .05$, $**p < .01$, $***p < .001$.

**Figure 2**

Interaction effect of gender identification by experimental condition on benevolent sexism

(Study 1).
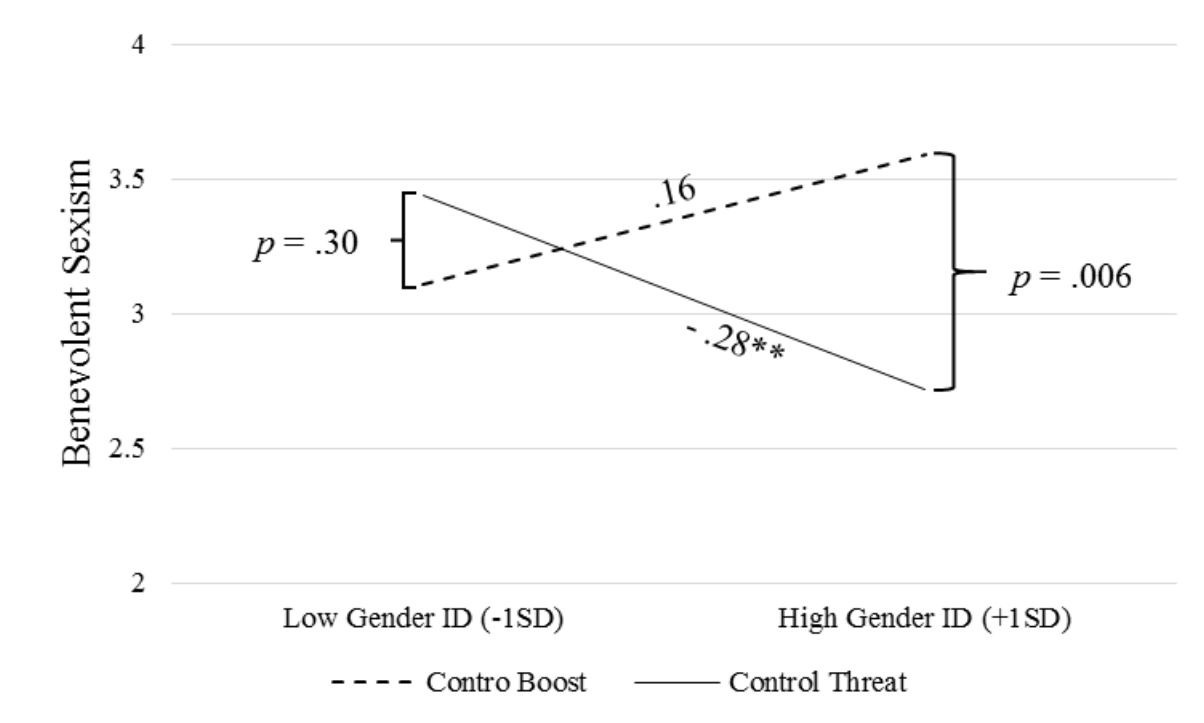


*Note.* Scale ranged from 1-7; higher scores indicate greater endorsement of benevolent sexism;

