

The psychology of social change and backlash: Examining contemporary social issues for  
insights on attitudes, identity, and behavior

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A dissertation

submitted in partial fulfillment of the  
requirements for the degree of

Doctor of Philosophy

University of Washington

2020

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Program authorized to offer degree:

Psychology

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**Abstract**

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Social progress in the United States does not follow a smooth linear trajectory, but rather is fraught with victories toward justice often followed by swift social backlash toward injustice. This dissertation introduces a broad framework for understanding the psychology of social change and backlash by drawing from perspectives in social psychology. Social change is conceptualized as perceived changes to the social hierarchy, which can in turn threaten individuals' status or desire to maintain the status quo. This dissertation focuses on three recent examples of social change and corresponding backlash that span different sources of social change (e.g., self-made change like activism, institutional change, and visibility change) as well as different issues (sexual violence against women, women's rights, and prejudice toward transgender people). Paper 1 provides evidence that online activism (self-made change) may morally credential people, which is then associated with less subsequent activism, suggesting that at the individual-level, people may personally instigate social change only to subsequently

disengage from further action shortly after. Paper 2 reveals that Hillary Clinton supporters affirmed their various social and political identities after her defeat in the 2016 US Presidential Election (institutional change), providing evidence that a perceived threat to one's status is combated with a shift in identity, which may heighten polarization at the societal level. Finally, Paper 3 investigates whether psychological essentialism is a causal predictor of prejudice toward transgender people, a group that has recently received significant media and political coverage (change in visibility). Together, this dissertation provides unique insight into the psychology of perceived social change in real-time, and suggests social change may often be met with backlash out of people's desires to protect their own status and preserve the status quo.

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## Chapter 1

### Introduction

Graphing the history of social change in the United States would appear sinusoidal like the electrocardiogram of a patient: periods of progressive social change are then met with swift social backlash. The pendulum of justice swings between iniquity and progressivism; for example, the stifling conservatism of suburban nuclear-family life of the 1950s gave way to the turbulent political and social activism of the 1960s, the election of the nation's first Black president in 2008, perhaps symbolizing a nation willing to step toward racial equality, was followed by the 2016 election of a man whose campaign ignited xenophobic fears and racial turmoil (Leonhardt & Philbrick, 2018). While the "arc of the moral universe" may ultimately "bend toward justice," the line of this curve is certainly not a smooth trajectory, but rather jagged with mountains up toward justice and riddled with valleys reaching downward toward injustice (King, 1959). What is the psychological impact on people as they experience, and contribute to, fluctuations in social progress?

This dissertation explores the psychological impact of social change, from small individual acts of activism toward making a more just world to nation-wide shifts in political power symbolizing social backlash. By prioritizing the study of timely topics, from sexual violence to transgender prejudice, the present research offers unique snapshots of social change in the United States and how these changes affect people's identity, attitudes, and behaviors. Chapter 2 explores how engaging in online activism in support of addressing sexual violence can be morally credentialing, which can discourage further activism. Chapter 3 investigates how people's social identities like gender shifted longitudinally before and after the 2016 U.S. Presidential Election, a symbolic inflection point from progressivity to conservatism. Finally,

Chapter 4 explores a different kind of social change – a change in visibility for a marginalized group (transgender people) – and how this may affect people’s attitudes (e.g., prejudices toward transgender people).

The remainder of this introduction follows the following organization. First, a theoretical foundation is developed for studying the psychological impact of social change. Then, three sources of social change are described: self-made, institutional, and visibility. Next, potential theories in the social psychological literature on how people might react to social change are reviewed. Lastly, an overview of the three chapters is presented.

### **Theoretical foundation for studying social change as changes in social hierarchy**

This section offers a definition of social change for the purposes of this dissertation, and then argues that one way to study the psychological impact of social change is by utilizing a social hierarchy framework whereby social change increases or decreases social status, thereby changing the social hierarchy. Then, a theoretical perspective for why exploring timely social issues like the ones in this paper is reviewed.

### **Social change as changes in social hierarchy**

Within the context of this dissertation, *perceived social change* is broadly defined as anything that changes (regardless of *valence*, *size*, and *objectivity*) perceptions of the social hierarchy. Regardless of *valence* means social change can be both movements forward toward justice as well as movements backwards toward injustice, regardless of *size* acknowledges that social change can happen at multiple levels of society, including nation-wide policies or small individual acts of activism, and regardless of *objectivity* refers to the possibility that social change can be both objective (e.g., the legalization of same-sex marriage) and subjective (e.g., an individual who believes their participation in a Pride march contributes to social change) but

both can impact the perceiver. Additionally, regardless of objectivity also subsumes cases of illusory perceptions of social change (e.g., a privileged group falsely believing they are losing power) because the perception alone can lead to psychological consequences. Thus, this definition of social change includes prototypical examples of social change like the passing of civil rights laws, as well as less commonly used examples of social change like online activism (Gomez & Kaiser, 2019).

In studying how social change psychologically impacts people, one theoretical framework that can be used is interpreting social change as changes to a social hierarchy, where some groups of people (e.g., men, Whites) have greater social status than others (e.g., women, Blacks) (Sidanius & Pratto, 2001). For example, Barack Obama's presidency represented a symbolic change in status for Blacks, reducing the perception of the gap in the social hierarchy between Whites and Blacks (Kaiser, Drury, Spalding, Cheryan, O'Brien, 2009). Social change, then, involves perceiving the change of groups' statuses, and the status relationships between groups (i.e., changes in hierarchy). All groups in a hierarchy can be subjected to social change, but this dissertation focuses on the changes in status of marginalized groups, such as women and transgender people (for research on the impact of changes in status for majority/high-status groups, see Lowery, Unzueta, Knowles, & Goff, 2006; Wilkins & Kaiser, 2014).

### **On the theoretical importance of studying social change in real-time**

This dissertation focuses especially on types of social change that are timely issues of major social significance, from sexual assault to transgender prejudice. This approach is inspired by a theoretical framework of viewing social psychology as history – people's psychologies are contextualized within any given historical period, bounded by social, cultural, and political parameters and consequently are difficult to generalize to different points in history (Gergen,

1971). Not only are people's psychologies bounded by time and space, but so too are events that transpire social change: no two events of social change can be investigated and interpreted identically. Studying social change as it happens, then, is crucial toward building a greater understanding of how social change can psychologically impact people. Additionally, as technology accelerates the rate at which people are exposed to new ideas and opportunities to enact social change, an empirical investigation of these rapidly disappearing windows of history is more important than ever (Gergen, 1991).

Social psychology has a rich history of drawing theoretical insights from current events. WWII inspired a myriad of psychological inquiry – from examining obedience to explain the horrors of the Holocaust via Milgram's (1963) infamous shock studies to demonstrating how social psychology can be leveraged to change behavior to convince Americans to buy cheaper meats to help with the war (Lewin, 1943). Researching a doomsday cult – and observing how followers' beliefs only strengthened after realizing their leader's prophecy about the end of the world did not come to fruition – provided Festinger with the basis of cognitive dissonance theory (1956), and the murder of Kitty Genovese, who died in the presence of bystanders who did not intervene, inspired psychologists to identify this phenomenon more broadly as the bystander effect (Latane & Darley, 1968). These are just a few examples of how empirically investigating current events (which often have implications for social change) can lead to theoretical insights.

### **Sources of social change**

Social change can happen for a myriad of reasons, but this dissertation focuses on three different sources: self-made, institutional, and visibility and discusses the implications of these different types on their potential psychological impact.

### *Self-made*

One source of social change comes from an individual, such as participating in activism to increase the status and livelihood of a social group (Postmes & Brunsting, 2002; Van Zomeren, Postmes, & Spears, 2008). Conversely, individuals can engage in forms of prejudice and discrimination to decrease the status of a social group or to maintain their relatively lower hierarchical position (Sidanius & Pratto, 2001). A non-exhaustive list of self-made actions to enact social change include: confronting a prejudiced person, engaging in any form of collective action such a protest, and introducing or supporting civil rights policies and laws. Given the importance of self and agency in American culture, social changes made by individuals may have special psychological significance or perceived impact to the agent of action, making this type of social change important to study in an American context (Markus & Kitayama, 1991). For example, when American participants perceive themselves as powerful, they may overestimate their influence of events, even when those events are beyond their personal control (Anderson & Berdahl, 2002; Keltner, Gruenfeld, & Anderson, 2003; Fast, Gruenfeld, Sivanathan, & Galinsky, 2009). In one study, participants reflected on a time when they had power over people (high power condition) as opposed to when other people had control over them (low power condition). Participants in the high power condition were significantly more likely to choose to roll the dice themselves in a dice game, as opposed to allowing the experimenter to roll the dice, demonstrating how feeling like one has power may lead people to overestimate their influence on events, even when the events are beyond their control such as the outcome of rolling dice (Fast, Gruenfeld, Sivanathan, & Galinsky, 2009). Similarly, when individuals enact social change on the behalf of a lower-status group, their relatively higher status may be primed and lead them to overestimate the impact of their actions.

### ***Institutional***

Institutional change represents another source of social change in social hierarchy, occurring broadly within institutions of a society such as government, law, education, and the media. Institutional social change can be both literal (categorically leading to social change, such as the U.S. Supreme Court's legalization of same-sex marriage) or symbolic (a school celebrating LGBT Pride month, signifying social acceptance at the institutional level). Symbolic change can be instigated by a culture's customs or rituals that often represents a larger, more generalized, shift toward justice or injustice (Kapitny, Kavanagh, Buhrmester, Newson, & Whitehouse, 2019). Other examples of symbolic change include the transfer of federal power like at a U.S. Presidential Inauguration, or a company whose leadership has been historically male shifted toward female leadership, representing a change toward gender equality (Kapitny, Kavanagh, Buhrmester, Newson, & Whitehouse, 2019). Symbolic change can then affect both individual psychologies (e.g., identity, attitudes, behaviors, etc.) and larger cultural values and ideals through mutual constitution, the process whereby individuals and culture mutually affect and change one another (Markus & Kitayama, 2010).

### ***Visibility***

Social change may also be instigated by changes in the visibility of a social group (the extent to which a social group's existence is acknowledged throughout society, from the general population to coverage in the media). Visibility amongst marginalized groups can be understood as a spectrum, in which some groups experience higher visibility (e.g., African Americans) to lower visibility (e.g., Native Americans). High visibility does not necessarily mean higher status, but rather that the status and plight of the social group is well-documented across society and is at least acknowledged at a basic level of awareness by many people. Low visibility groups like

Native Americans are rarely covered in the media and their contemporary status as a marginalized group is not well known to most people (Fryberg, Markus, Oyserman, & Stone, 2008; Fryberg & Townsend, 2008). For example, many people associate Native Americans with the past, catalyzing the low visibility of this group in contemporary society (Leavitt, Covarrubias, Perez, & Fryberg, 2015). Another group that has traditionally experienced low visibility is transgender people. For example, President Obama made history by becoming the first American president to ever use the word “transgender” in a State of the Union address highlighting the lack of visibility of transgender people throughout American politics (Berenson, 2015).

A recent swift increase in visibility for transgender people has been met with an equally swift social backlash. Time Magazine declared the year 2014 as “The Transgender Tipping Point” (Steinmetz, 2014). In 2014, Janet Mock released her memoir, *Redefining Realness*, and Laverne Cox made history as the first transgender person to be nominated for an Emmy. In 2015, Caitlyn Jenner, a retired Olympic gold medalist, came out as transgender in a 20/20 interview with Diane Sawyer and in a widely-circulated *Vanity Fair* cover story. The percentage of Americans reporting they personally know a transgender person doubled from 2008 to 2015 and Google searches for “transgender” quadrupled during the same time period (Adam, 2015). Examining social, political, and historical events after this surge in visibility suggests a negative social backlash. For example, incidents of violence against transgender people continued to increase, public anxiety and debate about public spaces like bathrooms and who should use which ones soared, some people began mocking gender pronouns, and governments reacted with discriminatory practices such as the federal ban of transgender people in the military in 2017 (Davis & Cooper, 2017; Jercich, 2019; Rojas & Swales, 2019; Steinmetz, 2015).

## **Theoretical Frameworks for Studying the Psychological Impact of Social Change**

This section reviews theoretical frameworks from social psychology that offer insight on the psychological impact of social change, with the premise that people interpret social change that disrupts the hierarchy as a threat (to systems that uphold the society they live in, group status, or the self), and as a consequence they exhibit various psychological responses in order to protect oneself.

### ***System Justification & status-legitimizing beliefs***

Conceptualizing changes to hierarchy as a threat to people's desire to maintain the status quo is one possible theoretical framework for understanding how people might react to social change (Jost & Banaji, 1994). While all societies have some form of social structure in which some groups have higher status or power compared to others, the extent to which an individual supports this hierarchy is idiosyncratic, with some individuals favoring larger group differences in power compared to others, a belief system known as *Social Dominance Orientation* (Major & Kaiser, 2017; Sidanius & Pratto, 2001). Relatedly, there are also belief systems to uphold a hierarchy and the status quo. These individually-held beliefs can take many forms and have varied consequences. For example, some people hold various status-legitimizing beliefs to rationalize the legitimacy of the systems they live in, from believing the world is just (good things happen to good people, bad things happen to bad people), to a belief in the Protestant work ethic (working hard will lead to success) (Furnham, 1984; Lerner, 1980). Other research has found evidence for a human preference for the status quo more generally, such as the finding that people endorse torture more when they are given information that torturing as a practice has been around for many years, or that people form preferences for things on the sole basis of familiarity, even for things that have

no discernible meaning such as symbols in a different language not spoken by the participants (Crandall, Eidelman, Skitka, & Morgan, 2009; Eidelman & Crandall, 2012; Zajonc, 2001).

System justification theory draws from many of these belief systems and their related literatures to formulate a broad theory to explain why people uphold the systems that enable the status quo, even when they are unfair (Jost & Banaji, 1994). Numerous studies have documented the phenomenon of people upholding various systems, even when these systems disproportionately harm one's own social groups compared to others (Jost, Banaji, & Nosek, 2004; Van der Toorn & Jost, 2014). For example, a number of studies have captured evidence of system justification to changing social contexts. After Hurricane Katrina, some people viewed the government's inadequate response as a threat to the validity and effectiveness of their governmental systems, and consequently blamed the victims of the natural disaster to shift the blame away from the government and toward the victims in an effort to uphold the system and status quo (Napier, Mandisodza, Andersen, & Jost, 2006). After the 9/11 terrorist attacks, Americans trusted the U.S. government more and increased their prejudice toward Arab Americans (Chanley, 2002; Jost, Banaji, & Nosek, 2004). Other evidence for system justification theory as a way to explain people's resistance to social change includes the findings that people endorse stereotypes as a way to explain group-status differences (Jost & Kay, 2005) and instances of low-status groups favoring the out-group as a means to rationalize their own status (Jost, Pellham, Sheldon, & Sullivan, 2002). Together, this framework and its supporting evidence would suggest that as people experience and witness social change, they may psychologically resist these changes in favor of maintaining the status quo.

### *Social Identity Threat and Group-status Threat*

Another possible explanation for how people might react to social change is that they view gains in status for other groups as a threat to their own status, thus resisting social change may be a protective strategy people employ to protect their own status in society. This possible explanation is particularly relevant to high-status groups who have more status to lose. For example, Whites who endorsed status-legitimizing beliefs reported higher anti-White bias when exposed to evidence of racial progress (i.e., a sign that a lower status group is gaining status), suggesting that for some Whites, social change for other groups leads to insecurity of one's own status (Wilkins, Hirsch, Kaiser, & Inkles, 2017; Wilkins & Kaiser, 2014; though see Crawford, Vodapalli, Stingel, & Ruscio, 2019 for a failed replication of Wilkins & Kaiser, 2014). In a follow-up study, this finding disappeared when Whites who endorsed status legitimizing beliefs were given a self-affirmation task before being exposed to the racial progress manipulation, suggesting that participants were perceiving racial progress as a threat (Wilkins & Kaiser, 2014). In a different study, exposing White Americans to demographic trends which predict a future "majority-minority America" increased their conservative ideologies, suggesting these participants responded to an increase in minority-status by supporting ideologies traditionally associated with curtailing racial progressivism (Craig & Richeson, 2014). Physiological data in a minimal-groups paradigm also suggests that when status differences are perceived as unstable to high-status groups, they exhibit a biological response consistent with threat (Scheepers, 2009; Scheepers & Knight, 2020).

People may also react to changes in social hierarchy by modulating the extent to which they identify with their social groups as a means to protect oneself against threat. Group-membership can provide people with many benefits, including social support and a reduction in uncertainty (Ellemers, Spears, & Doosje, 2002; Hogg, Sherman, Dierselhuis, Maitner, & Moffitt,

2007). These benefits may overpower other concerns like the threats described above (threats to the status quo or one's group status) and compel people to embrace their group-identity, even if their group's status is at stake. Thus, when there is social change that results in a loss of a group's status, members may react by affirming their group identity in face of a threat in order to continue enjoying the multitude of benefits associated with belonging to a social group or as a way to assert opposition, as opposed to psychologically distancing oneself from one's group. A number of studies have documented this affirmation response as a response to coping with a threat to one's group status. For example, various social groups like union workers, gay men, and women increase their identification with their group and associated beliefs after the status of their group was threatened (Schmitt, Branscombe, Kobrynowicz, & Owen, 2002; Simon et al., 1998; Veenstra & Haslam, 2000). In Chapter 3, we found that Clinton supporters in the 2016 U. S. Presidential Election increased their gender and political identities, as well as increased support for socio-political issues associated with Clinton and her campaign, after Trump's victory, suggesting that Clinton supports affirmed their identities and beliefs in the light of change in society that indicated their group would lose status (Gomez et al., 2017). Previous research also suggests the extent to which lines between groups is permeable (e.g., the possibility of a group member changing their group-status to a different group in the hierarchy) can affect the likelihood of some people's decision to increase or decrease identification with the their group. For example, when a hierarchy is permeable (mobility between groups is easily achievable), low-status group members who do not strongly identify with their group express a desire to join a higher status group (Ellemers, Spears, & Doosje, 1997).

### *Threats to the Self*

In addition to concerns about the status of the group, people may also react to social change out of concern for the self, ranging from reputational concerns to existential needs for knowledge and order. In the U.S., pervasive egalitarian norms dictating people to be morally good drives behavior – even when individuals do not personally hold these attitudes (Crandall, Eshleman, & O’Brien, 2002; Devine, 1989). Social change that threatens the status of marginalized groups protected by these egalitarian norms, then, may lead people to react in ways consistent with norms rather than their personal beliefs. For example, when a confederate established an egalitarian norm by sharing non-prejudice views, participants subsequently expressed lower levels of prejudice compared to a control condition (Monteith, Deneen, & Tooman, 1996). In addition to reputational concerns, social change may also threaten an individual’s existential needs for order and certainty (Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007; Lerner, 1980). In a computer-simulation task, participants who were primed to think about uncertainty in their life were later more likely to identify with a hypothetical group (Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007). Given the importance of the individual in the U.S., perceiving social change as threats to the self may be especially likely in this context (Markus & Kitayama, 1991). Thus, people may perceive social change as a threat to the self because of concerns of how they are perceived by others in adhering to social norms.

### **Overview of Present Work**

In Chapter 2, self-made change (in the form of online activism) is explored in the context of sexual violence toward women. By engaging in online activism, participants can believe they made a positive change, and by investigating their subsequent behavior (i.e., the extent to which they engaged in a problem-solving task) we can understand how people’s behavior can change

when they are responsible for self-perceived change: Do they continue to enact further change, or does their initial action of change lead them to disengage, perhaps to avoid further changes to the status quo? In Chapter 3, institutional change (in the form of Clinton's defeat to Trump in the 2016 US Presidential Election, representing a step backwards for women's rights) is longitudinally investigated to explore how Clinton's supporters modulate their identity to their social groups as a response to this change. Implications for changing group-identification as a response to social change are discussed. Finally, in Chapter 4, visibility change is examined by studying people's attitudes toward transgender people, a social group that recently experienced an increase in visibility and subsequent backlash. For some people, this increase in visibility meant an introduction of an entirely "new" social category, possibly threatening their sense of the status quo and leading them to contribute to the social backlash. We explore this phenomenon by exposing people to information and evidence that transgender people are not a new social category to test whether this decreases transgender prejudice. Across three papers, three different forms of social change are explored (self-made, institutional, and visibility) on how they impact three different psychological variables (behavior, identity, and attitudes). In each paper, social change (and thus, changes in social status in the social hierarchy) is explored for three different marginalized groups: sexual violence survivors, women, and transgender people. Additionally, both positive (a social group gaining status, Chapter 2) and negative changes (a group losing social status, Chapter 3) are investigated.