*p* < .05, **p* < .01

**Figure 3**

Interaction effect of gender identification by experimental condition on perceived structure of gender equality (Study 2)
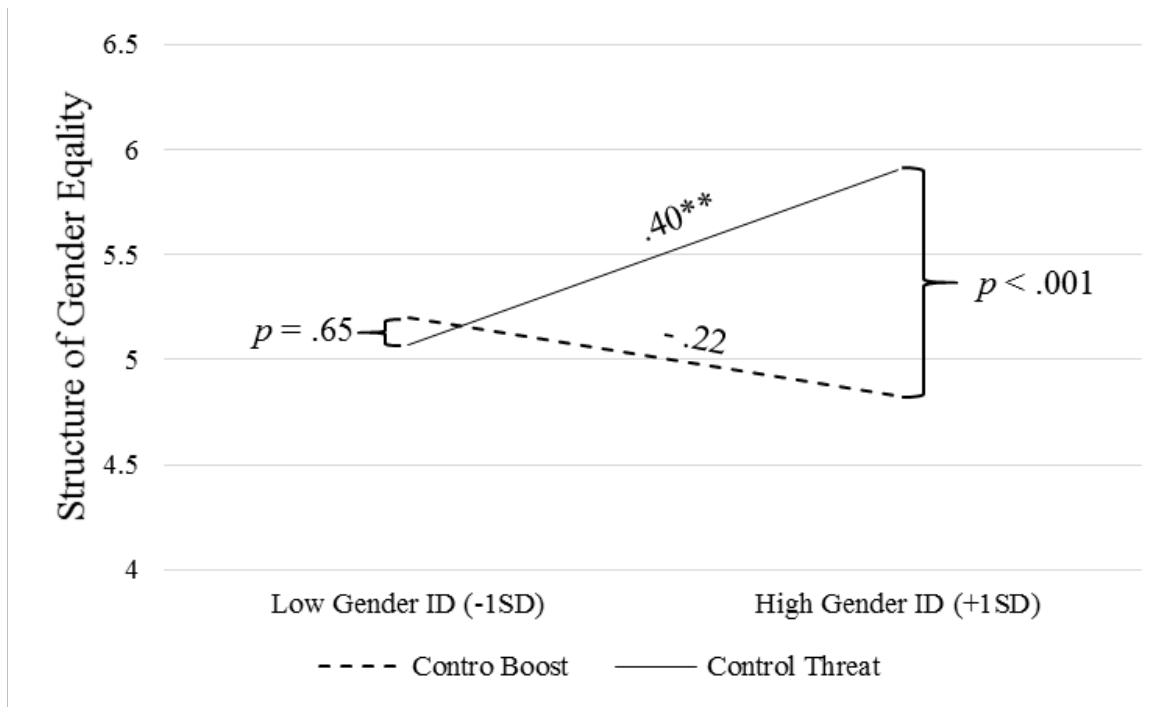


*Note.* Scale ranged from 1-7; higher scores indicate greater perceived structure of gender equality; *p* < .05, **p* < .01

**Figure 4**

Interaction effect of gender identification by experimental condition on gender egalitarianism

(Study 2)
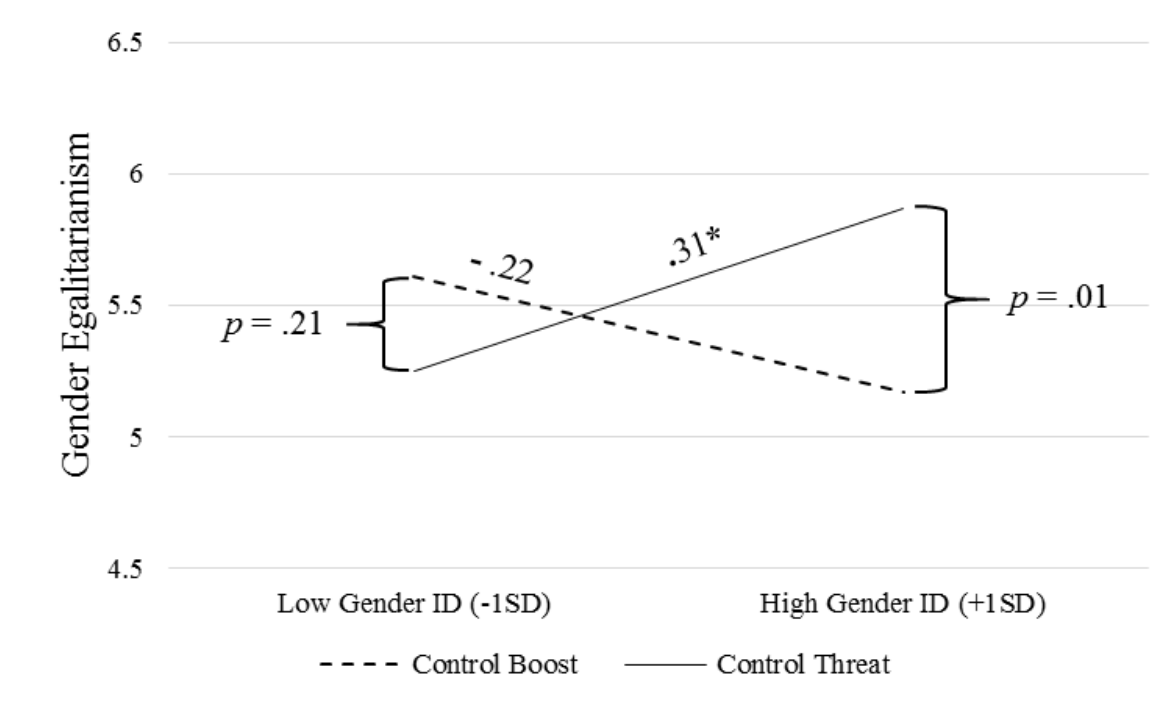


*Note.* Scale ranged from 1-7; higher scores indicate greater endorsement of gender

egalitarianism; *p < .05, **p < .01

**Figure 5**

Moderated-mediational models of gender identification by experimental condition on gender egalitarianism through perceived structure of gender equality (Study 2)

A. Moderated mediation (index = .31, [.09, .59])
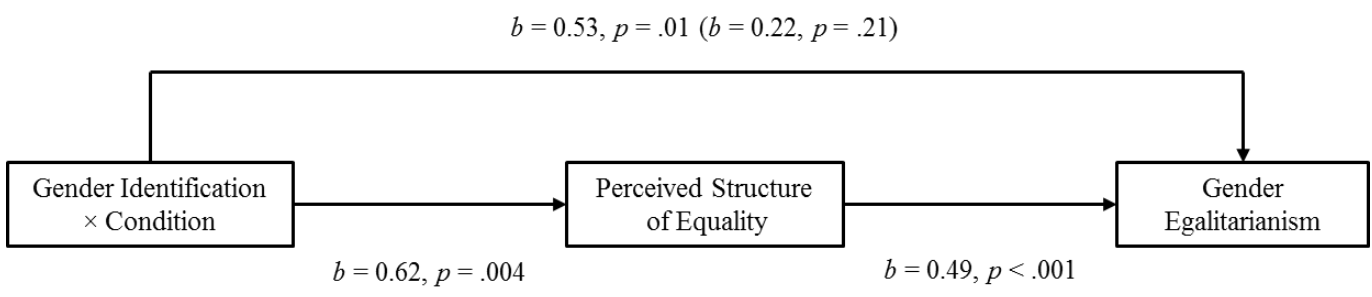


B. Group-based control threat (indirect effect = .19 [.05, .42])
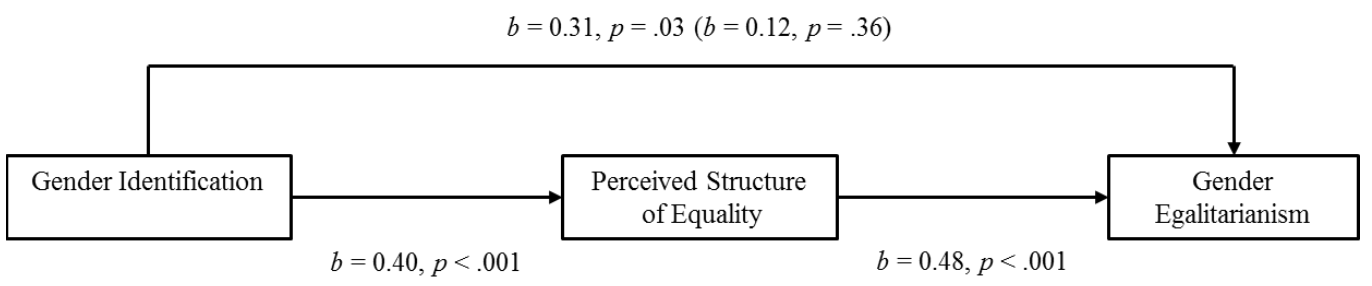


C. Group-based control boost (indirect effect = -.11 [-.31, 04])
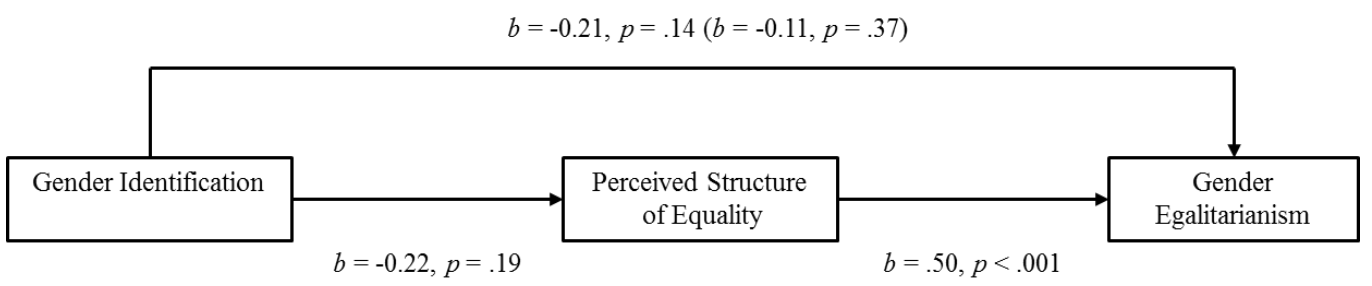