## Chapter 2

‘One and done’ or ‘foot in the door?’: Investigating whether online activism discourages or encourages subsequent activism

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### Abstract

Online activism has been criticized by both the scientific community and the public as “slacktivism,” a low-effort way for people to get involved that may actually discourage further activism. However, extant research is mixed on whether online activism encourages or discourages future activism. We test whether allies (men acting on behalf of women) are more likely to be slacktivists than marginalized group members (women acting on behalf of women) because of moral credentialing. In a series of online experiments, men and women read comments from an online article about sexual assault. In the online activism condition, participants were instructed to read through the comments and select those they believed should be removed because they were offensive to women, whereas in the control condition participants just read the comments. Afterwards, to measure subsequent engagement, participants were asked to brainstorm solutions on how to address sexual assault on college campuses. Aggregated across four nearly identical studies, we find that 1) engaging in this form of online activism led people to feel morally credentialed and that they made a positive impact compared to the control condition, both moderated by gender such that women experienced greater increases in these variables compared to men, 2) moral credentialing mediated the relationship between online activism and subsequent activism such that engaging in online activism led people to feel good, which in turn was associated with expending less effort in a subsequent activism task and 3) this mediation was not moderated by gender.

‘One and done’ or ‘foot in the door?’: Investigating whether online activism discourages or encourages subsequent activism

The Internet has become a popular platform for social mobilization. From originating the term (and movement) Black Lives Matter to raising awareness about sexual harassment and leading to public and professional scrutiny of perpetrators in the #MeToo movement, many activists have harnessed the power of the Internet to instigate social change (Vargas, 2012; Zacharek, Dockterman, & Edwards, 2017). The Internet offers many ways to engage in activism, from clicking “like” on Facebook or changing one’s profile picture, to tweeting on Twitter, to signing online petitions, to joining online communities. However, these are often met with criticism from both scientists and the public as “slacktivism,” or a low-effort way to engage in activism with little (or no) impact (Gomez & Kaiser, 2019). What is the efficacy of these online actions on whether they lead people to engage in subsequent activism?

The “slacktivism hypothesis” suggests that engaging in online activism leads people to subsequently disengage from future activism (Kwak et al., 2018) and empirical data thus far is mixed. For example, a meta-analysis of 36 studies found that half of the studies found statistically significant evidence for slacktivism (Boulianne, 2015). While some studies find evidence for the slacktivist hypothesis, others do not, suggesting there may be important moderation and mediation variables between online activism and subsequent activism. In the present study, we test a possible explanatory variable (moral credentialing) and moderator (allyship) to better understand the process of online activism and subsequent activism.

### **Does online activism encourage or discourage subsequent action?**

The following sections describes the emerging subfield of slacktivism, and describes evidence concerning whether engaging in initial acts of activism increase or decrease the likelihood of engaging in subsequent activism.

#### **Evidence against the slacktivism hypothesis**

Consistency theories in the social psychological literature suggest that engaging in online activism would encourage future action. For example, perhaps online activism is a “foot-in-the-door” effect such that agreeing to a low-effort task (online activism) might increase the likelihood of engaging in a higher effort task (e.g., offline activism) (Freedman & Fraser, 1966). Cognitive dissonance theory would also suggest engaging in online activism would increase subsequent action. (Festinger, 1962). For example, engaging in online activism for the #MeToo movement could mean a person cares about stopping sexual harassment, and in order to maintain psychological consistency, a person would feel compelled to alter their subsequent behavior to match these beliefs. Similarly, self-perception theory (people develop a sense of their attitudes based on observing their own behavior) would suggest that people might form their attitudes based on previous online activity, which would then direct subsequent behavior to align with their self-perception (Bem, 1972).

A few recent empirical studies support this consistency perspective for why engaging in online activism might encourage subsequent action. For example, people who used Twitter to talk about the protests of “Arab Spring” were more likely to physically attend the protests (Tufekci & Wilson, 2012). In a different study, when participants were given the option to sign an online petition or not, those who signed the petition were significantly more likely to later donate money to a similar cause (maintain psychological consistency), and those who did not

sign the initial online petition were later more likely to donate money to a different cause (due to a moral balancing effect) (Lee & Hsieh, 2013). In another experimental study, participants were significantly more likely to volunteer for a cause after participating in a public (vs. private) form of activism on their own social media account, suggesting people may behave consistently to maintain an egalitarian public image (Lane & Dal Cin, 2018). A meta-analysis of 36 studies found that 80% of the studies found a positive association between social media use and participation in activism, suggesting there may be a general positive correlation between social media use and activism (Boulianne, 2015). However, the causal pathway between online and offline activism remains unclear because of the correlational nature of this meta-analysis.

### **Evidence for the slacktivism hypothesis**

In contrast, other psychological theories would predict the opposite: engaging in online activism may not lead to future activism or even less subsequent activism. Self-determination theory distinguishes between intrinsic motivation (engaging in behavior out of innate interest or enjoyment in the task) and extrinsic motivation (engaging in behavior for external purposes, like being socially pressured or for financial gain) (Ryan & Deci, 2000). A number of studies have found that when people act from intrinsic motivation (instead of extrinsic), their behavior is more likely to be sustained over time (Benabou & Tirole, 2003; Ryan & Deci, 2000). For example, in a smoking-cessation study, smokers who were given an intrinsic motivation intervention (compared to an extrinsic motivation intervention, a financial incentive) were significantly more likely to engage with the materials and stop smoking over time (Curry, Wagner, & Grothaus, 1991). People who engage in online activism for intrinsic reasons, like genuine interest in an issue or compassion toward a marginalized group, may be more likely to engage in consistent

behavior in the long-term compared to people who engage in online activism for extrinsic motivation (e.g., looking like a “good” person to their social network).

A number of empirical studies specifically about online activism support the slacktivism hypothesis. For example, writing a supportive comment for an activist website was found to decrease participants’ likelihood of signing up for subsequent offline activism (Schumann & Klein, 2015). Similarly, people who joined a Facebook group demonstrated less subsequent activism (interest in volunteering to stuff envelopes for a campaign) when the Facebook group was public (as opposed to private) (Kristofferson, White, & Peloza, 2014). In another study, when participants were given the option to share an article on their own social media page as a form of online activism, they were subsequently less likely to engage in additional activism for the same issue (though they were later more likely to engage in activism for a different social issue) (Wilkins, Livingstone, & Levine, 2019).

These conflicting findings suggest that there may be important moderators and mediators that explain under what circumstances online activism encourages or discourages subsequent action and why, as suggested by Halupka (2018). Indeed, a number of these studies have found evidence for potential boundary conditions of slacktivism, such as whether the action is public or private and whether the action is within the same domain as the initial activism or not (Kristofferson, White, & Peloza, 2014; Lane & Dal Cin, 2018; Wilkins, Livingstone, & Levine, 2019). The present work seeks to contribute to this literature by exploring allyship in relation to the social cause as a possible moderator on whether online activism discourages or encourages subsequent action as well as a potential mediator: moral credentialing.

## Definitions

In this paper, we define allyship within the context of a *social identity-based issue*, an issue that disproportionately affects some group of people more than others. We define those who belong to groups that are disproportionately affected by the social issue as *marginalized group members* (MGMs) and those who are relatively less affected and willing to act on behalf of the group members as *allies*. For example, within the context of the Black Lives Matter movement, Blacks would be the MGMs (because Blacks are disproportionately affected by police brutality) and Whites who align with Blacks to help fight racism would be allies.

We propose that allies are more susceptible to slacktivism (which we define as disengaging from subsequent action after engaging in online activism) than MGMs. We hypothesized this phenomenon may occur because allies may feel morally credentialed, as we discuss below. Conversely, MGMs may show a consistency effect such that engaging in online activism increases subsequent action. Including allyship as a potential moderator not only helps us understand the potential boundary conditions of slacktivism, but may also help elucidate how to better leverage allies, who by definition (because of relative privilege and power and numbers) have the potential to make significant impact, to become involved in sustained activism (Czopp & Monteith, 2003; Drury & Kaiser, 2014; Ruggs, Martinez, & Hebl, 2011).

## Moral Credentialing

One explanation for why allies may be more susceptible to slacktivism than MGMs is because of moral credentialing; a phenomenon in which people's past behaviors or attitudes "credentials" them to act oppositely in subsequent behaviors or attitudes (Monin & Miller, 2001). For example, in the first study on moral credentialing, participants who were given the opportunity to disagree with blatantly (vs. ambiguously) sexist statements later expressed more

sex discrimination in a hypothetical hiring task (Monin & Miller, 2001). Monin & Miller (2001) argued that disagreeing with sexist statements morally credentialed people so that they could later express sexism. Interestingly, this effect was only found for men but not women. Group membership may moderate this effect because of a “shifting standard,” whereby men judge their actions compared to other men (i.e., believing that standing up against sexism is especially moral as a man out of believing that most men do not), and women judge their actions compared to other women (believing standing up against sexism is typical for women and thus not an especially moral action) (Biernat & Manis, 1994). Similarly, allies may be morally credentialed when they engage in online activism on the behalf of MGMs and feel licensed to disengage from subsequent action. Moral credentialing can also be “vicariously” shared among group members (Kouchaki, 2011). For example, witnessing the good behavior or attitudes of another group member can morally credential other ingroup members, further suggesting a relationship between group membership and moral credentialing (Kouchaki, 2011).

### **Present Study**

We add to a largely correlational literature by experimentally testing whether allies are more susceptible to slacktivism compared to ingroup members and whether this can be explained (mediated) by moral credentialing. We use sexual assault as our social issue because it fits our definition of a social identity-based issue in that women are disproportionately affected (Perez-Peña, 2015). Thus, in the context of our study, men will be considered allies and women will be considered the MGMs in relation to the social issue of sexual assault. See Figure 1 for a conceptual model.

## Methods

We ran four near-identical studies to explore the hypotheses above. Unless otherwise noted, all studies follow the methods described below. After running the first study, we submitted a pre-registration (<https://aspredicted.org/blind.php?x=9ey8kr>) documenting our analytic plans for the subsequent replication, however, after mixed results we ran two additional replications (4 studies total). In light of mixed results across the four studies, we aggregated across all studies to better understand general trends across all of the data. These deviations from the original pre-registration make these analyses exploratory and not confirmatory.

### Participants

All participants (total N = 1305) were recruited at a large public university on the West Coast over one year (2016 to 2017). Because gender will be tested as a crucial moderator, we sampled to have roughly equal men and women.

### Procedure

Participants were recruited to participate in an online survey for course credit that took approximately 20 minutes. Participants were randomly assigned to an online activism condition (flag negative online comments for removal) or a control condition (simply read online comments).

### Materials and Measures

**Online news article.** All participants first read an article on sexual assault adapted from a recent article in the New York Times (Perez-Peña, 2015; see Appendix A for full text). The article was designed to introduce the problem of sexual assault as a social identity-based issue to participants in that it disproportionately affects women.

**Online comment manipulation.** Then, participants read a “random selection” of comments from the online comment section of the article (see Appendix B for the text of all comments). In the control condition, participants were simply instructed to read each of the comments carefully. In the online activism condition, participants were instructed to “...Select the comments you feel should be removed because they are offensive and hostile toward women.” Participants could select as many or as little comments as they wanted, and when they selected a comment to be removed it would become highlighted in red (see Appendix C for a screenshot).

Two things were done to make participants in the online activism condition feel like their action of flagging comments would help combat sexual assault. First, we added a paragraph to the article (see Appendix A; added text in bold) that established online harassment as one way that exacerbates sexual assault as a social issue because it makes it harder for “victims to share their stories and opinions.” Second, participants in the online condition were told that their responses would be used to “...help media sources such as the New York Times and The Huffington Post develop a protocol on how and when to make their online spaces safer for women by removing sexist comments” to further put participants in the mindset that their action of flagging comments would actually be helpful. After flagging comments, participants in the online activism condition were given an additional thank you message (“Making the Internet a safer place is just one way to address the problem of sexual assault by helping victims of sexual assault feel more comfortable coming forward with their stories and opinions”). In Study 4, this additional thank you message was deleted for a more conservative test.

**Online comments.** All comments were based on actual comments the research team found online, edited for clarity and edited for language. There were 20 comments, with 6 neutral

comments that were not explicitly for or against the problem of sexual assault (“Where can I find the study?”), 7 positive comments that expressed opinions in support for addressing sexual assault (“One rape in a million is too many. Why is it the numbers that matter?”), and 7 negative comments (“Women get drunk so they can later say they did not consent. Just in case.”). Including roughly the same number of negative and positive comments served to prevent participants from making any assumptions about which type of comments were the norm. Comments were randomly stylized across the positive, negative, and neutral comments to have minor typos and grammar errors to increase believability that the comments were real comments found online.

**Manipulation check.** Next, in order to test whether our online activism task effectively made participants feel like they made a positive difference, participants rated the extent to which they agreed or disagreed (1-Strongly disagree, 6- Strongly agree) to the statements “Participating in this study made me feel like I have helped make a difference” and “Participating in this study made me feel like I have helped make a positive impact on the problem of sexual assault.” These items were averaged to form a composite (Pearson’s  $r > .87$  in all studies).

**Moral credentialing.** To measure moral credentialing, participants were asked to rate the extent to which they agreed or disagreed (1-Strongly disagree, 6- Strongly agree) to the statements “Participating in this study made me feel like a good person” and “Participating in this study made me feel good about myself.” These items were averaged to form a composite (Pearson’s  $r > .86$  in all studies).

**Subsequent activism.** Participants were then given a chance to engage in a problem-solving brainstorming task on how to combat sexual assault to measure their subsequent engagement after engaging in online activism. Participants were asked to respond to the prompt,

“Please list as many different ideas as you can think of on how to make sexual assault less of a problem on American college campuses.” To measure participants’ effort with this problem-solving task, we determined how much each participant wrote (i.e. how many characters they typed), with the assumption that the more participants wrote, the more effort they expended with this subsequent task. As outlined in our pre-registration, character count was the primary way of analyzing these data. Additionally, two research assistants independently coded participant responses for the number of conceptually different solutions ( $K = .89$ ; suggesting a strong level of agreement using the guidelines set by McHugh (2012)). Because of this high reliability, raters’ scores were averaged.

**Demographics and study feedback.** Finally, participants completed demographic questions and were debriefed. We also included space for participants to give feedback on the survey or to write any comments they would like, as we were concerned that the sensitive nature of the topic and the offensive online comments may offend participants.

### **Data Analytic Plan**

No participants were excluded from analyses, except those who did not complete all measures. To confirm participants in the online activism condition were flagging the negative comments as intended, we analyzed their flagging behavior (how many negative comments each participant flagged). All data were combined for analyses instead of using a meta-analysis because 1) all four studies were nearly identical in methods and recruited from the sample population of students, 2) this increases power to detect interactions in a complex moderated mediation model with two interactions, and 3) to our knowledge, there is not a widely-agreed way to meta-analyze conditional indirect effects. To see analyses by study, see Appendix D.

To test our hypotheses, we used SPSS 26 and PROCESS (Hayes, 2017), a way to test for moderated mediation using bootstrapping methods to test the significance of the indirect effects. We set the bootstrapping at 10,000 samples for all analyses and report the unstandardized regression coefficients, as recommended by Hayes (2017). To test whether moral credentialing mediates the relationship between online activism and subsequent activism, we used a simple mediation model (“Model 4” in PROCESS). Next, we tested whether allyship moderated the extent to which moral credentialing was associated with subsequent activism, as well as whether allyship moderated the extent to which participants were morally credentialed as a function of online activism (both using “Model 58” in PROCESS).<sup>1</sup> In all models, the independent variable was binary (0 = control, 1 = online activism), the moderator (gender) was binary (men = 0; women = 1), and the dependent variable was continuous (the amount of characters used in the brainstorming solutions task).

## Results

Because all four studies were nearly identical, we report the results of all four studies combined, but for results broken down by study see Appendix D. Note that the distribution of the outcome (character count for brainstorming task) is non-normal (as seen by the large standard deviations), but all results stay consistent if we log-transform character count to make it normal.

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<sup>1</sup> Note that this is different than the model we pre-registered (Model 16, which is identical except it does not include the A x B interaction). We used this model because when we failed to replicate Study 1, we did not want to continue basing our model assumptions on the results of that first study. Whether there was a significant gender interaction on online activism and moral credentialing is a theoretically-relevant question and an additional analysis we would have run anyways, but including it in the moderated-mediation model test 1) reduces the number of redundancy in tests and 2) is more accurate to the data, as this interaction is significant in all studies except Study 1.

### **Flagging negative comment behavior**

To ensure participants were engaging in the online activism task as we intended, we analyzed the flagging behavior of participants in the online activism condition. Across all four studies, we found that 50.00% of participants flagged all 7 negative comments, 12.75% flagged 6 negative comments, 8.76% flagged 5 negative comments, 5.53% flagged 4 negative comments, 6.76% flagged 3 negative comments, 3.69% flagged 2 negative comments, 8.60% flagged 1 negative comment, and 4.00% flagged zero negative comments. Given that participants were given the option to choose as many or as little comments as they would like, and the level of negativity across the negative comments was variable (i.e. some were not as negative as others), we were satisfied with this variability in flagging behavior, which was negatively skewed such that most participants were flagging all or nearly all comments we felt were candidates to be removed.

### **Manipulation check**

To test whether our novel online comment task induced participants to feel like they made a difference – and thus actually feel like they participated in a form of activism—we measured the extent to which participants felt like they made a positive impact on the problem of sexual assault. A two-way ANOVA revealed a significant main effect for condition,  $F(1, 1301) = 71.28, p < .001$ , indicating participants in the online activism condition ( $M = 3.57, SD = 1.24$ ) felt like they made more of a positive impact than those in the control condition ( $M = 2.98, SD = 1.28$ ). There was also a significant main effect of gender,  $F(1, 1301) = 14.13, p < .001$ , such that women ( $M = 3.41, SD = 1.32$ ) reported feeling like they made more of a positive impact than men ( $M = 3.14, SD = 1.26$ ). These main effects were qualified by a significant Condition X Gender interaction,  $F(1, 1301) = 12.62, p < .001$ . Simple effect analyses suggested the online

activism condition had a significantly larger effect on increasing the perception of making a positive impact for women ( $F(1, 1301) = 71.11, p < .001$ ) compared to men ( $F(1, 1301) = 12.10, p < .001$ ), though the online activism condition significantly increased perceived impact for both genders.

### **Main results**

The direct effect of online activism on subsequent activism was not significant,  $b = 17.42, SE = 12.81, t = .17, p = .17$ . This is consistent with previous literature not finding evidence for the slacktivist hypotheses (Lane & Dal Cin, 2018; Lee & Hsieh, 2013; Tufekci & Wilson, 2012), but a non-significant direct effect does not preclude the possibility of mediation (Hayes, 2017). Consistent with hypotheses, participants in the online activism condition were significantly more morally credentialed compared to the control condition,  $b = .38, SE = .10, t = 3.92, p < .001$ . The effect of online activism on moral credentialing was significantly moderated by gender, such that women were more morally credentialed by the experimental condition than men,  $b = .43, SE = .14, t = 3.11, p = .002$ .

Moral credentialing was significantly negatively associated with subsequent activism, such that the more a participant was morally credentialed, the less they wrote in the subsequent activism task,  $b = -25.87, SE = 7.07, t = -3.66, p < .001$ . This association was not moderated by gender,  $b = 14.50, SE = 9.69, t = 1.50, p = .135$ . Examining whether the extent to which moral credentialing mediates the relationship between online activism and subsequent activism showed that the indirect effect was significant for men,  $b = -9.88, SE = 4.10, CI [-18.98, -3.15]$  but not women,  $b = -9.23, SE = 5.36, CI [-20.66, .60]$ . However, these indirect effects were not significantly different, Index of Moderated Mediation = .65,  $[-12.61, 13.17]$ . These results do not change when analyzing raters' coded number of solutions instead of character count. Because

there was no evidence for a significant moderated-mediation, we conducted a simple mediation in PROCESS (Model 4) as a follow-up analysis since the previous model does not test for simple mediation. We found that moral credentialing significantly mediated the relationship between online activism and subsequent activism for all participants, regardless of gender, such that participants in the online activism condition were significantly more morally credentialed than those in the control condition, and this increase in moral credentialing was associated with less effort on the subsequent activism task,  $b = -10.88$ ,  $SE = 3.45$ ,  $CI [-18.18, -4.66]$ . However, this mediation was not significant when using the raters' coded number of solutions instead of word count,  $b = -0.04$ ,  $SE = 0.03$ ,  $CI [-0.11, 0.02]$ . This discrepancy may be explained by differences in elaboration. For example, some participants spent more effort elaborating on a single solution, (high character count but only one proposed solution), thus wrote more than a participant who offered a few solutions but these were written as a simple list. As outlined in our pre-registration, character count was our primary dependent variable because it is a more precise measurement of a person's subsequent effort because it better accounts for potential differences in elaboration. For complete statistics aggregated across all studies, see Table 1.

### **Discussion**

We found no significant direct effect of online activism on subsequent activism, providing additional evidence to the literature against the slacktivist hypothesis that posits online activism leads people to disengage from further activism. However, we did find evidence that the relationship between online activism and subsequent activism was mediated by moral credentialing, providing insight into why previous studies on slacktivism may have had mixed results: slacktivism may not be a universal effect but rather a more narrow effect contingent on intervening variables such as moral credentialing.

Though we did not find evidence to support allyship as a moderator of the extent to which moral credentialing mediates the relationship between online activism and subsequent action, allyship was a significant moderator for a number of other findings. Allies' perceived impact and moral credentialing were significantly less affected by the online activism condition than MGMs. Taken together, these allyship findings suggest allies and MGMs are affected differently at a psychological level when engaging in online activism, with MGMs perhaps deriving a higher sense of well-being ("Participating in this study made me feel good about myself") and agency ("Participating in this study made me feel like I have helped make a difference"). These results are inconsistent with our initial hypothesis that allies (in this case, men) may report higher perceived moral credentials compared to MGMs (in this case, women) because men might evaluate their actions compared to other men, who are perceived as less likely to engage in activism on the behalf of women. Perhaps in this particular study, some men may have felt defensive because of perceived accusations of men as perpetrators, which led to less moral credentialing compared to women. These data suggest that engaging in a low-cost form of online activism, flagging negative online comments, can cause people to feel like they have made a difference and good about themselves, especially for MGMs, suggesting online activism may be a successful form of collective action from the perspective of individuals who engage in it, potentially providing much-needed psychological comfort or "self-care" for activists who are prone to burnout (Chen & Gorski, 2015; Piat, 2019). Allyship also moderated the extent to which moral credentialing was associated with less subsequent activism was greater for allies than MGMs, suggesting that allies who are morally credentialed may be especially susceptible to expending less effort when asked to participate in a form of activism, aligning with

previous research that has found being a member of an advantaged group predicts less engagement in activism (Van Zomeren, Postmes, & Spears, 2008).

### **Limitations and future directions**

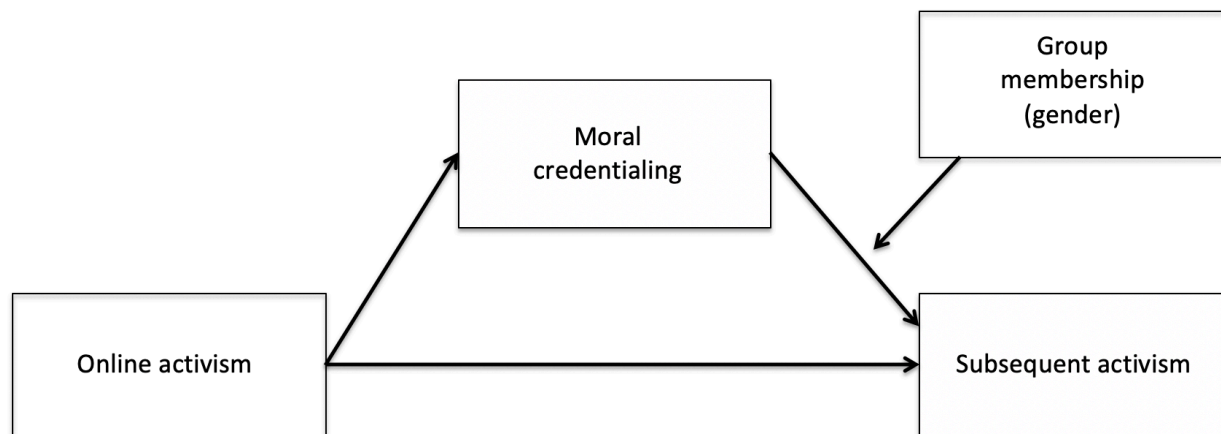
While sexual assault fit our description of a social identity-based issue, it is unique in that men are implicated in this social cause as the perpetrators. Thus, observed gender differences in the data could be the result of male participants feeling guilty as members of the group perceived to be largely responsible for the problem. Future research should replicate with a different social identity-based issue in which the allies are not as disproportionately seen as perpetrators of the problem to rule out this alternative explanation or highlight the potential importance of status as a perpetrator in slacktivism. Additionally, despite our attempts at ecological validity (such as using materials we found online), the experience of the study does not exactly mirror the actual experience of engaging in online activism. For example, engaging in online activism in our study was experimentally induced and not purely a choice, though participants in the activism condition could choose to not flag any comments (which some did). Future research should implement experimental designs in the lab that use other online activism manipulations (e.g., having participants tweet on Twitter or “like” something on Facebook) as well as dependent behavioral measures that are more similar to offline activism (e.g., donating money, agreeing to take flyers for dissemination, sign up to attend an event/protest/demonstration, etc.)

We did not find evidence for the consistency hypothesis for MGMs —women in the activism condition did not write significantly more in the brainstorming task. This may have occurred because women may be already sensitive to the issue of sexual assault, so engaging in an initial task may not significantly change their subsequent behavior. Another possible explanation is that some women may feel a competing desire to uphold the status quo via system

justification theory (Jost & Banaji, 1994; Jost, Banaji, & Nosek, 2004). Future research should investigate the importance of baseline attitudes toward a social cause and whether they predict consistency effects. Also, the present study differs from traditional foot-in-door studies in that both the initial and subsequent task were relatively low-cost activities. Perhaps a consistency effect may depend on the movement from a low-cost initial task to a relatively higher-cost task.

Another limitation is the exploratory nature of the present work. While we generally followed a pre-registration, inconsistent findings across early studies lead to additional replications and analyses. The common trends we discuss in the main results were discovered only after aggregating across the nearly-identical studies – analyzing each study in isolation provides a more mixed account (e.g., the simple mediation model is significant in 2 out of 4 of the studies). Thus, the findings discussed in this paper are best interpreted as exploratory and not confirmatory, despite the number of internal replications.

As the Internet becomes an increasingly popular platform for social justice, understanding how online activism affects individuals is crucial for sustaining social movements. Importantly, these findings add to a growing body of literature illustrating how online activism need not always translate into slacktivism, though they also prompt the need for future work to examine how potential mediators and moderators can help us better understand the path from online activism to subsequent activism.

**Figure 1: Conceptual Model****Table 1: All studies combined**

Predictor	Estimate	<i>SE</i>	<i>t</i>	<i>p</i>
Moral Credentialing (Mediator Variable Model)				
Constant	3.38	.07	49.27	<.001
Online activism	.38	.10	3.92	<.001
Gender	-.22	.10	-2.19	.029
Gender x Activism	.43	.14	3.11	.002
Subsequent action (Dependent variable model)				
Constant	273.85	26.74	10.24	<.001
Moral Cred. (MC)	-25.87	7.07	--3.66	<.001
Online activism	17.42	12.81	1.36	.174
Gender	-22.27	36.72	-.61	.544
Gender x MC	14.50	9.69	1.50	.135
Conditional indirect effects at gender = 0 and 1				
	Estimate	<i>SE</i>	95% CI	
Overall (Model 4)	-10.88	3.45	-18.18, -4.66	
0 (Men)	-9.88	4.10	-18.98, -3.15	
1 (Women)	-9.23	5.36	-20.66, .60	
Index of Moderated Mediation				
	Index	<i>SE</i>	95% CI	
	.649	6.51	-12.61, 13.17	

N = 1305

## Appendix A

Sexual Assault Article (adapted from Perez-Peña, 2015; added text by research team in bold)

### *1 in 4 Women Experience Sex Assault on Campus*

By Emma Pierson, Feb. 22th, 2016

In four years of college, more than one-fourth of undergraduate women at a large group of leading universities said they had been sexually assaulted by force or when they were incapacitated, according to one of the largest studies of its kind, released Monday.

The survey bolstered findings from previous studies but stands out for its sheer size — 150,000 students at 27 colleges and universities took part last spring — and for the prominence of the institutions involved, which include many of the nation’s elite campuses, including all of the Ivy League except Princeton.

Last year, President Obama convened the first White House task force on college sexual assault, part of a growing demand for colleges to acknowledge, measure and address the problem. That task force, like members of Congress and victim advocates, called on colleges to conduct rigorous “campus climate” surveys, including detailed information on the frequency of assault and harassment.

Previous studies have estimated that about one in five women are sexually assaulted while at college, though comparisons are difficult because the studies use varying definitions of sexual assault.

The A.A.U. survey found that even in the most serious assaults, those involving penetration, almost three-fourths of victims did not report the episode to anyone in authority, let alone law enforcement. The reason victims gave most often for not reporting episodes was that they did not think the episodes were serious enough to report; others said they felt ashamed, or did not think they would be taken seriously.

“This survey is significant confirmation of a major problem, and it confirms what we’ve been saying about the mind-set on campus and the reception survivors expect to encounter,” said Zoe Ridolfi-Starr, deputy director of Know Your IX, an advocacy group that fights sexual assault.

Most of the institutions in the study released their own figures from the survey, and several of the most respected ones had some of the highest rates of sexual assault by force or incapacitation for undergraduate women — 34.6 percent at Yale, 34.3 percent at the University of Michigan, and 29.2 percent at Harvard.

Senator Kirsten Gillibrand, Democrat of New York, praised the study but expressed impatience that Congress had not acted to force colleges to improve their handling of sexual assault. “How many surveys will it take before we act with the urgency these crimes demand?” she asked.

“Part of the problem is the way our culture talks about rape,” said Dr. Michael West, a professor who studies sexual assault at Stanford University. “Media and popular culture normalize and minimize rape. People question victims—What was she wearing? Why was she drinking?—shifting the blame to victims instead of rapists.”

According to Dr. Amanda Miller, a professor of Comparative Media Studies at MIT, the Internet has only made the problem worse. “Online harassment against women is a major issue. Go to any comments section of an article written by a woman or for women, and you’ll likely find at best sexist comments and at worst threats of rape and death.” The looming inevitability of online harassment makes it even harder for victims of sexual assault to share their stories and opinions.”

## Appendix B

Text of all online comments (in order as presented, coded as positive/negative/neutral)

1. [Positive] Yeah, if she says no and you proceed, you're a rapist. If she's drunk or unconscious, than you're a rapist. If she just lies there not moving, then you should be asking her, "What's wrong?" before going any further. I don't care how young or horny you are, everybody knows what enthusiasm looks and sounds like. If it's not present, move on.
2. [Neutral] Interesting article
3. [Negative] Quit dressing up like whores and being so available to the scenario
4. [Positive] Instead of the emphasis placed on women not reporting (of course a majority), we might emphasize what's wrong with our culture that reporting always means taking on additional abuse.
5. [Negative] I'm really getting bored of these dumb women complaining, I hope they all get raped.
6. [Positive] Rape jokes are never in good taste. Nothing funny about getting raped.
7. [Neutral] Thank you
8. [Negative] lying women deserve to be raped
9. [Neutral] It would be good to know how that compares with the rest of the population.
10. [Positive] You might have noticed something about these and related statistics: It's almost guaranteed that among the women in your immediate family and closest friends, at least one and quite possibly several have been sexually assaulted. Of course, you might not know about it because lots of women who are victims don't tell \*anybody\*, but if you think this doesn't affect you, you are not paying attention.
11. [Neutral] glad someone is writing about this

12. [Negative] Women can get away with whatever by lying “waaahhh he raped me.”
13. [Negative] The only good college girl is one on her back.
14. [Positive] i have the utmost sympathy for any person that has encountered sexual violence
15. [Neutral] These findings are interesting
16. [Negative] How about girls try to show some common sense and stay away from fraternities, athletes and alcohol? Is that so difficult to do? Girls are made by nature to be sexually attractive. Are they not aware of this?
17. [Positive] One rape in a million is one too many. Why is it the numbers that matter?
18. [Neutral] Where can I find the study?
19. [Positive] Wow wow wow wait a minute.. Why is the comment section full of men writing “stop wearing slutty clothes then” etc. You can’t seriously mean that a man can’t help that he need to have sex with a girl just because she wears a sexy dress even if she said no and tries to get away. Is it the girls fault? No. It is NEVER a girls fault if she gets raped. Stop make excuses for this crime. And it is not only girls with “sexy” clothes that are being raped. And who decides what “sexy” clothing is? This is craziness. A rape is never okay. A no is always a no.
20. [Negative] Women get drunk so they can later say they did not consent. Just in case.

## Appendix C

Screenshot of example avatars and usernames with comments and red highlighted comment flagged for removal



The image shows three social media comments stacked vertically. Each comment includes a profile picture, a username, a date, and a text comment. The middle comment is highlighted with a thick red border, indicating it is flagged for removal.

**BluJuice** • 22 Feb 2016  
Interesting article

**neoritter** • 22 Feb 2016  
Quit dressing up like whores and being so available to the scenario

**4irplan3** • 22 Feb 2016  
Instead of the emphasis placed on women not reporting (of course a majority), we might emphasize what's wrong with our culture that reporting always means taking on additional abuse.

### Appendix D – Supplemental Analyses

Table 1A: Study 1 Moral Credentialing

Predictor	Estimate	<i>SE</i>	<i>t</i>	<i>p</i>
Moral Credentialing (Mediator Variable Model)				
Constant	3.22	.14	22.80	<.001
Online activism	.73	.21	3.55	<.001
Gender	-.04	.20	-.20	.838
Gender x Activism	.06	.28	.22	.824
Subsequent action (Dependent variable model)				
Constant	473.67	58.15	8.15	<.001
Moral Cred. (MC)	-66.36	15.58	-4.26	<.001
Online activism	9.70	29.03	.33	.738
Gender	-191.01	81.37	-2.35	.020
Gender x MC	48.38	21.37	2.26	.024
Conditional indirect effects at gender = 0 and 1				
Gender	Estimate	<i>SE</i>	95% CI	
Overall	-31.92	12.54	-60.45, -11.63	
0 (Men)	-48.53	21.26	-95.57, -13.66	
1 (Women)	-14.29	11.64	-41.32, 4.48	
Index of Moderated Mediation				
	Index	<i>SE</i>	95% CI	
	34.24	23.45	-9.80, 83.34	

N = 314 (167 women)

**Table 1B: Study 2 Moral Credentialing**

Predictor	Estimate	<i>SE</i>	<i>t</i>	<i>p</i>
Moral Credentialing (Mediator Variable Model)				
Constant	3.39	.18	19.00	<.001
Online activism	.15	.26	.58	.561
Gender	-.59	.27	-2.16	.032
Gender x Activism	1.26	.39	3.27	.001
Subsequent action (Dependent variable model)				
Constant	266.29	91.92	2.90	.004
Moral Cred. (MC)	-13.04	24.35	-.54	.593
Online activism	46.14	48.83	.95	.346
Gender	12.55	130.84	.10	.92
Gender x MC	11.74	35.04	.34	.738
Conditional indirect effects at gender = 0 and 1				
Gender	Estimate	<i>SE</i>	95% CI	
Overall	-4.93	10.78	-28.21, 15.67	
0 (Men)	-1.94	5.93	-15.21, 9.87	
1 (Women)	-1.82	32.20	-72.49, 55.11	
Index of Moderated Mediation				
	Index	<i>SE</i>	95% CI	
	.11	32.29	-70.38, 57.04	

N = 178 (78 women)

**Table 1C: Study 3 Moral Credentialing**

Predictor	Estimate	<i>SE</i>	<i>t</i>	<i>p</i>
Moral Credentialing (Mediator Variable Model)				
Constant	3.13	.15	20.86	<.001
Online activism	.71	.21	3.39	<.001
Gender	-.12	.21	-.54	.587
Gender x Activism	.30	.30	1.03	.304
Subsequent action (Dependent variable model)				
Constant	249.50	49.01	5.09	<.001
Moral Cred. (MC)	-17.72	13.49	-1.31	.190
Online activism	15.65	24.47	.64	.523
Gender	-68.69	65.08	-1.06	.292
Gender x MC	25.57	17.33	1.48	.141
Conditional indirect effects at gender = 0 and 1				
Gender	Estimate	<i>SE</i>	95% CI	
Overall	-2.43	10.26	-23.57, 17.42	
0 (Men)	-12.65	14.09	-43.75, 11.80	
1 (Women)	7.99	11.94	-14.82, 33.36	
Index of Moderated Mediation				
	Index	<i>SE</i>	95% CI	
	20.64	16.54	-10.10, 54.52	

N = 304 (154 women)

**Table 1D: Study 4 Moral Credentialing**

Predictor	Estimate	<i>SE</i>	<i>t</i>	<i>p</i>
Moral Credentialing (Mediator Variable Model)				
Constant	3.60	.11	34.04	<.001
Online activism	.09	.15	.58	.563
Gender	-.25	.15	-1.65	.099
Gender x Activism	.42	.21	1.96	.051
Subsequent action (Dependent variable model)				
Constant	142.13	35.72	3.98	<.001
Moral Cred. (MC)	-3.56	9.16	-.39	.698
Online activism	18.05	15.69	1.15	.250
Gender	141.59	48.86	2.90	.004
Gender x MC	-23.59	12.90	-1.84	.066
Conditional indirect effects at gender = 0 and 1				
Gender	Estimate	<i>SE</i>	95% CI	
Overall	-4.63	2.64	-10.83, -.62	
0 (Men)	-.31	1.24	-3.84, 1.30	
1 (Women)	-13.75	6.65	-28.76, -3.12	
Index of Moderated Mediation				
	Index	<i>SE</i>	95% CI	
	-13.45	6.78	-28.33, -2.14	

N = 509 (247 women)

### Chapter 3

#### Loss and Loyalty: Change in Political and Gender Identity among Clinton Supporters after the 2016 U.S. Presidential Election

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Published in: *Self & Identity*

Gomez, E. M., Young, D. M., Preston, A. G., Wilton, L. S., Gaither, S. E., & Kaiser, C. R. (2019). Loss and loyalty: Change in political and gender identity among Clinton supporters after the 2016 US presidential election. *Self and Identity*, 18(2), 103-125.

### **Abstract**

How do voters' political identities change following their candidate's defeat? A longitudinal, within-subjects design examined two independent samples (university students and adults on Mechanical Turk) before and after the 2016 U.S. presidential election. After Hillary Clinton's defeat, those who reported voting for her increased their identification with Clinton. Additionally, women (in the university and MTurk sample) and men (in the MTurk sample) who were Clinton voters supported policies advocating for gender-equality even more after the election than beforehand. These results suggest supporters affirm their political identity following a threat such as the defeat of their candidate during a high-stakes election. The discussion considers the implications of these findings within the context of the increasingly polarized US electorate.

## Loss and Loyalty: Change in Political and Gender Identity among Clinton Supporters after the 2016 U.S. Presidential Election

Hillary Clinton supporters, bright with optimism and eager to celebrate the first U.S. female president, assembled at Clinton's official election night party in Manhattan. The majority of pre-election polls indicated a Clinton victory was imminent (Katz, 2016). But as the results trickled in, excitement turned into apprehension. With the race too close to call, Clinton's campaign manager encouraged people to go home, but news footage betrayed evanescent hope as supporters left visibly shaken with tears of heartbreak instead of triumph. A few moments later, Clinton officially conceded the race to Donald Trump.

How do people cope when their candidate loses an election? Political identity (how people align the self with political parties, politicians, and platforms) plays an important role in self-conceptions, particularly during contentious election cycles. Subsequently, when one's candidate loses an election, this is experienced as a self-relevant threat (Greene, 1999; 2004; Huddy, 2001). Social identity theory (SIT; Tajfel & Turner, 1979; Abrams & Hogg, 1988) identifies two possible coping approaches people employ when their identities are threatened; affirming their identity by expressing increased identification with the group or distancing from their identity by expressing decreased identification with the group (Branscombe, Schmitt, & Harvey, 1999; Ethier & Deaux, 1994). The present study investigates whether Clinton supporters did the former or the latter by examining supporters' change in political identity after the election. Specifically, we explore two manifestations of political identity: explicit identification with Clinton and liberal ideology, and support for gender equality related policies and ideologies (e.g., equal pay for women) endorsed by Clinton and her campaign.