**Figure 6**

Interaction effect of gender identification by experimental condition on gender egalitarianism
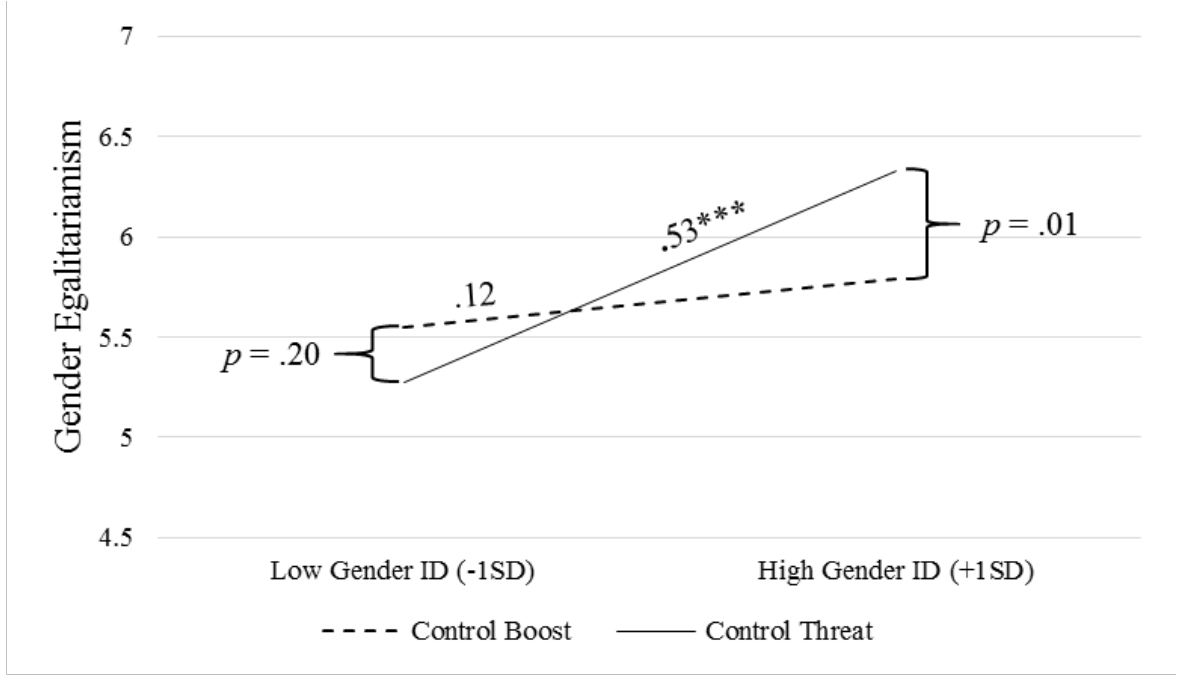
(Study 3)



*Note.* Scale ranged from 1-7; higher scores indicate greater endorsement of gender

egalitarianism; *p < .05, **p < .01, ***p < .001

**Figure 7**

Interaction effect of gender identification by experimental condition on perceived personal