### **Political Identity as a Social Identity**

SIT (Tajfel & Turner, 1979; Abrams & Hogg, 1988) provides a relevant framework for understanding individuals' alignment of the self with a political identity. According to SIT, group memberships become central parts of self-definitions, and as a consequence, people are motivated to protect, bolster, and take pride in those groups (Tajfel, 1979). Political scientists and psychologists have conceptualized political identities as social identities, and have shown how political identity operates similarly to other social identities (Greene, 1999; Greene, 2004). For example, political identification fosters in-group favoritism (Green, 2004; Jost, Nam, Amodio, & Van Bavel, 2014; Munro, Zirpoli, Schuman, & Taulbee, 2013) and is related to self-esteem (Jost, Nam, Amodio, & Van Bavel, 2014). When political identity is salient, attitudes towards partisan issues become stronger (Dancey & Goren, 2010; Unsworth & Fielding, 2014). Additionally, political identities can motivate cognition by leading people to maintain pre-existing beliefs by discounting contradictory evidence (Cohen, 2003; Jost, et al., 2014; Jost & Amodio, 2012; Taber & Lodge, 2006).

### **Coping with Threats to Social Identities**

A candidate's defeat, then, can be considered a threat to their voters' social identity. Previous literature has identified a variety of coping mechanisms in which members of a group can respond to identity threats (Ellemers, Spears, & Doosje, 2002). One way people respond to identity threats is by modulating the extent to which they identify with the group, where increasing group identification affirms the identity and decreasing group identification distances from the identity (Branscombe, Schmitt, & Harvey, 1999; Ellemers, Spears, & Doosje, 2002; Ethier & Deaux, 1994). Here, we investigate how Clinton supporters coped with the threat of Clinton's electoral loss in terms of group identification, in which Clinton supporters could have

responded by psychologically distancing themselves from the group (decreasing in-group identification) or affirming the group (increasing in-group identification).

**Distancing from identity to cope with threat.** One way people might protect the self from a threat to their political identity is by decreasing their identification with the identity associated with the loss. By distancing from an identity under threat, one can preserve their self-esteem (Cialdini et al., 1976; Ellemers, Spears, & Doosje, 2002). For example, in the domain of sports, people are less willing to associate themselves with their team (e.g., willingness to be photographed with the team or wear team apparel the day after a victory) after a loss than a win—an effect known as “cutting off reflected failure” (CORF; Bizman & Yinon, 2002; Cialdini et al., 1976). CORFing also occurs in the realm of politics. Field studies in Belgium and the U.S. found that people whose political candidate lost an election were quicker to take down yard and window political signs compared to those whose candidate won (Boen et al., 2002; Miller, 2009). Attitudes towards the candidate have also shown evidence of CORFing, with participants tending to view their candidate less warmly after losing an election than prior to the election (Miller, 2009). Sigelman (1986) speculated that CORFing might be most likely to occur when the defeat is highly salient and unexpected—two relevant characteristics of Clinton’s defeat. Thus, previous literature suggests that Clinton supporters in the 2016 presidential election might distance themselves from their political identity in the face of Clinton’s defeat by decreasing their self-reported identification with Clinton and the broader ideologies associated with her candidacy.

**Affirming identity to cope with threat.** Alternatively, people may cope with threat by increasing their identification with the group. This affirmation of identity under threat can provide social support with the group and a sense of how to act going forward (Ellemers, Spears,

& Doosje, 2002). Thus, people might increase the association between the self and their explicit political identity in the face of an election loss.

Previous research has found that people may also respond to identity threats by bolstering their support for attitudes and beliefs linked with their group identity (Branscombe, Schmitt, & Harvey, 1999; Ellemers, Spears, & Doosje, 2002; Ledgerwood & Chaiken, 2007). For example, workers who were highly identified with their union were more likely to engage in collective action on behalf of their group when the status of their group was threatened (Veenstra & Haslam, 2000). Similarly, when gay men faced a group-level threat, they increased their identification with the gay rights movement (Simon et al., 1998). In addition to increasing explicit levels of identification, people may also strengthen their political identity in response to Clinton's defeat by increasing their endorsement of attitudes and ideologies represented by Clinton's campaign. In the context of the 2016 election cycle, Clinton ran an explicitly pro-women platform, advocating for policies aiming to reduce gender inequality and highlighting the need for future gender progress such as breaking the "highest" glass ceiling (Hillary for America, 2016). These beliefs were also manifested physically, in her choice to wear an all-white suit while accepting the Democratic Party's nomination, an act symbolizing the suffragette movement and women's rights (Friedman, 2016). Consequently, supporters may affirm their political identity following Clinton's loss by increasing their support for gender equality.

Thus, the previous literature also supports an alternative to psychological distancing as a coping measure in response to identity threat. It is possible that after a Clinton loss, her supporters may show an increase in identification for her as a candidate and also more strongly endorse a pro-women platform. Given the rising importance of political identity (Bartels, 2000), this affirmation of identity possibility may be more likely as previous research has shown that

affirmation (over distancing) from identities under threat are more likely among those who are deeply committed to the identity (Wann & Branscombe, 1990).

### **Overview of Research**

The present research investigates how Clinton supporters responded to the psychological threat to their political identities as a result of her defeat in the 2016 Presidential Election. More specifically, we examine whether Clinton supporters affirm or distance themselves from their political identities after Clinton's defeat in two ways. First, we assess explicit identification with Clinton and liberal ideology. Second, we assess support for gender equality policies and ideologies represented by Clinton's campaign. If Clinton voters distance themselves in response to the identity threat of her loss, we would expect to see less identification with Clinton, liberal ideology, and gender-related policies. However, if Clinton voters affirm their identities, we would expect to see an increase in identification with these concepts. We conducted two separate studies, one with university students and one with adults on Mechanical Turk (MTurk), as both a method of replication and generalizability to capture a historical moment and as a way to study different segments of the electorate.

### **Method**

In line with national polls (Katz, 2016), we anticipated a Clinton victory, and our pre-registrations (university sample: <https://aspredicted.org/blind.php/?x=em9ns4>; MTurk sample: <http://aspredicted.org/blind.php/?x=49qf8q>) and study design reflect that expectation. In light of the actual election outcome, the exploratory analyses we present here diverge considerably from our initial plan. Our initial goal was to extend upon previous literature that found people overestimated racial progress following President Obama's victory in 2008 and 2012 (Gaither, Wilton, & Young, 2014; Kaiser, Drury, Spalding, Cheryan, O'Brien, 2009). We anticipated

voters might similarly overestimate gender progress in the case of a Clinton victory. Following Trump's victory, we reassessed our possibilities and drew upon Social identity theory to examine the Clinton voters in an exploratory fashion, as mentioned in our pre-registration in case of a Trump victory. Thus, despite the reality constraints that prevented our initial plans from materializing, we nonetheless derived an ecologically valid and important question that could be addressed with the present data.

### **Participants**

Two distinct samples were independently recruited and assessed. The final inclusion criteria for both samples were such that participants must have completed both pre- and post-election surveys, passed an attention check, been born in the United States, reported voting for either Clinton or Trump in the 2016 presidential election (assessed at time 2), and identified as either "man" or "woman," with the later criteria allowing for examination of potential gender differences. Because our measures were designed for a Clinton victory, Trump supporters were analyzed as a control in which we did not anticipate any change in political identification with Clinton after the election (we did not ask about identification with Trump, a social identity that might have been more relevant for his supporters).

**University sample.** One sample was comprised of university undergraduates, who were offered course credit as compensation (final  $N = 191$ ;  $M_{\text{age}} = 19.22$ ,  $SD = 3.23$ ; 148 women, 43 men; racial/ethnic identity: 88 White, 62 Asian, 5 Latino, 7 Black, and 29 multiracial).

**MTurk sample.** A second sample of participants was recruited using the online crowdsourcing service Amazon Mechanical Turk (final  $N = 236$ ;  $M_{\text{age}} = 36.28$ ,  $SD = 11.97$ ; 130 women, 106 men; check-all that apply racial/ethnic identity: 150 White, 49 Asian, 9 Latino, 12

Black, 2 Native American, 14 multiracial). Turk Prime was used to recruit the same participants for pre- and post-election measurement.

### **Procedure**

Participants from both samples each completed two nearly identical online surveys: one approximately five weeks before the 2016 Election Day (October 3-7), and another during the week after Election Day (November 14-18). Conservative power analysis based on previous research (Gaither, Wilton, & Young, 2014), and in line with pre-registered predictions, suggested a sample size between 200 and 386 to detect a small effect with 80% power. Due to an expected high (~40%) attrition and exclusion rate, we oversampled at the first survey (T1).

**University sample.** The pre-election survey was administered to the university sample as part of a department-wide pre-screening survey, which was assessed at the beginning of the quarter (total prescreening  $N = 935$ ) between October 3-10. These screening survey participants were subsequently contacted and invited to take the post-election survey for additional course credit from November 13-23, 2016. Because of a limited departmental allotment of subject hours, only 800 slots were available for the second assessment (on a first-come, first-serve basis) resulting in 503 participants completing both assessments. Of these, 173 were not eligible for the study for not being born in the U.S., a criterion we set in our pre-registrations because our university has a high number of international students who may not be familiar with American politics. 7 participants were excluded for failing an attention check (“For this question, please answer ‘Strongly agree’”). In line with the political identity as a social identity-based approach we took in our exploratory analyses, we only analyzed participants who reported actually voting in the election. Thus, 84 were excluded for not voting, 18 for reporting voting for another candidate besides Clinton or Trump, and 3 for not providing this information because it was

unclear what the political identities of these individuals were. Three were excluded for not identifying as men or women as we planned to test for gender interactions. Lastly, only participants who reported voting for Clinton were included since there were not enough Trump voters in this sample to analyze ( $n = 24$ ), leaving a final sample of  $N = 191$ . Participants who completed both T1 and T2 did not significantly differ from participants who only completed T1 on all dependent variables, all  $ps > .11$ .

**MTurk sample.** The pre-election survey was opened to MTurk users between October 25-November 7, 2016, and 434 completed the first survey and passed the attention check. Following the study eligibility criteria in our pre-registrations and exclusion practices described above for the University sample, we excluded 57 participants who indicated they had not been born in the US, five who were not eligible to vote, and five for not identifying as gender-binary men or women (to facilitate gender-based analysis, see Supplement). The 367 participants from T1 who met inclusion criteria were subsequently contacted and invited to complete the post-election survey for additional compensation between November 14-24, 2016. Fifty-seven eligible participants did not complete T2 (non-completers), two did not pass an attention check “For this question, please answer Strongly agree,” 41 did not vote, and 31 voted for candidates other than Clinton or Trump, ending in a final sample of 236 participants (completers; Clinton voters = 141, Trump voters = 95). There were no differences on all study dependent variables between completers and non-completers (all  $ps > .19$ ).

### Measures

Most items were presented in identical form across time points, with the exception of a few items relevant to specific pre- or post-election insights (e.g., initial candidate preference versus actual voting behavior), which are specifically designated below. Unless otherwise noted,

all measures were rated on scales with endpoints of 1 (Strongly disagree) to 7 (Strongly agree). Additional measures that were included in the study are described and analyzed in the Supplementary Materials.

### **Political Identification**

The following two measures capture the participants' political identification in two ways: identification with Clinton and their self-reported political ideology.

**Identification with Hillary Clinton.** Three items were used to measure participants' identification with Hillary Clinton. Participants were asked the extent to which they felt "a bond with," "solidarity with," and "committed to" Clinton, in the style of previous studies on Basking In Reflected Glory (Cialdini et al., 1976) and in-group identification (e.g. Leach et al., 2008) ( $\alpha_{\text{Uni}, T1} = 0.90$ ,  $\alpha_{\text{Uni}, T2} = 0.91$ ;  $\alpha_{\text{MTurk}, T1} = 0.97$ ,  $\alpha_{\text{MTurk}, T2} = 0.98$ ).

**Political ideology.** Participants rated their political views on a 7-point ideological scale ranging from 1 (Extremely liberal) to 7 (Extremely conservative) with a midpoint at 4 (Moderate) as a way to measure participants' political identity.

### **Beliefs about Gender Equality**

These measures capture political identity via support for policies and beliefs about gender equality represented by Clinton's campaign. Thus, affirming one's political identity could be materialize as an increase in support for these policies associated with Clinton's campaign.

**Gender equality progress.** This scale assessed participants' beliefs about the extent to which equality for women has advanced over the past few decades. According to Clinton's platform, gender equality has not yet been realized, and her ultimate defeat might stand to highlight this lack of progress. The scale consisted of three items: "Women in the U.S. have gained many rights and opportunities over the last 50 years," "Life for women in the U.S. is not

much better today than it was 50 years ago,” [Reverse coded] and “Since the height of the Women’s Suffrage Movement in the 1920s, great progress has been made toward gender equality in the United States” ( $\alpha_{\text{Uni}, T1} = 0.64$ ,  $\alpha_{\text{Uni}, T2} = 0.65$ ;  $\alpha_{\text{MTurk}, T1} = 0.73$ ,  $\alpha_{\text{MTurk}, T2} = 0.77$ ).

**Future gender progress.** This scale assessed participants’ estimation of the need for future gender equality progress, or the difference between current conditions and ideal levels of rights, opportunities, and quality of life for women. In line with Clinton’s platform, her supporters should believe there is a need for future progress, and her defeat might serve to make this belief system more compelling. The scale consisted of three items: “The United States has further to go in order to achieve gender equality,” “There is little need for further efforts to achieve gender equality,” and “When I think about gender equality progress, I think about how much improvement the U.S. has left to make” ( $\alpha_{\text{Uni}, T1} = 0.80$ ,  $\alpha_{\text{Uni}, T2} = 0.70$ ;  $\alpha_{\text{MTurk}, T1} = 0.82$ ,  $\alpha_{\text{MTurk}, T2} = 0.86$ ).

**Policy support.** Here, participants’ support for legislative and business policies which aim to remedy existing gender inequality was assessed. These policies were part of Clinton’s platform, and her defeat might further enhance the significance of these policies. The scale consisted of four items: “Decreasing the wage gap between men and women should be a top national priority,” “Affirmative action programs to advance women are essential today,” “Employers should be required to offer paid leave to mothers of new children,” and “Efforts should be made to promote and secure women’s access to healthcare” ( $\alpha_{\text{Uni}, T1} = 0.73$ ,  $\alpha_{\text{Uni}, T2} = 0.71$ ;  $\alpha_{\text{MTurk}, T1} = 0.81$ ,  $\alpha_{\text{MTurk}, T2} = 0.82$ ).

**Perceived gender system permeability.** A modified form of Levin, Sidanius, Rabinowitz, & Federico’s (1998) scale addressed perceptions of the ease with which women experience societal upward mobility in America. Clinton’s campaign emphasized the barriers

women face in upward mobility, and as such, these beliefs might become more salient among her supporters following the election. Three items were included: “America is an open society where individuals of any gender can achieve higher status,” “Advancement in American society is possible for individuals of any gender,” and “Individual women face significant challenges achieving higher status” ( $\alpha_{\text{Uni}, T1} = 0.79$ ,  $\alpha_{\text{Uni}, T2} = 0.74$ ;  $\alpha_{\text{MTurk}, T1} = 0.52$ ,  $\alpha_{\text{MTurk}, T2} = 0.59$ ).

### **Election Measures**

At Time 1, participants indicated whether they supported Clinton, Trump, another candidate, or if they had no preference. At Time 2, participants were asked whether or not they voted in the election, and if they did, for whom they voted.

### **Data Analysis Plan**

The two samples (UW students and Mturk adults) were analyzed independently. All analyses below use repeated measures ANOVA to test for within-subject differences between Time 1 (T1) and Time 2 (T2). Time X Vote (Clinton vs. Trump) interactions were tested only in the Mturk sample due to participants’ sufficient political diversity (Clinton voters = 141; Trump voters = 95). Since there were not enough Trump voters in the University sample ( $n = 24$ ), only Clinton voters were included in this sample. Simple effect analyses were used in significant interactions ( $p < 0.05$ ), and the direction of means were discussed in the case of marginally significant interactions ( $p < .1$ ) but not formally analyzed. Generally, participant gender did not significantly interact with other factors (time, vote) so is included in main analyses only when it was significant (see Supplementary Materials for additional analyses).

## **Results**

See Tables 1 and 2 for descriptive statistics and correlations.

## Political Identification

**University sample.** Affirmation of one's political identity would manifest as an increase in identification with Clinton and liberal political ideology. Consistent with this possibility, there was a significant main effect of time  $F(1, 189) = 36.93, p < .001, \eta^2_p = .16$ . While this was qualified by a significant Time X Gender interaction for identification with Clinton,  $F(1, 189) = 4.77, p = .030, \eta^2_p = .025$ , simple effect analyses revealed that both male Clinton supporters,  $F(1, 189) = 4.89, p = .028, \eta^2_p = .025, 95\% \text{ CI } [0.04, 0.72]$ , and female Clinton supporters  $F(1, 189) = 75.80, p < .001, \eta^2_p = .286, 95\% \text{ CI } [.62, 0.99]$  increased identification with Clinton. There was not a main effect of gender,  $F(1, 189) = 3.01, p = .084, \eta^2_p = .016$ . Consistent with the identity affirmation coping strategy, Clinton supporters (both men and women, but women more so) increased their identification with her.

Also consistent with an identity affirmation coping response, participants reported a significant increase in liberal ideology following the election,  $F(1, 190) = 16.26, p < .001, \eta^2_p = .079, 95\% \text{ CI } [-0.30, -0.10]$ .

**MTurk sample.** Similar findings were found in the MTurk sample, and having enough Trump supporters in this sample allowed to test whether identification with Clinton was moderated by how people voted (Clinton or Trump) where Trump voters were conceptualized as a control where no movement in identification with Clinton was expected. A significant Time X Vote interaction,  $F(1, 234) = 10.09, p = .002, \eta^2_p = .041$ , modified main effects of Vote (Clinton or Trump voting behavior),  $F(1, 234) = 346.26, p < .001, \eta^2_p = .597$ , and Time  $F(1, 234) = 8.63, p = .004, \eta^2_p = .036$ , on identification with Clinton. Simple effect analyses revealed that while Clinton voters increased their identification with Clinton after their election,  $F(1, 234) = 23.21, p < .001, \eta^2_p = .090, 95\% \text{ CI } [0.21, 0.51]$ , Trump voters did not  $F(1, 234) = .02, p = .877, \eta^2_p <$

.001, 95% CI [-0.19, 0.17]. Thus, Clinton supporters, but not Trump supporters, significantly increased their explicit identification with Clinton after the election, demonstrating an identity affirmation coping response.

There was a significant Time X Vote interaction on political ideology,  $F(1, 234) = 5.55, p = .019, \eta^2_p = .023$ , that qualified a main effect of Vote,  $F(1, 234) = 271.62, p < .001, \eta^2_p = .537$ . There was no main effect of Time on political ideology,  $F(1, 234) = .86, p = .356, \eta^2_p = .004$ . Simple effects revealed that Trump voters increased in conservative ideology,  $F(1, 234) = 4.50, p = .035, \eta^2_p = .019$ , 95% CI [0.13, 0.35], and there was no significant change in political ideology for Clinton voters after the election,  $F(1, 234) = 1.27, p = .261, \eta^2_p = .005$ , 95% CI [-0.21, 0.06], though the pattern of means reflected increased liberal identity, echoing the findings in the University sample where Clinton supporters increased in their liberal ideology.

### **Beliefs about Gender Equality**

**University sample.** The second way we tested whether Clinton supporters affirmed their political identity or distanced themselves from their political identity is by measuring endorsement of policies represented by Clinton and her campaign. A significant Time X Gender interaction for policy support,  $F(1, 189) = 4.76, p = .030, \eta^2_p = .025$ , qualified a main effect for gender,  $F(1, 189) = 22.92, p < .001, \eta^2_p = .108$ . There was no main effect for time,  $F(1, 189) = 1.21, p < .274, \eta^2_p = .006$ . Simple effect analyses reveal that female Clinton supporters increased support for policies that address gender inequality,  $F(1, 189) = 11.95, p < .001, \eta^2_p = .059$ , 95% CI [0.09, 0.33], while male Clinton supporters did not,  $F(1, 189) = 0.38, p = .539, \eta^2_p = .002$ , 95% CI [-0.15, 0.29]. Thus, female Clinton supporters affirmed their political identity by increasing their support for policies represented by Clinton's campaign.