control (Study 3)
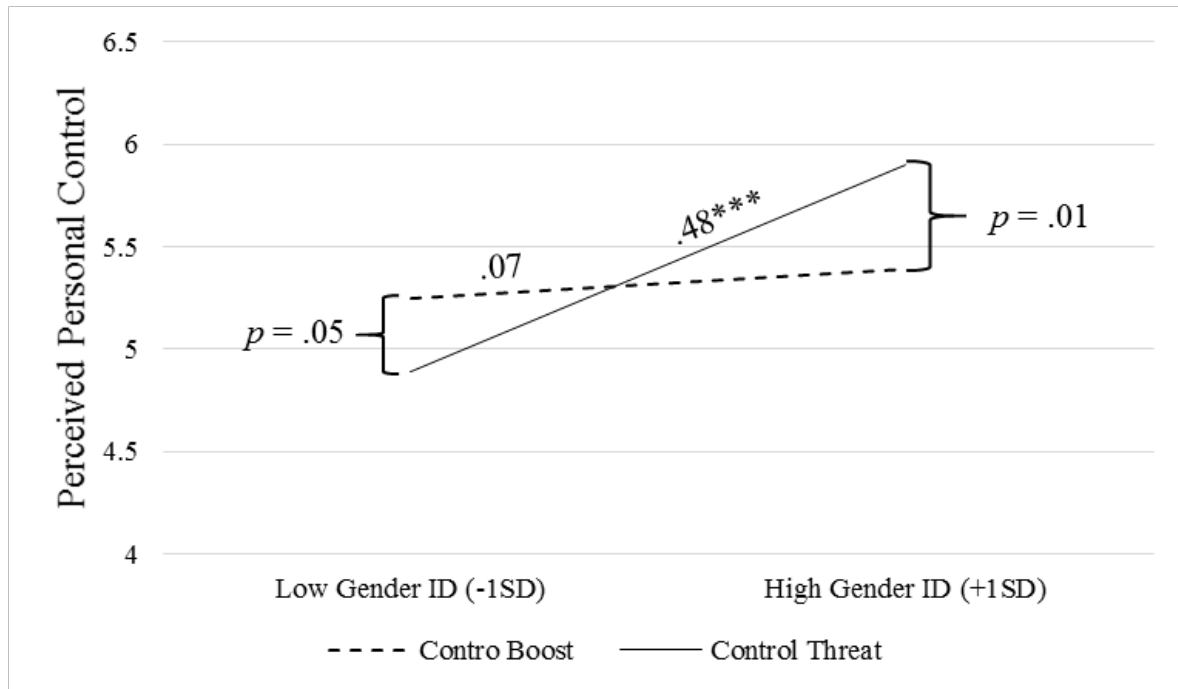


*Note.* Scale ranged from 1-7; higher scores indicate greater perceived personal control; *p* < .05,

**p* < .01, ***p* < .001

**Figure 8**

Moderated-mediational models of gender identification by experimental condition on perceived

personal control through gender egalitarianism (Study 3)

A. Moderated mediation (index = .08 [.02, .19])
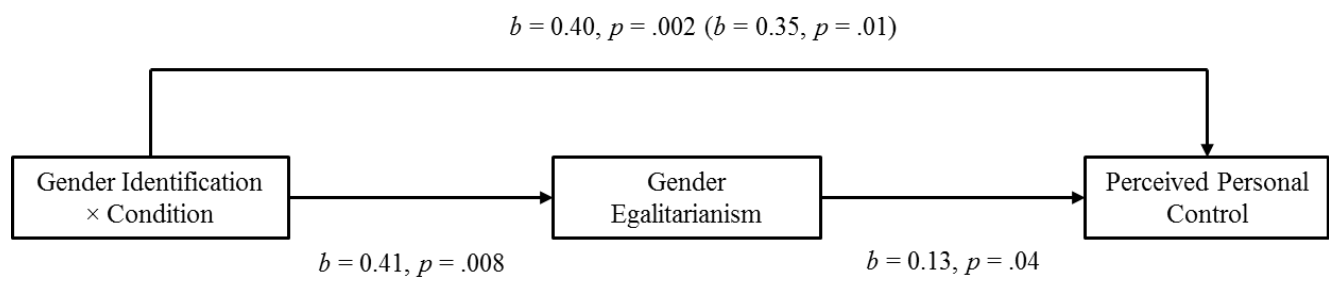
$b = 0.40, p = .002 (b = 0.35, p = .01)$

| Gender Identification × Condition | Gender Egalitarianism | Perceived Personal Control |