However, there were no significant changes in support for more abstract political ideals represented by Clinton and her campaign. There was no significant change in perceptions of gender progress,  $F(1, 190) = 1.90, p = .170, \eta^2_p = .010, 95\% \text{ CI } [-0.19, 0.03]$ , or need for future gender progress,  $F(1, 190) = .108, p = .743, \eta^2_p = .001, 95\% \text{ CI } [-0.10, 0.13]$ . There was also no significant change in gender system permeability,  $F(1, 189) = 1.015, p = .315, \eta^2_p = .005, 95\% \text{ CI } [-0.07, 0.21]$  (1 participant was excluded for not completing this measure). Thus, there was weak support for the notion that Clinton supporters would affirm gender related ideologies associated with her political platform, as that support occurred on just one of four measures in the university sample and only for women.

**Mturk sample.** A significant Time X Vote interaction for support in policies that address gender inequality,  $F(1, 234) = 8.32, p = .004, \eta^2_p = .034$ , qualified the main effect for Vote,  $F(1, 234) = 106.59, p < .001, \eta^2_p = .313$ . Simple effect analyses reveal that Clinton voters increased support for these policies,  $F(1, 234) = 5.36, p = .022, \eta^2_p = .022, 95\% \text{ CI } [0.20, 0.25]$ , while Trump voters marginally decreased their support for these policies,  $F(1, 234) = 3.35, p = .068, \eta^2_p = .014, 95\% \text{ CI } [-0.27, 0.01]$ . No main effect of Time was present,  $F(1, 234) = .003, p = .958, \eta^2_p < .001$ . Thus, like with the university women, identity affirmation was observed in the Mturk sample where Clinton supporters (but not Trump supporters) increased support for policies represented by Clinton and her campaign. Of importance, this effect was observed among both men and women, whereas in the university sample, it was limited to women.

Similar to the university sample, the evidence was more mixed on support for gender equality related platforms. A marginally significant Time X Vote interaction for gender progress also emerged,  $F(1, 234) = 2.96, p = .087, \eta^2_p = .012$ ; with Clinton voters decreasing their perceptions of gender progress, and Trump voters increasing their perceptions of gender progress

(see Table 2 for means). No main effects emerged for Time,  $F(1, 234) = .008, p = .927, \eta^2_p < .001$ , though there was a significant effect of Vote,  $F(1, 234) = 11.43, p = .001, \eta^2_p = .047$ . Thus, Clinton supporters marginally decreased their perception of current gender progress, suggesting a pattern of identity affirmation coping where Clinton supporters believed less progress on gender equality had been made after Clinton's defeat.

A significant Time X Vote interaction on need for future gender progress,  $F(1, 234) = 8.61, p = .004, \eta^2_p = .035$ , modified a significant main effect of Vote  $F(1, 234) = 118.28, p < .001, \eta^2_p = .336$ . Simple effect analyses reveal that Clinton voters expressed a marginal increase in the need for future progress,  $F(1, 234) = 3.40, p = .066, \eta^2_p = .014, 95\% \text{ CI } [-0.01, 0.31]$ , while Trump voters significantly decreased in their endorsement,  $F(1, 234) = 5.21, p = .023, \eta^2_p = .022, 95\% \text{ CI } [-0.43, -0.03]$ . There was no main effect of time,  $F(1, 234) = .35, p = .553, \eta^2_p = .002$ . Thus, Clinton supporters again demonstrated evidence of an identity affirmation coping response by marginally increasing their beliefs on a need for future gender progress after Clinton's defeat.

For gender system permeability, there was again a main effect of Vote,  $F(1, 234) = 39.21, p < .001, \eta^2_p = .144$ , and no main effect of Time,  $F(1, 234) = .38, p = .540, \eta^2_p = .002$ . There was a marginal interaction effect between Vote X Time,  $F(1, 234) = 3.08, p = .081, \eta^2_p = .013$ , with Clinton voters decreasing their perceptions of gender system permeability, and Trump voters increasing their perceptions of gender system permeability (see Table 2 for means).

Thus, there was some, albeit limited, support for the hypothesis that Clinton supporters would affirm their political identification with Clinton by increasing their support for beliefs associated with the Clinton platform.

## **Additional Results**

In the supplemental materials, we describe analyses on additional variables of secondary interest to the questions explored in the main text (e.g., gender identification, perceived sexism, and Social Dominance Orientation). Some of these measures were intended to assess psychological processes stemming from a Clinton victory, and others were added to the university sample following the unanticipated Trump victory. See supplemental materials for more information.

## **Discussion**

A longitudinal, within-subjects design across two different samples (university students and adults on MTurk) examined how Clinton voters' political identities changed after the 2016 Presidential election. Overall, these data suggest Clinton supporters generally affirmed their political identities after the election. There was strong evidence that Clinton supporters in both samples showed a significant increase in explicit identification with Clinton after the election (large effect sizes across both samples). Further, the university students showed an increase in their liberal identities, whereas the MTurk Clinton supporters showed the same, but non-significant, pattern. The evidence for changes in support for gender-related ideologies and policies associated with Clinton's platform was more mixed. Specifically, while female Clinton supporters in the university sample and male and female Clinton supporters in the MTurk sample showed an increase in support for policies that address gender inequality (e.g., decreasing the wage gap between men and women should be a top national priority), only the MTurk Clinton supporters increased in support for future gender progress. Neither sample significantly changed their beliefs on the attainment of gender progress or perceived gender system permeability, though it is important to note these measures did not have strong reliability. Overall, these results

suggest that Clinton voters increased their association of the self with Clinton directly via self-report identification measures and to some degree, indirectly via support for policies associated with Clinton. These findings are consistent with the affirming one's identity to cope with the social identity threat perspective, and none of the findings support the distancing perspective.

These findings of increased identification with Clinton among Clinton supporters in both samples, increased support for liberal ideologies among university Clinton voters, and support for gender-equality policies among university women and MTurk men and women Clinton supporters parallel the unprecedented outpouring of collective action after the election. For example, over a million women and men across the U.S. marched in solidarity with the Women's March on Washington along with dozens of other similar demonstrations across the U.S. (Weaver, Rennison, Whipp, & Bullock, 2017). Similarly, liberal organizations such as Planned Parenthood and the ACLU saw a significant spike in donations after the election and a surge in women interested in running for political office (Chokshi, 2016; Gajanan, 2016). Thus, the evidence that Clinton supporters increased their identification with Clinton and some values associated with her campaign may be an example of problem-based coping, whereby the identity threat galvanized her supporters to seek out ways to affirm the group identity (Ellemers, Spears, & Doosje, 2002; Folkman & Lazarus, 1980). Affirming the identity to cope with threat, then, may just be a first step of a larger plan to address the threat.

We offer a few possible explanations for these findings. First, Clinton voters may have experienced a threat to an important group identity. Though pre-election approval ratings for both Trump and Clinton were historically low (ABC News/Washington Post, 2016), the implications of Trump's ultimate victory may have buoyed solidarity with Clinton. The increase in identification effect could also stem from reactance toward Trump and his policies, whereby

increasing the association of the self with Clinton effectively dissociates the self from Trump (see Ledgerwood & Chaiken, 2007). Further, the increasing political polarization in the American electorate (Abramowitz, 2015; Jacobson, 2013) may have served to enhance this pattern, as it made the opposing political party more of a perceived enemy than in years past. These possibilities are all consistent with tenets of social identity theory (see Ellemers et al., 2002).

Another surprising finding from these data is the gender of participants generally did not predict participants' change in beliefs after the election (see Supplemental Materials for more details). This finding is consistent with political science research illustrating how political identity can be superordinate to other social identities like gender (e.g., Huddy, 2013; Transue, 2007). It may also reflect underlying relationships between voter gender and voting preferences, as suggested by exit polls indicating a simple majority of White women voted for Trump over Clinton (CNN, 2016).

Though this study captured a unique moment in political history, the nature of this study also includes limitations. In line with an anticipated Clinton victory, we designed this study with a focus on liberal policies and the psychological consequences of electing the first female U.S. president. Therefore, as we suggested in our pre-registration in the case of a Trump victory, the data were analyzed in an exploratory fashion and are best interpreted as suggestive rather than confirmatory. Also, these data do not speak as much to Trump supporters—for, example, did they also change political identities in relation to Trump post-election? The finding that MTurk Trump voters became more conservative following the election is consistent with the notion that these voters were perhaps basking in reflected glory (Boen et al., 2002; Miller, 2009). Another limitation is the lack of racial diversity in both samples, which are largely White and

disproportionately Asian-American (relative to the US overall, but representative of the university where the study was conducted). While exit polls suggested gender did not predict voting behavior as much as expected, race certainly did as all non-White groups decidedly voted for Clinton over Trump (CNN, 2016). Thus, it is important to not generalize these findings across the broader electorate of Clinton supporters. Though initial sample sizes were large with the pre-registered consideration of strict inclusion criteria and expected high attrition rates due to survey collection, the attrition rates are still a limitation. No significant differences in any variables between those who completed both time points compared to those who only completed T1 and the relative consistency in effects across both samples allays concerns about any selection effect to some extent.

In sum, the 2016 Presidential Election, with its contentious candidates, increasing partisan polarity, and surprising results, serves as an excellent testing ground for the role of coping with a threat to a highly salient and important identity—political identity. The present research provides insight into longitudinal, within-subject change among two different segments of the electorate before and after the election. In a high-stakes election, supporters of a defeated candidate may actually increase in identity and beliefs relating to that candidate, which are at odds with findings that predict distancing oneself in the face of identity threat. Coupled with evidence that supporters of a winning candidate also increased their political ideology, these findings also lend credence to the existence of an increasingly polarized electorate after the election, and raise concerns about the possibility of achieving bipartisan compromise among a divided nation. Finally, the results provide a glimpse into the dynamic taxonomy of social identities, such as the potential for political identity to subsume gender and personal identity. Future research should further investigate how these changes in gender and political

identification may continue to shift and fluctuate over time in an increasingly volatile political climate.

## Supplemental Materials

### Gender Analyses

Here we report gender analyses of the primary measures discussed in the main text of the paper. Significant gender interactions are reported in the main text of the paper.

#### Identification with Hillary Clinton

**University sample.** Full analyses reported in the main text.

**MTurk sample.** In keeping with the main analyses, a significant Time X Vote interaction,  $F(1, 232) = 9.04, p = .003, \eta^2_p = .037$ , modified main effects of Vote (Clinton or Trump voting behavior),  $F(1, 232) = 339.76, p < .001, \eta^2_p = .594$ , and Time  $F(1, 232) = 7.91, p = .005, \eta^2_p = .033$ , on identification with Clinton. There were no other significant main effects, Gender  $F(1, 232) = 2.846, p = .093, \eta^2_p = .012$ , or significant interactions, Time X Vote X Gender  $F(1, 232) = 2.695, p = .102, \eta^2_p = .011$ , Time X Gender  $F(1, 232) = 0.05, p = .827, \eta^2_p < .001$ , Vote X Gender  $F(1, 232) = 0.98, p = .323, \eta^2_p = .004$ .

#### Political ideology

**University sample.** The Time X Gender interaction for political ideology was not significant,  $F(1, 189) = 0.003, p = .957, \eta^2_p < .001$ . There was no main effect for gender,  $F(1, 189) = .68, p = .410, \eta^2_p = .004$ . There was a significant main effect for time,  $F(1, 189) = 11.49, p < .001, \eta^2_p = .057$ .

**MTurk sample.** In keeping with the main analyses, a significant Time X Vote interaction,  $F(1, 232) = 5.93, p = .016, \eta^2_p = .025$ , modified main effects of Vote (Clinton or Trump voting behavior),  $F(1, 232) = 264.79, p < .001, \eta^2_p = .533$ , on political identity. There were no other significant main effects, Time  $F(1, 232) = .71, p = .399, \eta^2_p = .003$ , Gender  $F(1, 232) = 0.005, p = .943, \eta^2_p < .001$ , or significant interactions, Time X Vote X Gender  $F(1, 232) =$

.827,  $p = .364$ ,  $\eta^2_p = .004$ , Time X Gender  $F(1, 232) = 0.05$ ,  $p = .817$ ,  $\eta^2_p < .001$ , Vote X Gender  $F(1, 232) = 1.45$ ,  $p = .230$ ,  $\eta^2_p = .006$ .

### Policy support

**University sample.** Full analyses reported in the main text.

**MTurk sample.** In keeping with the main analyses, a significant Time X Vote interaction,  $F(1, 232) = 7.76$ ,  $p = .006$ ,  $\eta^2_p = .032$ , modified main effects of Vote (Clinton or Trump voting behavior),  $F(1, 232) = 106.56$ ,  $p < .001$ ,  $\eta^2_p = .315$ , on support for policies to address gender equality. There was also a main effect of gender,  $F(1, 232) = 13.94$ ,  $p < .001$ ,  $\eta^2_p = .057$ , such that women ( $M = 5.25$ ) supported these policies more than men ( $M = 4.77$ ). There was no main effect of Time  $F(1, 232) = .00$ ,  $p = .994$ ,  $\eta^2_p < .001$ , or other significant interactions, Time X Vote X Gender  $F(1, 232) = .48$ ,  $p = .490$ ,  $\eta^2_p = .002$ , Time X Gender  $F(1, 232) = 0.05$ ,  $p = .827$ ,  $\eta^2_p < .001$ , Vote X Gender  $F(1, 232) = .001$ ,  $p = .97$ ,  $\eta^2_p < .001$ .

### Gender equality progress

**University sample.** The Time X Gender interaction for gender equality progress was not significant,  $F(1, 188) = 0.004$ ,  $p = .953$ ,  $\eta^2_p < .001$ . There was a main effect for gender,  $F(1, 188) = 7.99$ ,  $p = .005$ ,  $\eta^2_p = .041$  where men reported there has been more gender equality progress than women. There was no main effect for time,  $F(1, 188) = 1.40$ ,  $p = .239$ ,  $\eta^2_p = .007$ .

**MTurk sample.** In keeping with the main analyses, a marginally significant Time X Vote interaction,  $F(1, 232) = 3.45$ ,  $p = .065$ ,  $\eta^2_p = .015$ , modified the main effect of Vote (Clinton or Trump voting behavior),  $F(1, 232) = 9.99$ ,  $p = .002$ ,  $\eta^2_p = .041$ , on perceptions of gender progress. There was an additional marginally significant Gender X Vote interaction,  $F(1, 232) = 2.95$ ,  $p = .087$ ,  $\eta^2_p = .013$ . There were no other significant main effects, Time  $F(1, 232) = .002$ ,  $p = .962$ ,  $\eta^2_p < .001$ , Gender  $F(1, 232) = 1.56$ ,  $p = .213$ ,  $\eta^2_p = .007$ , or significant

interactions, Time X Vote X Gender  $F(1, 232) = 1.03, p = .311, \eta^2_p = .004$ , Time X Gender  $F(1, 232) = 0.79, p = .374, \eta^2_p = .003$ .

### **Future gender progress**

**University sample.** The Time X Gender interaction for future gender progress was not significant,  $F(1, 189) = 0.367, p = .545, \eta^2_p = .002$ . There was no main effect for gender,  $F(1, 189) = 3.59, p = .060, \eta^2_p = .019$  or time,  $F(1, 189) = .003, p = .953, \eta^2_p < .001$ .

**MTurk sample.** In keeping with the main analyses, a significant Time X Vote interaction,  $F(1, 232) = 8.51, p = .004, \eta^2_p = .035$ , modified the main effect of Vote (Clinton or Trump voting behavior),  $F(1, 232) = 115.57, p < .001, \eta^2_p = .33$ , on need for future gender progress. There was an additional main effect of Gender  $F(1, 232) = 6.66, p = .01, \eta^2_p = .03$ , such that women ( $M = 4.93$ ) supported these policies more than men ( $M = 4.56$ ). There were no other significant main effects, Time  $F(1, 232) = .35, p = .56, \eta^2_p = .001$ , or significant interactions, Time X Vote X Gender  $F(1, 232) = 0.03, p = .87, \eta^2_p < .001$ , Gender X Vote interaction,  $F(1, 232) = 0.41, p = .52, \eta^2_p = .002$ , Time X Gender  $F(1, 232) = 0.01, p = .91, \eta^2_p < .001$ .

### **Perceived gender system permeability**

**University sample.** The Time X Gender interaction for perceived gender system permeability was not significant,  $F(1, 188) = 1.08, p = .299, \eta^2_p = .006$ . There was a main effect for gender,  $F(1, 188) = 6.77, p = .010, \eta^2_p = .035$ , where men believed there was greater gender system permeability than women. There was no significant effect for time,  $F(1, 188) = 1.99, p = .159, \eta^2_p = .006$ .

**MTurk sample.** In keeping with the main analyses, a marginally significant Time X Vote interaction,  $F(1, 232) = 2.72, p = .101, \eta^2_p = .012$ , modified the main effect of Vote

(Clinton or Trump voting behavior),  $F(1, 232) = 37.45, p < .001, \eta^2_p = .14$ , on perceptions of gender system permeability. There was an additional main effect of Gender  $F(1, 232) = 9.95, p = .002, \eta^2_p = .041$ , such that women ( $M = 4.06$ ) saw the system as less permeable than men ( $M = 4.36$ ). There were no other significant main effects, Time  $F(1, 232) = .46, p = .501, \eta^2_p = .002$ , or significant interactions, Time X Vote X Gender  $F(1, 232) = 0.997, p = .319, \eta^2_p = .004$ , Gender X Vote interaction,  $F(1, 232) = 0.30, p = .584, \eta^2_p = .001$ , Time X Gender  $F(1, 232) = 0.004, p = .949, \eta^2_p < .001$ .

### Additional Measures and Analyses

#### Centrality of Gender Identity

Items adapted from Luhtanen and Crocker's (1992) Collective Self-Esteem Scale measured the extent to which participants' gender was central to their self concept. This scale included four items, including "the gender group I belong to is an important reflection of who I am" ( $\alpha_{Uni, T1} = 0.80, \alpha_{Uni, T2} = 0.82; \alpha_{MTurk, T1} = 0.84, \alpha_{MTurk, T2} = 0.85$ ).

**University results.** Participants' gender identification significantly increased after the election,  $F(1, 189) = 4.73, p = .031, \eta^2_p = .024$ . The Time X Gender interaction was not significant,  $F(1, 189) = 0.233, p = .630, \eta^2_p = .001$ . There was a main effect for gender,  $F(1, 189) = 13.99, p < .001, \eta^2_p = .069$ , where women identified more with their gender than men.

**MTurk results.** A significant Time X Vote X Gender interaction,  $F(1, 232) = 13.04, p < .001, \eta^2_p = .053$  modified a significant Vote X Gender interaction,  $F(1, 232) = 7.41, p = .007, \eta^2_p = .031$ , and a main effect of Gender,  $F(1, 232) = 7.77, p = .006, \eta^2_p = .032$ . Simple effects analysis showed that men who voted for Trump increased their gender identification,  $F(1, 232) = 7.79, p = .006, \eta^2_p = .033, 95\% \text{ CI } [0.11, -0.65]$ , while men who voted for Clinton decreased their gender identification,  $F(1, 232) = 4.25, p = .040, \eta^2_p = .018, 95\% \text{ CI } [-0.48, -0.11]$ . For women,

those who voted for Trump did not change their gender identification,  $F(1, 232) = 0.15, p = .700, \eta^2_p = .001, 95\% \text{ CI } [-0.31, 0.21]$ , but those who voted for Clinton increased their gender identification,  $F(1, 232) = 4.30, p = .039, \eta^2_p = .018, 95\% \text{ CI } [0.01, 0.42]$ . There were no other main effects or significant interactions.

### Perceived Gender Discrimination

Participants reported the extent to which they believed they personally, and members of their gender group, were subject to gender-based discrimination (Levin, Sinclair, Veniegas, & Taylor, 2002). This was measured with four items: “I experience discrimination because of my gender,” “I personally have been a victim of gender discrimination,” “My gender group is discriminated against,” and “Discrimination against my gender group is a big problem today.” ( $\alpha_{\text{Uni}, T1} = 0.92, \alpha_{\text{Uni}, T2} = 0.91; \alpha_{\text{MTurk}, T1} = 0.93, \alpha_{\text{MTurk}, T2} = 0.95$ ).

**University results.** Participants’ perceived gender discrimination significantly increased after the election,  $F(1, 189) = 20.06, p < .001, \eta^2_p = .096$ . The Time X Gender interaction was not significant,  $F(1, 189) = 2.10, p = .149, \eta^2_p = .011$ . There was a main effect for gender,  $F(1, 189) = 161.41, p < .001, \eta^2_p = .461$ , where women reported greater perceived gender discrimination than men.