$b = 0.41, p = .008$  $b = 0.13, p = .04$

B. Group-based control threat (indirect effect = .12 [.02, .25])

$b = 0.48, p < .001 (b = 0.36, p = .001)$

| Gender Identification | Gender Egalitarianism | Perceived Personal Control |

$b = 0.52, p < .001$  $b = 0.22, p = .02$

C. Group-based control boost (indirect effect = .01 [-.01, 07])

$b = 0.07, p = .14 (b = -0.11, p = .37)$

| Gender Identification | Gender Egalitarianism | Perceived Personal Control |

$b = 0.12, p = .25$  $b = .08, p = .33$
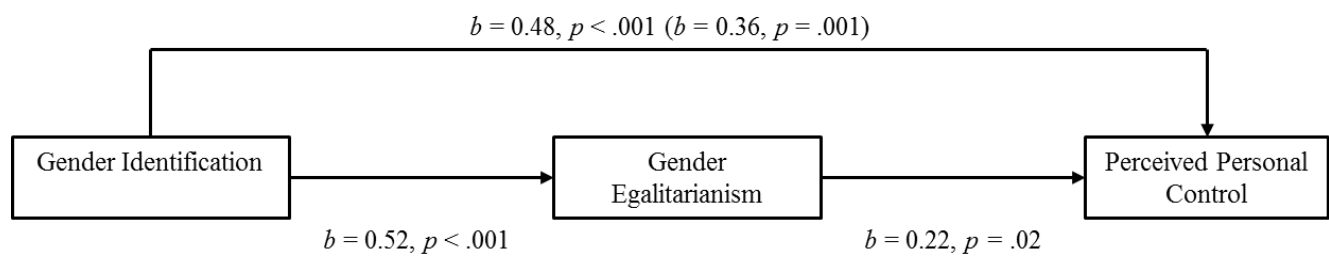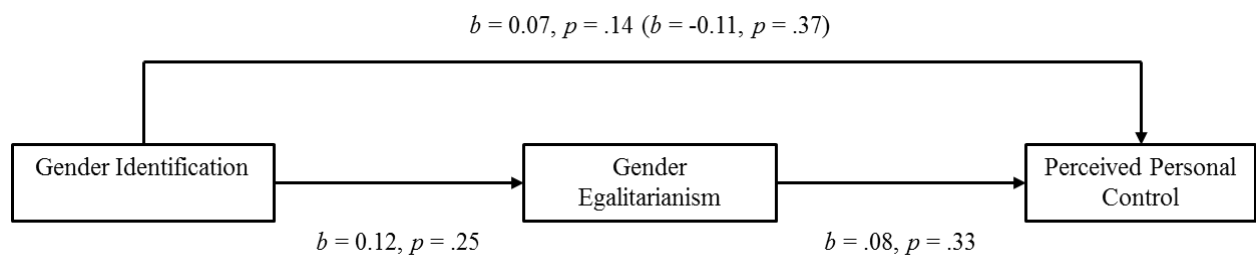
Tables

**Table 1**

Bivariate correlations (Study 1)

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Education | - | | | | | | |
| Income | -.04 | - | | | | | |
| Social Class | .03 | .63** | - | | | | |
| Political Ideology | .06 | .09 | -.003 | - | | | |
| Gender Identification | -.02 | .13 | .10 | .06 | - | | |
| Gender Egalitarianism | -.005 | -.13 | -.05 | -.51** | .17* | - | |
| Benevolent Sexism | .007 | .10 | .04 | .50** | -.023 | -.66** | - |

*note. *p < .05; **p < .01*

**Table 2**

Bivariate correlations (Study 2)

|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Education | - | | | | | | |
| Income | .17* | - | | | | | |
| Social Class | .20** | .58** | - | | | | |
| Political Ideology | .01 | .03 | .11 | - | | | |
| Gender Identification | .01 | .07 | .21** | .09 | - | | |
| Gender Egalitarianism | -.05 | .000 | -.04 | -.52** | .06 | - | |
| Structure | .07 | .02 | -.007 | -.46** | .06 | .55** | - |

*note.* *p < .05; **p < .01

**Table 3**

Bivariate correlations (Study 3)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Education | - | | | | | | |
| Income | -.09 | - | | | | | |
| Social Class | .07 | .60** | - | | | | |
| Political Ideology | -.005 | .04 | -.02 | - | | | |
| Gender Identification | .08 | .002 | .16* | -.03 | - | | |
| Gender Egalitarianism | -.001 | .000 | .02 | -.42** | .27** | - | |
| Personal Control | .12 | .11 | .17* | -.04 | .25** | .24** | - |

*note.* *p < .05; **p < .01

Appendix A

**Gender identification measure (*Studies 1, 2, & 3*)**

Below are some statements about how you feel about your gender group (women). Please rate

how much you agree or disagree with each statement using the scale below from 1 (*Strongly*

*Disagree*) to 7 (*Strongly Agree*).