**MTurk results.** A significant Time X Vote X Gender interaction,  $F(1, 232) = 6.73, p = .010, \eta^2_p = .028$  modified a significant Vote X Gender interaction,  $F(1, 232) = 33.17, p < .001, \eta^2_p = .125$ , and a main effect of Gender,  $F(1, 232) = 78.68, p < .001, \eta^2_p = .253$ , on perceptions of discrimination against their gender. Simple effects analysis showed that for women who voted for Clinton,  $F(1, 232) = 7.94, p = .005, \eta^2_p = .033, 95\% \text{ CI } [0.09, 0.51]$  but not Trump,  $F(1, 232) = 1.87, p = .173, \eta^2_p = .008, 95\% \text{ CI } [-0.46, 0.08]$ , increased their perception of gender discrimination. Neither men who voted for Clinton,  $F(1, 232) = 0.12, p = .739, \eta^2_p < .001, 95\%$

CI [-0.29, 0.20], or Trump,  $F(1, 232) = 0.91, p = .341, \eta^2_p = .004$ , 95% CI [-0.15, 0.42], significantly changed their perceptions of discrimination against men. There were no other significant main effects or interactions.

### **Ambivalent Sexism Inventory (ASI)**

A subset of items from Glick and Fiske's (1996) ASI gauged participants' stereotyping attitudes toward women. The inventory in turn is comprised of two subscales measuring benevolent and hostile sexism, respectively, consisting here of four items each. The benevolent sexism scale included items such as "Women should be cherished and protected by men" ( $\alpha_{\text{Uni}, T1} = 0.81, \alpha_{\text{Uni}, T2} = 0.82; \alpha_{\text{MTurk}, T1} = 0.87, \alpha_{\text{MTurk}, T2} = 0.88$ ). The hostile sexism scale included items such as "Women exaggerate problems they have at work" ( $\alpha_{\text{Uni}, T1} = 0.82, \alpha_{\text{Uni}, T2} = 0.87; \alpha_{\text{MTurk}, T1} = 0.90, \alpha_{\text{MTurk}, T2} = 0.92$ ).

**University results.** Participants' benevolent sexism did not significantly change after the election,  $F(1, 189) = 0.004, p = .948, \eta^2_p < .001$ . The Time X Gender interaction was not significant,  $F(1, 189) = 0.061, p = .805, \eta^2_p < .001$ . There was a main effect for gender,  $F(1, 189) = 7.40, p = .007, \eta^2_p = .038$ , where men reported higher benevolent sexism. Participants' hostile sexism did not significantly change after the election,  $F(1, 189) = 0.441, p = .507, \eta^2_p = .002$ . The Time X Gender interaction was not significant,  $F(1, 189) = 0.002, p = .964, \eta^2_p < .001$ . There was a main effect for gender,  $F(1, 189) = 17.25, p < .001, \eta^2_p = .084$ , where men reported higher hostile sexism.

**MTurk results.** There were no significant interactions or main effects on benevolent sexism. For hostile sexism, a significant Time X Gender interaction,  $F(1, 232) = 5.47, p = .020, \eta^2_p = .023$ , modified a significant main effect of Gender,  $F(1, 232) = 18.96, p < .001, \eta^2_p = .076$ . Simple effects analysis demonstrates that women significantly decreased their endorsement of

hostile sexism,  $F(1, 232) = 7.24, p = .008, \eta^2_p = .030$ , while men did not,  $F(1, 232) = 0.49, p = .485, \eta^2_p = .002$ . There was an additional main effect of Vote,  $F(1, 232) = 91.53, p < .001, \eta^2_p = .283$ , such that those who voted for Trump endorsed more hostile sexism than those who voted for Clinton. There were no other significant main effects or interactions.

### **University Sample-only Measures & Analyses**

In light of the election outcome, we added these additional measures at Time 2 for the university sample because these measures were already part of the Time 1 department-wide pre-screening survey (administered by other researchers for other purposes). These measures were not part of the original pre-registration, and were added to explore additional psychological processes that may be associated with the surprising Trump victory. Specifically, given societal conversations about the role of racial resentment in the post-Obama era, we were curious as to whether racial attitudes shifted following Trump's rise to power. Given that Obama's rise to power was linked with reduced concerns about racism in society (Kaiser et al., 2009), we wondered whether Trump's victory might usher in increased concerns about racism's increasing relevance in society. We were restricted to examining measures that other researchers had included at the Time 1 pre-screening survey, so our flexibility was constrained to some extent. Nevertheless, the findings were fascinating, and these supplemental analyses provide a way to get these findings into the literature.

#### **Social Dominance Orientation (SDO)**

A short version of Ho et al.'s (2015) revised Social Dominance Orientation scale (SDO) measured participants' opposition to social inequality and their preference for group-based hierarchy. Eight items were included in the present version, including "Some groups of people are simply inferior to others" ( $\alpha_{Uni, T1} = 0.77, \alpha_{Uni, T2} = 0.79$ ).

**Result.** Clinton supporters' SDO significantly decreased after the election,  $F(1, 190) = 9.70, p = .002, \eta^2_p = .049, 95\% \text{ CI } [0.07, 0.31]$ . This is consistent with the finding in the primary text that liberalism also increased following Clinton's election, and suggests that politically, Clinton supporters shifted ideologically with respect to opposing group-based hierarchy and inequality.

### **Centrality of Racial Identity**

This scale consisted of items adapted from Luhtanen and Crocker's (1992) Collective Self-Esteem Scale, but framed prompts in terms of participants' racial instead of gender group. The scale included four items, such as "In general, belonging to a racial group is an important part of my self-image" ( $\alpha_{\text{Uni}, T1} = 0.85, \alpha_{\text{Uni}, T2} = 0.89$ ).

**Result.** Clinton supporters' racial identification significantly increased after the election,  $F(1, 190) = 40.69, p < .001, \eta^2_p = .176, 95\% \text{ CI } [0.31, 0.59]$ . We are not sure what to make of this finding as increased White identity could signify increasing recognition of White privilege or it could indicate increased affiliation with Whites as a group (Knowles, Lowery, Chow, & Unzueta, 2014; Knowles & Peng, 2005). It might also simply reveal that social identities in general were increasingly salient following the election, which would also explain the rise in gender identity among men and women described above. Individuals might increasingly turn to their identities to reduce uncertainty about the world and their position within it (Hogg, 2000).

### **Perceived Racial Discrimination**

This scale assessed participants' belief that their racial group was subject to discrimination. This was measured with four items, including "Discrimination against my racial/ethnic group is a big problem today" ( $\alpha_{\text{Uni}, T1} = 0.95, \alpha_{\text{Uni}, T2} = 0.95$ ).

**Result.** Clinton supporters' perceived racial discrimination did not change after the election,  $F(1, 190) = 1.82, p = .179, \eta^2_p = .009, 95\% \text{ CI } [-0.23, 0.04]$ . This finding may be relevant in interpreting the meaning of the White identity finding above, as if increasing White identity symbolized growing White nationalism, we would have anticipated that perceptions of White victimhood would be linked with identity (Knowles et al., 2014; Lowery, Knowles, & Unzueta, 2007).

### **Race & Economy**

This scale measured participants' endorsements of zero-sum beliefs regarding economic distribution between Whites and racial minorities (Krosch and Amodio, 2014). Three items were included, such as "When racial minorities make economic gains, Whites lose out economically." ( $\alpha_{\text{Uni}, T1} = 0.89 \alpha_{\text{Uni}, T2} = 0.92$ )

**Result.** Clinton supporters' endorsement of these beliefs did not change after the election,  $F(1, 190) = 0.037, p = .849, \eta^2_p < .001, 95\% \text{ CI } [-0.18, 0.15]$ . This finding is likewise consistent with the conclusion that the rise in White identification is not linked with nationalistic tendencies among Whites (Wellman, Liu, & Wilkins, 2015).

## **Chapter 4**

Essentialism and Prejudice Toward Transgender People

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### **Abstract**

Despite a substantial increase in visibility in the public eye, transgender people continue to experience prejudice and discrimination. For many people, transgender as a social category is a phenomenon only learned about in recent years. As people learn about an ostensibly “new” social group, what leads some people to acknowledge and support vs. dispute and oppose the group? This paper investigates psychological essentialism as one possible predictor and cause of transprejudice. Study 1 reveals that lay people are largely familiar with psychological essentialism, which is significantly associated with significantly lower transprejudice. In Studies 2a and 2b, psychological essentialism is manipulated to explore causality but the results are mixed and largely do not provide evidence for causation. Finally, Studies 3a and 3b explore the possibility that psychological essentialism is used as a post-hoc rationalization of people’s gut-level reactions toward transgender people, but does not find evidence to support this direction of causality. Together, these studies contribute to a growing body of literature that suggests psychological essentialism is associated with transprejudice, and offers some possible explanations for why the causal data were not statistically significant.

## Essentialism and Prejudice Toward Transgender People

Despite recent media recognition and visibility, transgender people continue to face considerable prejudice, discrimination, and even violence. In 2017 alone, 29 transgender people were killed as an act of anti-transgender violence (Lee, 2018). In a recent study of more than 27,000 transgender people, 40% of respondents reported attempting suicide at some point in their lives compared to 4.6% of non-transgender (“cisgender”) people (James et al., 2016), and being the target of gender-based victimization is associated with a higher likelihood of attempting suicide (Goldblum et al., 2012). Additionally, transgender people experience significant housing, healthcare, and employment discrimination and are significantly more likely to be in poverty, (James et al., 2016). Taken together, these data suggest not only the existence of prejudice and discrimination toward transgender people, but also the urgency required to understand the nature of transprejudice in order to improve the physical, social, and fiscal livelihood of transgender people.

However, a great deal of disagreement and confusion surrounding transgender people in the public and scientific discourse hinders empirical investigation. From debating the legitimacy of transgender as an identity or at what age can someone identify as transgender, to conflating it with sexual orientation, the classification of transgender people as a social category is complicated by divisive, often polarizing rhetoric leading to a number of public debates such as which gender division transgender athletes should compete in or what bathroom they should use (Buck, 2016; Ingle, 2019; Steinmetz, 2015). Understanding the consequences of people’s opinions on transgender people as a social category may give insight into the nature of transgender prejudice. One potential avenue of understanding the nature of prejudice toward transgender people is psychological essentialism, or the extent to which people believe a social

group has a fundamental “essence” that makes them categorically different than other groups. However, while some research about essentialism and prejudice for certain social categories like race and gender has found a positive relationship, such that the more someone endorses essentialism the more prejudice they hold, other studies on different social groups like sexual minorities have found a negative relationship. Here, we investigate the relationship of essentialism and transprejudice (prejudice toward transgender people), including the directionality (is essentialism associated with more or less transprejudice?) and causality (do essentialist beliefs cause transprejudice?). Additionally, we test a novel hypothesis: while traditionally the causal pathway between essentialism and prejudice is such that essentialism precedes prejudice, perhaps essentialism is a consequence of prejudice such that people use essentialism to make sense of their attitudes toward transgender people.

### **Psychological Essentialism and Prejudice**

#### **Evidence for essentialism leading to more prejudice**

Social psychological research has historically documented how essentializing outgroups (e.g., on the basis of race, gender, or mental illness) is associated with prejudice and discrimination (Allport, 1954; Dar-Nimrod & Heine, 2011; Prentice & Miller, 2007; Rüsçh, Todd, Bodenhausen, & Corrigan, 2010; Williams & Eberhardt, 2008). For example, Williams and Eberhardt (2008) found that when participants were led to believe that race is biologically determined, as opposed to socially constructed, they were more accepting of racial inequities and less interested in interacting with racial outgroups. Essentialist beliefs also significantly correlate with sexism, such that the more people endorse a biological understanding of gender, the more they express sexist attitudes (Keller, 2005). Rüsçh, Todd, Bodenhausen, & Corrigan (2010) found that believing mental illness is rooted in “biogenetics” is associated with greater social

distance. Together, this research suggests essentialism may be not only associated with greater prejudice, but also may cause prejudice (e.g., Williams & Eberhardt, 2008).

### **Evidence for essentialism leading to less prejudice**

In contrast, research shows that essentialist beliefs about homosexuality are associated with positive attitudes towards gay and lesbian people (Haider-Markel & Joslyn, 2008; Haslam & Levy, 2006; Jayaratne et al., 2006). In a correlational study, Jayaratne and colleagues (2006) found that the more participants believed sexual orientation is biologically-based, the less “bothered” they would be if their child were homosexual. In the first author’s unpublished work, providing an essentialist explanation for homosexuality—that homosexuality is biologically determined—increased participants’ support for gay rights policies (Gomez, unpublished).

Understanding essentialism as multi-dimensional may also shed light on the mixed findings of essentialism and prejudice between groups. Haslam & Levy (2006) defined three dimensions of essentialism: discreteness, immutability, and universality. Discreteness is the belief that other social groups are fundamentally different than one’s own group (e.g. believing that people are either heterosexual or homosexual), immutability is the belief that members of other social groups are genetically different and cannot change who they are, and universality is the belief that social groups exist across time and space (Haslam & Levy, 2006). They found that immutability and universality are associated with positive attitudes toward gay people but discreteness is associated with negative attitudes toward gays (Haslam & Levy, 2006). In contrast, all three categories of essentialism are negatively associated with prejudice toward other races (Haslam & Levy, 2006; Jayaratne et al., 2006; Williams & Eberhardt, 2008).

## **Transgender essentialism and transprejudice**

A small number of studies exist in the literature investigating the relationship between essentialism and transprejudice with mixed results. However, none of these studies directly measured essentialism about transgender people specifically. Instead, to the best of our knowledge, researchers have only investigated the link between transprejudice and the degree to which people essentialize gender (e.g., essentializing differences between men and women) (e.g., Callahan & Zukowski, 2019; Ching, Chen, & Kong, 2020; Prusaczyk & Hodson, 2019; Roberts, Ho, Rhodes, & Gelman, 2017). In one study, children who categorized transgender peers on the basis of sex (perhaps a form of biological essentialism) instead of gender expressed significantly more transprejudice (Gülgöz, Gomez, DeMeules, & Olson, 2018). Similarly, gender essentialism was found to both be associated with and cause more transprejudice in adults (Wilton et al., 2019). For example, participants who were exposed to anti-essentialist evidence for gender differences between men and women (i.e., gender essentialism) reported higher support for transgender rights compared to a control condition. In a different study, Chinese adults who were exposed to an article that explained sex differences based on biological essentialism expressed more transprejudice compared to participants in a control condition (Ching & Xu, 2018). Thus, it is unclear whether essentializing transgender people (e.g., believing a transgender person is born transgender) is associated with transprejudice, which the present study seeks to explore.

## **Essentialism as a post-hoc rationalization**

Traditionally, the relationship between essentialism and prejudice has been conceptualized and studied as essentialism causing prejudice. Indeed, the literature provides a number of compelling reasons for essentialism preceding prejudice. For example, findings in developmental psychology that children as young as preschool employ essentialism to

understand the world, suggesting essentialism is a basic human-cognitive strategy to understand categorization (Gelman, 2004). Additionally, if essentialism is conceptualized as a type of cognitive strategy (i.e., a “thought”), and prejudice conceptualized as a negative attitude toward a social group (i.e., an “emotion”), it follows that essentialism likely precedes prejudice based on popular theories in psychology that posit thought precedes emotion (Lazarus & Folkman, 1984).

Alternatively, cognitive dissonance research suggests people regularly rationalize or justify their attitudes, providing a theoretical basis for suspecting prejudice may precede essentialism (Festinger & Carlsmith, 1959). For example, participants who engaged in a boring task and then asked to tell a confederate the task was fun were significantly more likely to change their attitude to believe the task was fun when paid \$1 than participants who were paid \$20. Participants who were only paid \$1 are theorized to have no justification for lying and thus adjust their attitudes whereas those paid \$20 can justify their lying from being paid well, suggesting people engage in post-hoc rationalization after developing initial attitudes (Festinger & Carlsmith, 1959). It is possible that people may first identify their attitudes toward an outgroup (e.g., a “gut-reaction”), and then think of ways to rationalize or justify these feelings. For example, despite little research on how organic food is “healthier” than non-organic food, people generally prefer organic possibly because of a fallacy that if something is “natural,” it is “good” (Mulet, 2017). Thus, perhaps people may recognize their prejudice toward transgender people, and then rationalize it by conceptualizing transgender people as not natural. Conversely, as a result of this positivity bias toward things that are “natural,” people may recognize their positive feelings toward transgender people (low prejudice) and rationalize these attitudes by conceptualizing transgender people as natural.

## Present Study

Here we test both possible directions of essentialism and prejudice for transgender people: whether essentialism leads to transprejudice or transprejudice leads to essentialism. First, in Study 1 we conduct a correlational and descriptive study to investigate the extent to which people spontaneously essentialize transgender people, the extent of transprejudice, and whether essentialism predicts transprejudice controlling for other covariates. Then, in Studies 2a and 2b, we conduct two nearly identical studies to test whether essentialism causes prejudice. Finally, in Studies 3a and 3b, we test a novel hypothesis: whether changes in prejudice lead to changes in essentialism, which would suggest essentialism is a post-hoc rationalization.

### **Study 1: Investigating Lay Conceptions of Transgender Identity and Correlational Evidence**

Our first study investigates two main questions: 1) Do people spontaneously essentialize transgender identities in a free-response task? and 2) Is essentialism associated with prejudice?

#### **Methods**

We conducted an online survey with a series of open-ended and Likert-style questions.

**Participants.** 222 heterosexual, cisgender were recruited from Mechanical Turk ( $N = 110$  women) to complete a 15 minute survey.<sup>2</sup>

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<sup>2</sup> A total of 250 participants completed the survey but 28 participants identified as non-heterosexual and/ or transgender and were excluded from the study. Instead of pre-screening for gender and sexuality, which could lead to misreporting in order to gain access to future surveys and potentially influence subsequent survey responses, the survey was opened to everyone and then only cisgender and heterosexual participants' data were retained, though results do not substantively change if these participants are included in analyses. Though transgender and gay people can have transprejudice, we specifically investigated cisgender people to understand how people categorize a social outgroup and heterosexual people because gay individuals, though a different social category, are often grouped together with transgender people (e.g., the umbrella term "LGBT"), are often gender non-conforming (as a <sup>2</sup>child and/ or also in adulthood), and experience similar essentialist rhetoric (e.g., being "born this way") which may be transferred to their beliefs about the etiology of transgender identities.

## Measures.

*Lay conceptions of transgender etiology.* Participants first answered a free-response question, “What do you think causes someone to be transgender?” to see how people spontaneously described how transgender identities form, and whether essentialism is commonly used as an explanation. This question was intentionally placed at the beginning of the survey so that other measures related to essentialism could not affect responses. We identified four common explanations in these responses: biological, mental illness, abuse/trauma, and environmental reasons. Then, two research assistants coded responses for the presence of each explanation and we analyzed for interrater reliability. Using the guidelines suggested by McHugh (2012), there was moderate agreement across coders (all  $K$ 's > .60: Biological,  $K = .80$ ; Mental illness,  $K = .62$ , Abuse/trauma,  $K = .62$ ; and Environmental,  $K = .77$ ). Discrepancies were then resolved by the lead author (who was not one of the original coders).

*Transgender Essentialist Beliefs Scale.* Next, participants completed a series of Likert questions to measure two different dimensions of essentialism: biological and universality. This scale was adapted from Haslam & Levy (2006) to be specifically about transgender people. Biological essentialism was measured by two items: “Being transgender is caused by biological factors” and “Being transgender is an innate, genetically-based quality” (1—Strongly disagree, 7—Strongly agree). These items were averaged to form a composite,  $r = .68$ ,  $p < .001$ . Universality essentialism was measured by five items which were averaged to form a composite,  $\alpha = .84$ . For example, “Transgender people have probably existed through human history” (1—Strongly disagree, 7—Strongly agree). See Appendix A for a full list of items.

*Transprejudice.* Participants completed a series of feeling thermometer questions about transgender men, transgender women, cisgender men, and cisgender women (“Imagine that your

feelings about different groups could be measured on a thermometer, like the one below, ranging from 0 to 100 degrees”). See Appendix B for complete language and graphics used. Attitudes toward cisgender men and cisgender women were averaged for a general attitude toward cisgender people, and attitudes toward transgender women and transgender men were averaged for a general attitude toward transgender people and to be consistent with the framing of other dependent measures which were about transgender people in general. Participants’ scores for transgender individuals was subtracted from cisgender scores, such that higher numbers mean more transprejudice. Separately analyzing attitudes by gender (i.e., transgender women vs. transgender men) do not substantively change the results, though participants on average reported more prejudice toward transgender women and the relationship between biological essentialism and prejudice toward transgender men was not significant ( $p = .074$ ) (See Supplemental Materials).

*Political orientation.* Participants answered a single question, “How would you describe your political affiliation?” (1—Very conservative, 5—Very liberal).

*Personally knowing a transgender person.* A simple yes/no question, “Do you personally know an individual who identifies as transgender?” was completed based on previous literature that suggests interpersonal connection with outgroup members may predict less prejudice (Allport, 1954).

*Demographics.* Finally, participants reported their age, sexual orientation, and gender.

*Additional measures.* The measures above were a part of a larger, exploratory survey about attitudes toward transgender people and issues and were selected for this paper because they most directly impacted our subsequent study design and are the only direct and explicit

measures of transprejudice and essentialism. For a complete list of measures participants completed, see the Supplement.

## **Results**

**Lay conceptions of transgender etiology.** Coding participants' free-responses on what they believe "causes" someone to be transgender identified four common explanations: biological essentialism (61%), mental illness (17%), environmental reasons (14%), and abuse/trauma (6%) (Note: these add up to more than 100% because responses could be coded as more than one type of response). Thus, a majority of participants (61%) spontaneously used biological essentialism to describe transgender identities, suggesting essentialism is an ecologically valid psychological variable relative to the study of trans people (see Table 1 below for example responses for each category).

**Table 1 – Example lay conceptions of transgender etiology from participants**

Biological essentialism	Mental illness	Environmental reasons	Abuse/trauma
<i>Some people are born that way and it is a natural part of being human.</i>	<i>Dysphoria. They have head problems but instead of being treated for it they are given special treatment.</i>	<i>...The social reason can be any combination of things. The environment, the status quo, the prevailing classes can all have some kind of influence.</i>	<i>Traumatic childhood experiences, abuse, bullying...can cause someone to become transgender.</i>
<i>I believe it is genetic and they are born that way.</i>	<i>I believe it is a psychological disorder.</i>	<i>A lack of a proper upbringing.</i>	<i>A long-term mental injury resulting from sexual trauma that was experienced during childhood or adolescence.</i>
<i>I think people are born transgender. It could be inherited or it may caused to influences that occurred while they were still in the womb.</i>	<i>I believe transgender identity is a kind of sexual confusion. It is a disorder that is caused by mental illness.</i>	<i>I think a person's life experiences causes them to be transgender. People experiment and do different things</i>	<i>Possibly sexual abuse as a child.</i>

**Transprejudice.** A one sample t-test comparing participants' transprejudice scores ( $M = 18.30$ ,  $SD = 28.09$ ) to zero (i.e., feeling the same toward cisgender and transgender people) found that participants felt significantly more warmth toward cisgender people,  $t(221) = 9.71$ ,  $p < .001$ , suggesting the feeling thermometer captured explicit transprejudice in our sample.

**Essentialism and transprejudice.** Linear regression found that both biological and universality essentialism are significantly associated with transprejudice, such that the more a participant supported an essentialist view, the less transprejudice they had, controlling for relevant covariates such as age, gender, political orientation, and whether someone personally

knows a transgender person. See Table 2 below for full results, and Table 3 for a model with only biological and universality essentialism as predictors.

**Table 2 – Linear regression results for transprejudice (full model)**

	<i>b</i>	<i>SE</i>	<i>B</i>	<i>t</i>	<i>p</i>	Fit
Intercept	57.29	11.42		5.02	.001	
polOri	-5.81	1.58	-.24	-3.69	.001	
knowTrans	-10.38	3.80	.16	2.73	.007	
age	-.08	.13	-.03	-.57	.570	
gender	1.30	3.17	.02	.41	.683	
biological	-3.50	1.21	-.22	-2.90	.004	
universality	-4.12	1.51	-.21	-2.74	.007	
						$R^2 = .35$
						$F(6, 215) = 19.45$

**Table 3 – Linear regression results for transprejudice (essentialism only)**

	<i>b</i>	<i>SE</i>	<i>B</i>	<i>t</i>	<i>p</i>	Fit
Intercept	69.37	6.00		11.57	.001	
biological	-4.65	1.19	-.30	-3.90	.001	
universality	-5.80	1.51	-.29	-3.83	.001	
						$R^2 = .29$
						$F(2, 219) = 43.74$

## Discussion

Study 1 found evidence that people spontaneously commonly think about the etiology of transgender identities in essentialist ways, demonstrating that psychological essentialism is an externally valid variable already within the minds of people in our sample and is not simply an esoteric academic construct. We also validated the feeling thermometer as an effective way of measuring explicit prejudice in our sample. Finally, regression analyses suggested that both biological and universal forms of essentialism are associated with less transprejudice, controlling for various relevant covariates including age, gender, political orientation, and whether someone personally knows a transgender person. As expected, liberal political orientation and knowing a transgender person was associated with less transprejudice. Age and gender, however, did not significantly predict transprejudice in our sample. While Study 1 found evidence for a relationship between essentialism and prejudice similar to that of sexual minorities (e.g., more essentialism, less prejudice), these data are correlational and do not speak to a causal pathway from essentialism to prejudice.

### **Studies 2a and 2b: Investigating a Causal Pathway for Essentialism → Prejudice**

To investigate causality, we experimentally manipulate essentialism and observe its effects on prejudice. Studies 2a and 2b are nearly identical and therefore presented together; any differences are noted in the methods.

## Methods

Participants completed an online survey in a between-subjects experiment with three conditions: control, biological essentialism, and universality essentialism. Each condition first involved asking participants to read an article describing scientific evidence for the respective

type of essentialism. Then participants completed a variety of measures that were identical across conditions.

**Participants.** In Study 2a, 320 undergraduates were recruited for an online study for extra course credit. 24 participants (2 transgender, 3 non-binary] and were excluded for not identifying as cisgender and heterosexual (for the same reasons as in Study 1; results do not substantively change when including these individuals), leaving a final sample of  $N = 296$  (194 women). In Study 2b, 346 undergraduates were recruited for an online study for extra course credit. 48 participants (2 transgender) were excluded for not identifying as cisgender and heterosexual, leaving a final sample of  $N = 298$  (200 women).

**Materials.** In all conditions, participants were first given a basic definition of transgender to standardize people's understanding across conditions, "A person who identifies with or expresses a gender identity that differs from the one which corresponds to the person's sex at birth – Merriam-Webster Dictionary" and a clarification of trans women and men (Transgender women were born males but deeply identify as women. Transgender men were born females but deeply identify as men. Then, participants were randomly assigned to one of the following conditions:

*Control.* Participants were only exposed to the definition of transgender before answering the dependent measures.

*Biological essentialism.* Participants read an "excerpt" of an article based on real scientific evidence of a biological explanation for transgender people (a twin study). For example, participants read "Research with twins has suggested a biological basis for being transgender. Dr. Diamond found that identical twins were 9 times more likely than fraternal twins to be transgender if their twin was also transgender." See Appendix D for full article. In

Study 2b, participants additionally saw a picture of a scientific rendering of DNA that accompanied the article.

*Universality essentialism.* Participants read an “excerpt” of an article based on real scientific evidence that transgender people have existed throughout human history and continue to exist across many cultures. For example, participants read “Research has suggested that transgender people have existed throughout history and cultures across the world. In one study, led by Dr. Paul Vasey, individuals who identify with a gender that does not align with their biological sex were documented in Samoa.” See Appendix E for full article. In Study 2b, participants additionally saw map of the world with markers of various cultures that have transgender-like identities that accompanied the article.

### **Measures.**

*Transgender Essentialist Beliefs Scale.* After the condition materials, participants reported their biological and universality essentialism beliefs (items presented in a randomized order for each participant), using the same items from Study 1 except 3 additional biological essentialism items were included (see Appendix A for full items).

*Transprejudice.* Next, participants completed a series of feeling thermometers about how warmly they felt toward cisgender people and transgender people. Participants’ scores for transgender individuals was subtracted from cisgender scores, such that higher numbers mean more transprejudice, as in Study 1.

*Pathologizing.* Participants then completed three items to measure the extent to which they believed being transgender is a form of illness (“Transgender people should seek help from doctors and psychologists to find a cure” 1—Very strongly disagree, 7 – Very strongly agree),  $\alpha = .91$  for Study 2a and  $\alpha = .94$  for Study 2b. See Appendix F for full list of items.

*Social Distance.* In addition to explicit prejudice via the feeling thermometers, participants also completed a series of items gauging the extent to which they would be willing to acquaint with transgender people in a variety of social contexts (e.g., To what extent would you be willing to be friends with a transgender person? To what extent would you be willing to live in the same neighborhood with several transgender people? 1—Not at all, 7 – Very much). 5 items were averaged to form a composite ( $\alpha = .93$  for both studies 2a and 2b), see Appendix G for all items (adapted from Bogardus, 1947).

*Additional measures.* Participants completed the same demographics from Study 1 (see Supplement for full list). Additionally, there were questions about transgender stereotypes (see Supplement), but these are not reported in the present paper as they are later dropped in Study 3 and were not relevant to the present research questions.

## Results

*Manipulation check.* There was no significant difference in biological essentialist beliefs between the control condition ( $M = 4.22$ ,  $SD = 1.20$ ) and the biological essentialism condition ( $M = 4.46$ ,  $SD = 1.19$ ),  $t(194) = -1.38$ ,  $p = .169$ ,  $d = -.20$ , in Study 2a or Study 2b ( $M_{\text{control}} = 4.29$ ,  $SD = 1.24$ ,  $M_{\text{biological}} = 4.27$ ,  $SD = 1.30$ ;  $t(192) = .14$ ,  $p = .888$ ,  $d = .02$ ), suggesting the article about biological essentialism did not successfully change people's biological essentialist beliefs. Participants' endorsement of universality essentialism beliefs were significantly higher in the universality condition ( $M = 5.25$ ,  $SD = .92$ ) compared to the control condition ( $M = 4.66$ ,  $SD = .97$ ),  $t(194) = -4.36$ ,  $p < .001$ ,  $d = -0.62$  in Study 2a as well as in Study 2b ( $M_{\text{universality}} = 5.07$ ,  $SD = .94$ ,  $M_{\text{control}} = 4.61$ ,  $SD = 1.08$ ;  $t(201) = -3.28$ ,  $p = .001$ ,  $d = -0.46$ ), suggesting the universality article successfully increased people's endorsement of universality essentialist beliefs.

### **Essentialism and prejudice.**

*Study 2a.* Overall, the omnibus F-test suggested there were no significant differences between the three conditions on prejudice,  $F(2, 293) = .83, p = .438, \eta_p^2 = .006$ , and post-hoc comparisons (Fisher's LSD, which is used throughout the paper for all post-hoc analyses) did not reveal any significant pairwise comparisons, suggesting the experimental manipulations (biological and universality essentialism) had no effect on transprejudice.

*Study 2b.* Similar to Study 2a, there were no significant differences between the three Conditions on prejudice,  $F(2, 294) = .38, p = .686, \eta_p^2 = .003$ , and post-hoc comparisons did not reveal any significant pairwise comparisons, suggesting the experimental manipulations (biological and universality essentialism) had no effect on transprejudice.

### **Essentialism and pathologizing.**

*Study 2a.* Overall, the omnibus F-test suggested there were no significant differences between the three conditions on pathologizing,  $F(2, 293) = 1.65, p = .194, \eta_p^2 = .011$ , and post-hoc comparisons did not reveal any significant pairwise comparisons.

*Study 2b.* Overall, the omnibus F-test suggested there were no significant differences between the three conditions on pathologizing,  $F(2, 295) = .32, p = .727, \eta_p^2 = .002$ . Post-hoc analyses revealed no significant pairwise comparisons.

### **Essentialism and closeness.**

*Study 2a.* Overall, the omnibus F-test suggested there were no significant differences between the three conditions on closeness,  $F(2, 293) = 1.54, p = .217, \eta_p^2 = .010$ , and post-hoc comparisons did not reveal any significant pairwise comparisons .

*Study 2b.* Overall, the omnibus F-test suggested there were no significant differences

between the three conditions on closeness,  $F(2, 295) = 1.99, p = .139, \eta_p^2 = .013$ . Post-hoc analyses revealed no significant pairwise comparisons.

### **Results controlling for political orientation**

Based on the null results above, as an exploratory analysis we decided to re-analyze the data controlling for political orientation, a significant predictor of transprejudice we found in Study 1. Personally knowing a transgender person also significantly predicted transprejudice, but we only wanted to select one covariate given power constraints and not many people in our sample (only 22% of participants from Study 1) reported knowing a transgender person. Below, we summarize any differences in the results when controlling for political orientation because most results did not change (please see Supplement for full analyses). However, these analyses are purely exploratory and by running additional analyses we are increasing the likelihood of false positives.

#### **Essentialism and pathologizing.**

*Study 2a.* Overall, the omnibus F-test suggested there was at least one significant difference between the three conditions,  $F(2, 292) = 3.74, p = .025, \eta_p^2 = .025$ . Post-hoc analyses revealed that participants in the biological condition pathologized transgender people significantly more ( $M = 2.09, SD = 1.44$ ) than those in the universality condition ( $M = 1.75, SD = 1.23$ ),  $p = .007, d = 0.25$ . No other pairwise comparison was significant.

#### **Essentialism and closeness.**

*Study 2a.* Overall, the omnibus F-test suggested there was at least one significant difference between the three conditions,  $F(2, 292) = 3.35, p = .036, \eta_p^2 = .022$ . Post-hoc analyses revealed that participants in the biological condition expressed significantly less social comfort

with transgender people ( $M = 4.34$ ,  $SD = 1.10$ ) compared to those in the universality condition ( $M = 4.63$ ,  $SD = 1.25$ ),  $p = .010$ ,  $d = -0.25$ .

*Study 2b.* Overall, the omnibus F-test suggested there was at least one significant difference between the three conditions,  $F(2, 294) = 3.29$ ,  $p = .039$ ,  $\eta_p^2 = .022$ . Post-hoc analyses revealed that participants in the universality condition expressed significantly more social comfort with transgender people ( $M = 5.65$ ,  $SD = 1.37$ ) compared to those in the control condition ( $M = 5.28$ ,  $SD = 1.55$ ),  $p = .014$ ,  $d = -0.25$ .

**Summary.** While most results do not change when controlling for political orientation, a few interesting findings do emerge when including this covariate. Less explicit measures of prejudice like pathologizing and closeness were significantly affected by the manipulations, such that biological essentialism led to higher pathologizing compared to the universality condition, and the universality condition led to more openness to socially befriending transgender people compared to the biological condition (in Study 2a) or the control condition (Study 2b).

### **Additional correlational analyses**

Because of the null to mixed results of Study 2a and 2b, we analyzed correlations between essentialism and transprejudice (regardless of which condition participants were in) to see if we could replicate the findings of Study 1 that suggested endorsing essentialism (both biological and universal) was associated with less transprejudice. In Study 2a, biological essentialism was significantly associated with less transprejudice,  $r(294) = -.28$ ,  $p < .001$ , as well as in Study 2b,  $r(295) = -.36$ ,  $p < .001$ . In Study 2a, universal essentialism was significantly associated with less transprejudice,  $r(294) = -.36$ ,  $p < .001$ , as well as in Study 2b,  $r(295) = -.34$ ,  $p < .001$ . Results for all correlations do not change when controlling for political orientation. Together, these results replicate the correlational findings of Study 1 suggesting essentialism and

transprejudice are significantly associated with each other, but directionality and causation remain unclear.

### **Additional equivalency analyses**

Because of the large number of null results (especially when not controlling for political orientation), we conducted equivalency tests to explore whether differences between conditions were essentially zero (Lakens, Scheel, & Isager, 2018). For each dependent variable (transprejudice, pathologizing, and closeness) we used two one-sided tests (TOSTs), using a smallest effect size of interest of  $d = .3$ , to test whether each of our conditions (biological essentialism, universality essentialism) were statistically equivalent to the control condition. All equivalency tests were not significant (except one, but given that we analyzed 12 comparisons, this is likely due to chance) suggesting that our experimental conditions are not statistically equivalent to the control condition, thus a small effect may exist but our studies were unable to capture it (See Table 4).

**Table 4 – Equivalency tests**

Study 2a			
Comparison	DF	<i>t</i>	<i>p</i>
Control vs. Biological (Transprejudice)	193.37	-0.8	.211
Control vs. Universal (Transprejudice)	194	-1.32	.095
Control vs. Biological (Pathologizing)	193.28	1.54	.063
Control vs. Universal (Pathologizing)	192.22	-0.83	.205
Control vs. Biological (Closeness)	187.69	-1.63	.053
Control vs. Universal (Closeness)	193.37	0.93	.176
Study 2b			
Comparison	DF	<i>t</i>	<i>p</i>
Control vs. Biological (Transprejudice)	191.2	-1.49	.069
Control vs. Universal (Transprejudice)	195.79	-1.27	.102
Control vs. Biological (Pathologizing)	191.41	-1.89	.030
Control vs. Universal (Pathologizing)	196.78	-1.34	.092
Control vs. Biological (Closeness)	191.97	0.43	.334
Control vs. Universal (Closeness)	195.23	0.33	.369

**Discussion**

Across two studies, we found no evidence for a causal link between essentialism (both biological and universality) and explicit prejudice measured via feeling thermometers.

Additionally, biological essentialism had no effect on pathologizing or social closeness.

However, it's important to note that our manipulation check was not successful for the biological essentialism condition – reading about scientific evidence on the biological basis of transgender people did not significantly increase people's belief in biological essentialism compared to a control, but the universality condition was successful in shifting universality essentialism. Because the biological condition did not significantly shift participants' biological essentialism, and Study 1 suggested people commonly use biological essentialism to understand transgender identities, it may be reasonable to assume this condition is similar to the control condition in that it represents a status quo of how people already think about transgender people. In contrast, the universality condition may have been more successful because it presented people with more novel evidence (e.g., not many people know about transgender history or transgender identities in other cultures). This hypothesis is supported by the free-response data from Study 1 in which 61% of people mentioned biological essentialism while no participants mentioned universality, as well as data in Study 2 suggesting people scored higher on biological essentialism ( $M = 4.26$ ,  $SD = 1.23$ ) compared to universality ( $M = 4.76$ ,  $SD = 1.01$ ),  $t(257) = -6.91$ ,  $p < .001$ ,  $d = .40$ .

Results for universality were more mixed, where there was some evidence for a causal link between universality on pathologizing and closeness, such that reading about how transgender identities are universal across history and cultures increased participants' openness to acquainting with transgender people and decreased the extent to which they pathologized transgender people, but only when controlling for political orientation. However, the results were either not replicated at all (e.g., universality decreasing pathologizing only significant in Study 2a) or replicated via different pairwise comparisons (e.g., in Study 2a universality was higher on social closeness compared to the biological condition, whereas in Study 2b universality was higher on social closeness compared to the control condition). Because political orientation was a

promising covariate in our exploratory analyses (possibly because liberal people are more likely to be exposed and internalize pro-LGBT essentialist rhetoric), we planned to control for political orientation in the subsequent set of studies. Taken together, though falling far short from providing strong evidence for a causal pathway between essentialism and prejudice, these data suggest that universality essentialism in particular may be a promising mechanism of impacting attitudes toward transgender people (e.g., pathologizing and social closeness but not explicit transprejudice).

Given the consistent correlation between essentialism and prejudice, mixed to null evidence for causality, and insignificant equivalency tests we considered a number of potential future avenues. One possibility is that our manipulations simply were not strong enough to cause a change in prejudice, so future studies could have stronger essentialism manipulations. However, increasing the strength of our manipulation (e.g., adding visual cues to the scientific articles in Study 2b) was not effective, and similar manipulations of scientific articles have been successfully used in other similar studies (Williams & Eberhardt, 2008; Wilton et al., 2019). Another possibility is that we assumed the wrong direction in our correlational evidence from Study 1: instead of essentialism leading to prejudice, perhaps prejudice precedes essentialism. To investigate this possibility, we next investigated whether reducing prejudice cause an increase in essentialism.

### **Studies 3a and 3b: Investigating a Causal Pathway for Prejudice -> Essentialism**

After observing mixed to null results on the causal pathway from essentialism to prejudice, we next explored the other possible causal direction of the correlational evidence we found from Study 1 and Study 2a and 2b: perhaps changing prejudice leads to a change in essentialism. As described in the main introduction, people routinely think critically about their

attitudes and generate rationalizations and justifications for holding them (e.g., Festinger & Carlsmith, 1959). Transgender people may be a domain in which some people have strong, gut-level attitudes and reactions toward and then seek to explain these responses via rationalization (Haidt, Bjorklund, & Murphy, 2000).