1. Overall, being a woman has very little to do with how I feel about myself (reverse score).

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

3. Being a woman is unimportant to my sense of what kind of person I am (reverse score).

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

Appendix B

**Group-based manipulation of personal control (*Studies 1, 2, & 3*)**

On the next page is a current Department of Justice report. PLEASE read this article closely and pay attention to the accompanying graph. Correctly understanding the material will help us collect valid information.

*Group-based control threat prime*

*Group-based control boost prime*

Appendix C

**Gender egalitarianism measure (*Studies 1, 2, & 3*)**

The following statements reflect different attitudes about how gender should be treated in society. Please rate how much you agree or disagree with each statement using the scale below from  1 (*Strongly Disagree*) to 7 (*Strongly Agree*).

1. If women were treated more equally in this country we would have fewer problems.

2. Our society should do whatever is necessary to make sure that every woman has the same opportunity to succeed as men do.

3. We have gone too far in pushing equal rights for women in this country (reverse score).

4. This country would be better off if we worried less about if all women are equal to men (reverse score).

5. There should be more focus on equality of outcomes for women in today's society.

6. It is not really that big a problem if men have more chances than women (reverse score).

**Benevolent sexism measure (*Study 1*)**

The following statements reflect different attitudes about how gender should be treated in society. Please rate how much you agree or disagree with each statement using the scale below from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*).

1. Women are too easily offended.

2. Most women interpret innocent remarks as sexist.

3. Women fail to appreciate all men do for them.

4. Women exaggerate problems at work.

5. Women should be cherished and protected by men.

6. Men should sacrifice to provide for women.

Appendix D

**Perceived structure of gender equality measure (*Study 2*)**

The next part of this study involves indicating your level of agreement with a number of

statements. Please read each statement carefully, and then go with your first instinct as to your

level of agreement.

1. Thinking about a society that is completely gender-equal, how structured do you think that

society would be?

| Not at all structured | . | . | . | . | . | Completely structured |
|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

2. Thinking about a society that is completely gender-equal, how chaotic do you think that

society would be? (reverse scored)

| Not at all chaotic | . | . | . | . | . | Completely chaotic |
|---|---|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* Both items coded from 1 (*Not at all structured/chaotic*) to 7 (*Completely strucutred/chaotic)*

Appendix E

**Perceived personal control measure (*Studies 1 & 3*)**

The following statements are related to your own unique personality and can help us get a picture

of who you are as a person. Please think about how much you agree or disagree with each

statement below and rate your agreement using the scale below from 1 (*Strongly Disagree*) to 7

(*Strongly Agree*).

1. I feel that I have a great degree of control over what happens to me in my life.

2. I believe that what happens to me in the future mostly depends on me.

3. I feel a high sense of personal control over my life.

4. I believe that I can do just about anything I really set my mind to.


*Filler items added to perceived personal control measure used to mask intent in pilot sample*

*from Study 1.*

1. I like to keep to myself most of the time.

2. I often like trying new things like food or activities.

3. I find crowds somewhat unsettling.

4. I like to meet new people and enjoy making small talk with strangers.

5. I enjoy abstract paintings.

6. Small pets annoy me.

7. I enjoy traveling.

8. My personal relationships are important to me.

Appendix F

**Demographic variables** *(Studies 1, 2, & 3)*

"Please indicate your highlest level of education."

1. Some school

2. GED

3. High School Graduate

4. Some College

5. Associates Degree

6. Bachelor's Degree

7. Masters Degree

8. Doctoral Degree

"Which category best describes your current household income?"

1. Less than $15,000

2. $15,001 - $25,000

3. $25,001 - $35,000

4. $35,001 - $50,000

5. $50,001 - $75,000

6. $75,001 - $100,000

7. $100,001 - $150,000

8. Greater than $150,000

"What social class do you feel you belong to?"

1. Poor

2. Working Poor

3. Working Class

4. Middle Class

5. Upper Middle Class

6. Upper Class

7. Rich

"How would you describe your political outlook? Please slide the marker to indicate your level of political outlook."

Very Liberal                                                                Very Conservative