In two between-subject studies, we experimentally manipulate prejudice to see its effect on essentialist beliefs as an indirect way of testing whether essentialism is a post-hoc rationalization for how people feel toward transgender people. We attempt to reduce prejudice using two strategies: outgroup exemplars and imagined contact, as it would be unethical to try to and increase prejudice. Based on contact theory, imagined contact (e.g., imagining having a positive interaction with an outgroup member) has been shown to decrease prejudice (Allport 1954; Crisp, Stathi, Turner, & Husnu, 2009). Another successful tactic in the literature to reduce prejudice is exposing people to positive “exemplars” of an outgroup, which are theorized to provide an example of an outgroup member who defies negative stereotypes (Dasgupta & Greenwald, 2001). We then examined whether reducing prejudice would lead to higher rates of endorsing essentialism. Studies 3a and 3b are nearly identical and any differences are noted in the methods. Additionally, we included attention checks in Study 3a and 3b to ensure our online participants were fully engaged, a limitation of Study 2a and 2b.

## **Methods**

Participants were recruited to participate in an online experiment in which they were randomly assigned to a strategy to decrease prejudice toward transgender people (imagined contact, exemplar, and control) to test whether this would affect people’s essentialist beliefs.

**Participants.** In Study 3a, 332 undergraduates were recruited for an online study for extra course credit. 44 (5 transgender) participants were excluded for not identifying as cisgender

and heterosexual (for the same reasons as in Study 1 and 2; results do not substantively change when including these individuals unless otherwise noted), and 17 were excluded for not passing an attention check, leaving a final sample of  $N = 271$  (162 women). In Study 3b, 228 undergraduates were recruited for an online study for extra course credit. 29 participants (2 transgender, 2 non-binary) were excluded for not identifying as cisgender and heterosexual and 16 for failing a manipulation check, leaving a final sample of  $N = 183$  (103 women).

**Materials.** In all conditions, participants were first given the same basic definition of transgender as Study 2a and Study 2b (See Appendix C), and then randomly assigned to one of the following conditions:

*Control condition.* Participants were only exposed to the definition of transgender.

*Imagined contact condition.* Participants were given an imagined contact task, adapted from Crisp, Stathi, Turner, & Husnu (2009). First, participants were instructed to “Please take a minute and imagine yourself meeting a transgender woman for the first time. Imagine that the interaction is positive, relaxed, and comfortable.” Participants could not click “next” in the survey for one minute to encourage participants to participate in this task. Then, participants were instructed to “Please take a few moments to write a brief description of what you imagined in full sentences.”

*Exemplar condition.* Participants read a short blurb about Janet Mock, a famous transgender woman who meets various cultural standards of success (professionally successful, attractive, married at the time). An image of Mock was also included with the blurb (See Appendix H for materials). This condition was removed in Study 3b.

## **Measures.**

*Transprejudice.* Next, participants completed a series of feeling thermometers about how warmly they felt toward cisgender women and transgender women (similar to Study 1 and 2). Participants' scores for transgender individuals were subtracted from cisgender scores, such that higher numbers mean more transprejudice. However, in Study 3a and 3b this measure is used as a manipulation check, as the goal of the studies was to show that we could manipulate prejudice (compared to the control condition) in the two experimental conditions.

*Transgender Essentialist Beliefs Scale.* Then, participants reported their biological and universality essentialism beliefs (items randomized for each participant), using the same items from Study 1 and 2 (see Appendix A for full items). However in Study 3a and 3b, these are now the primary dependent variables.

*Attention check.* At the end of the survey, participants answered the following, "Which of the following did you do at the beginning of the survey?" (Imagine meeting a transgender woman and then write about it, Read about Janet Mock, I did neither of these tasks) and were excluded if they answered incorrectly based on their assigned condition.

*Additional measures.* Participants completed the same list of demographic questions in Studies 1 and 2 (see Supplement for full list), otherwise the full list of measures are reported here.

## **Results**

As described earlier, the following analyses all control for political orientation (though the results do not change substantively when excluding this covariate).

### **Transprejudice (manipulation check).**

*Study 3a.* Overall, there were no significant differences between the three conditions on

transprejudice, controlling for political orientation  $F(2, 267) = .61, p = .545, \eta_p^2 = .005$ . Post-hoc analyses revealed no significant pairwise comparisons, suggesting the experimental manipulations had no effect on transprejudice.

*Study 3b.* Participants in the imagined contact condition expressed significantly less prejudice ( $M = 11.45, SD = 18.20$ ) compared to the control condition ( $M = 18.68, SD = 25.89$ ) controlling for political orientation  $F(1, 179) = 4.64, p = .033, \eta_p^2 = .025$ . This was not significant when including transgender and gay individuals, likely because imagining contact with a transgender person is a fundamentally different exercise for transgender people (imagined contact with an ingroup member vs. imagined contact with an outgroup member) and perhaps less novel for gay participants who may be more likely than heterosexual people to personally know a transgender person.

**Biological essentialism.** Across both studies, there were no significant differences between the three conditions on biological essentialism, controlling for political orientation (Study 3a:  $F(2, 267) = .34, p = .709, \eta_p^2 = .003$ ; Study 3b:  $F(1, 180) = 1.04, p = .310, \eta_p^2 = .006$ ). Post-hoc analyses revealed no significant pairwise comparisons, suggesting the experimental manipulations had no effect on biological essentialism in either study.

**Universality essentialism.** Across both studies, there were no significant differences between the three conditions on universality essentialism, controlling for political orientation (Study 3a:  $F(2, 267) = 2.61, p = .076, \eta_p^2 = .019$ ; Study 3b:  $F(1, 180) = .52, p = .473, \eta_p^2 = .003$ ). Post-hoc analyses revealed no significant pairwise comparisons (except in Study 3a, where universality essentialism was higher in the imagined contact condition compared to the exemplar condition,  $p = .023, \eta_p^2 = .28$ ), suggesting the experimental manipulations had no effect on universality essentialism in either study.

### **Additional correlational analyses**

We also conducted correlational analyses, regardless of participant condition, to see if the hitherto significant association between essentialism and transprejudice in Studies 1 and 2 was significant. In Study 3a, biological essentialism was significantly associated with less transprejudice,  $r(269) = -.60, p < .001$ , as well as (marginally) in Study 3b,  $r(180) = -.15, p = .050$ . In Study 3a, universal essentialism was significantly associated with less transprejudice,  $r(269) = -.49, p < .001$ , as well as in Study 3b,  $r(180) = -.16, p = .029$ . Results for all correlations do not change when controlling for political orientation.

### **Additional equivalency analyses**

Because of the large number of null results, we conducted equivalency tests to explore whether differences between conditions were essentially zero (Lakens, Scheel, & Isager, 2018). For each dependent variable (biological essentialism, universality essentialism) we used two one-sided tests (TOSTs), using a smallest effect size of interest of  $d = .3$ , to test whether each of our conditions (control, imagined contact) were statistically equivalent to the control condition. We only tested these comparisons in Study 3b because the manipulation was unsuccessful in Study 3a. The equivalence tests were not significant when comparing the control condition vs. the imagined contact condition for biological essentialism,  $t(180.98) = 0.94, p = .175$ , or for universality,  $t(178.65) = 1.22, p = .113$ , suggesting that a small effect may exist but our studies were unable to capture it.

### **Discussion**

While introducing participants to a transgender exemplar did not affect prejudice, asking participants to imagine meeting a transgender person did significantly reduce prejudice, suggesting imagined contact could be a viable strategy in reducing transprejudice. However, in

the context of Studies 3a and 3b, reducing transprejudice was a manipulation check – our primary interest was to see how essentialist beliefs might change as a function of transprejudice.

We did not find any evidence for the post-hoc rationalization hypothesis: across two studies, there were no significant effects on essentialist beliefs (both biological and universality). A single pairwise comparison was significant, in which universality essentialism was higher in the imagined contact condition compared to the exemplar condition, but the exemplar condition appeared to slightly increase (though not significantly so) transprejudice ( $M = 22.68$ ,  $SD = 31.72$ ) compared to the control condition ( $M = 21.85$ ,  $SD = 30.54$ ), so this finding is likely erroneous. Because the exemplar condition appeared to have no effect, or even a negative effect, on transprejudice, we excluded this condition in Study 3b and thus only have data from a single study on this finding.

### **General Discussion**

We conducted 5 studies (one correlational, four experimental including two replications) investigating the relationship between essentialism and transprejudice. In Study 1, we found that when asked about what “makes” someone transgender, participants in our sample used essentialist language unprompted, suggesting essentialism is worth empirical study because it appears to be a way many people conceptualize the etiology of transgender people. We also found that two forms of essentialism (biological and universality) both predict transprejudice above and beyond relevant covariates like political orientation, suggesting that more essentialism is associated with less transprejudice. Then, in Studies 2a and 2b, we investigated whether essentialism leads to transprejudice and found mixed results: while we found no evidence for essentialism affecting explicit transprejudice, but we did find some weak evidence suggesting that universality may lead to an increase in openness toward acquainting with transgender people

and a decrease in pathologizing transgender people. Finally, in Studies 3a and 3b, we tested the possibility that a change in essentialism leads to a change in prejudice (providing evidence for essentialism as a post-hoc rationalization strategy people might use to make sense of their transprejudice), but we did not find any evidence for this hypothesis.

These data add to the existing literature on the relationship between essentialism and prejudice by exploring an understudied marginalized group and finding evidence that for transprejudice, it appears more essentialism is associated with less prejudice. This finding suggests that for transprejudice, essentialism may operate similarly to sexual minorities rather than race and gender (where more essentialism is associated with more prejudice), perhaps because of a positive “born this way” narrative often used in pro-LGBT groups as rhetoric to advance LGBT civil rights. Our findings on lay conceptions of transgender people also add convergent evidence to other research in the literature that found people often essentialize transgender people (Buck, 2016).

However, it remains unclear where these beliefs come from. That is, whether the extent to which essentialism is a more basic cognitive strategy people may use to understand outgroups (i.e., something people do naturally) or a learned heuristic (i.e., something people do as a result of learning from social/environmental influences, such as reading about pro-LGBT “born this way” rhetoric in the news). While we tested both ways of possible directionality of the correlation between essentialism and prejudice, we did not explore the alternative possibility that some external variable is responsible for their relationship. One possibility is that social norms (specifically, the belief that it is politically correct to essentialize transgender identities) are responsible for the relationship between essentialism and prejudice. That is, essentialism may not inherently directly affect prejudice but rather people’s endorsement of essentialism in our study

may be capturing people's desire (or not) to conform to social norms of being socially-conscious. Pervasive egalitarian norms in the US influence people's behavior by encouraging them to conform to the societal standard of being socially-conscious (i.e., not prejudiced) (Crandall, Eshleman, & O'Brien, 2002). Additionally, social norms of how to not be prejudiced toward outgroups differs by group. For example, well-meaning people are likely aware that believing being gay or transgender is a choice (not essentializing) is problematic and instead endorse a "born this way" ideology. In contrast, social norms of how we talk about race and gender avoid essentializing these groups of people, which may explain why the essentialism-prejudice association is positive for some social categories (race, gender) and negative for others (sexual orientation, transgender identities). Primary source research (e.g., analyzing texts in the media or activists' websites for essentialist messaging for different social groups) and descriptive studies (asking representative samples explicitly about their knowledge of essentialist rhetoric for different groups) are some non-experimental avenues for future research. To experimentally test this social norm hypothesis, researchers could use a confederate to support an essentialist position (or not) for different social groups (e.g., race, gender, transgender people, and sexual minorities) and gauge the extent to which participants believe the confederate is prejudiced toward those groups.

Our data's contribution to understanding the essentialism-prejudice pathway is somewhat limited for a number of additional reasons. First, we cannot interpret our null results as evidence for the null hypothesis. Second, our manipulation checks revealed that our biological condition did not successfully increase people's biological essentialism, making our null results for biological essentialism especially inscrutable. However, our manipulation checks for universality did find that we successfully increased people's belief in universality essentialism. One reason

for this discrepancy may be that people are more familiar with biological essentialism (as suggested by Study 1, in which a majority of participants spontaneously offered biological essentialist explanations for what causes someone to be transgender), so the biological manipulation did not provide anything new. In contrast, perhaps people know less about how transgender people have existed throughout human history and across cultures, thus the universal condition may have provided more novel information. Another possible explanation is that our manipulation and corresponding visual were not strong enough. Future research could strengthen our manipulation by maybe including an active element, such as having participants write something based on the biological essentialism article, or read about less popular studies that may provide more novel information.

We did find some weak evidence for universality essentialism leading to positive attitudes toward transgender people (increase in openness to acquaint with a transgender person and a decrease in pathologizing transgender people), but no significant effect on explicit transprejudice measured via feeling thermometers. However, the specific pairwise comparisons failed to replicate (e.g., in Study 2a, the universality condition led to significantly less social distance compared to the biological condition, whereas in 2b the universality condition led to significantly less social distance compared to the control condition), though the universality condition, when significant, led to consistently more positive outcomes. Additionally, results from Study 1 on lay conceptions of transgender etiology may suggest that a biological essentialist perspective may actually be many people's baseline (i.e., control), blurring the conceptual delineation of our biological essentialism and control conditions, perhaps making the failure to replicate specific pair-wise comparisons less problematic. While mixed, these results are promising and suggest universality essentialism may be a fruitful area of future research as

well as political and social strategies for groups seeking to improve the marginalization of transgender people.

Lastly, we explored whether essentialism may be a post-hoc rationalization. While the literature has historically conceptualized the relationship of essentialism and prejudice as essentialism causing prejudice, we decided to test the opposite direction of causality after finding correlational evidence but no causal evidence for this pathway. However, we did not find any evidence for this hypothesis, suggesting that perhaps essentialism is a deeply-rooted, psychological way of thinking that develops early in life. Indeed, numerous studies in developmental psychology suggest children as early as preschool show signs of essentialist thinking (Gelman, 2004). Although not the primary aim of the present study, we did find evidence for imagined contact as an effective way of reducing transprejudice (as well as correlational evidence from Study 1 that personally knowing a transgender person predicted less prejudice), adding to previous research on contact-theory and transgender people (Walch et al., 2012).

There are also a few limitations across all five studies that limit the scope and interpretability of these findings. First, all participants were either university students or Mechanical Turk workers, so findings cannot be generalized to a broader population. University students tend to be more liberal than the average population (Kuerzleben, 2016) and Mechanical Turk workers may be especially susceptible to demand characteristics in order to qualify for additional surveys. Second, these studies took place during a time in which transgender rights and issues were at a crescendo in public discourse, which may have influenced the results because participants came into the studies with strong pre-existing attitudes and beliefs about transgender people and possibly ideas about essentialism. These pre-existing attitudes, possibly

catalyzed and primed by recent public discourse, may explain why some of the manipulations were unsuccessful (e.g., biological essentialism) – perhaps if conducted during an earlier time before transgender people and issues were widely talked about, people would have been more open to changing their etiological beliefs.

In summary, these studies provide a few key insights to our understanding of essentialism and prejudice toward transgender identities. First, correlations across 5 studies provide novel evidence that essentializing transgender identities is negatively associated with transprejudice, such that as essentialism increases, transprejudice decreases. Second, the causality of this correlation is unlikely, given that four studies (including replications) did not find evidence for causality in either possible direction, so future research should explore potential “third variables” like social norms. Third, universality essentialism was successfully manipulated (Study 2a and replicated in Study 2b), suggesting people’s universality essentialism beliefs about transgender identities may be more malleable than biological essentialism. Lastly, contact with transgender people (actual, as self-reported in Study 1) and imagined (experimentally induced in Study 4b) shows promise as a potential avenue for reducing transprejudice.

**Appendix A: Transgender Essentialist Beliefs Scale**

## Biological essentialism

Being transgender is caused by biological factors.

Being transgender is an innate, biologically-based quality.

Whether someone is transgender or not is determined by their biological makeup.

Being transgender probably has no biological basis. (Reverse-coded).

People who are transgender were born that way.

## Universality essentialism

Transgender people probably only exist in certain cultures. (Reverse-coded).

Transgender people have probably existed throughout human history.

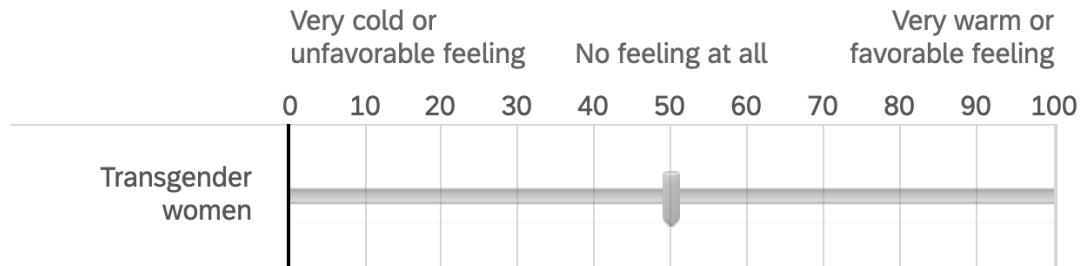
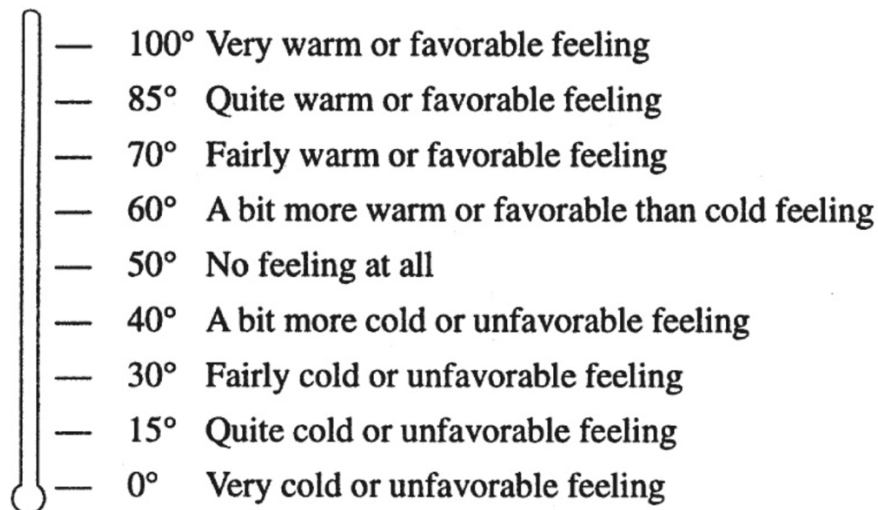
In all cultures there are people who consider themselves transgender.

The proportion of the population that is transgender is roughly the same all over the world.

It is only in the last century that transgender people have appeared in large numbers. (Reverse-coded).

### Appendix B: Transprejudice feeling thermometers

Imagine that your feelings about different groups could be measured on a thermometer, like the one below, ranging from 0 to 100 degrees. The higher the number, the more warmly or favorably you feel toward the group. The lower the number, the colder or less favorably you feel toward the group. Next, you will be asked how you feel about a number of groups. Please answer honestly based on your gut reactions.



[Scale repeated for transgender men, cisgender women, and cisgender men]

### **Appendix C: Definition of Transgender**

There are many ways to define transgender, but the definition we will use for the purpose of the rest of the survey is the following:

"A person who identifies with or expresses a gender identity that differs from the one which corresponds to the person's sex at birth." -- Merriam-Webster Dictionary

Transgender women were born males but deeply identify as women.

Transgender men were born females but deeply identify as men.

### **Appendix D: Biological Essentialism Article**

Excerpt from “Scientists Pinpoint Biological Underpinnings of Being Transgender”  
By Matthew Olson, July 19, 2016.

Research with twins has suggested a biological basis for being transgender. Social scientists have used twin studies to explore a variety of phenomena, including, for example, intelligence, obesity, and alcohol addiction. The beauty of twin studies is that they utilize a simple design. Researchers recruit fraternal (dizygotic) twins, who share 50% of their genes—the same percentage as any set of siblings—and identical (monozygotic) twins, who share 100% of their genes. When raised together within the same family structure, twins also share the same environment. Any differences, then, in the rates of similarity on a given trait found between fraternal and identical twin pairs can be attributed to their genetic material.

In one study, led by Dr. Milton Diamond at the University of Hawaii, pairs of identical and fraternal twins in which at least one individual was transgender were recruited. Dr. Diamond found that identical twins were 9 times more likely than fraternal twins to be transgender if their twin was also transgender. This result strongly suggests that being transgender is largely influenced by a person’s biology.

## Appendix E: Universality Essentialism Article

Excerpt from “Scientists Find That Being Transgender is Culturally Universal”

By Matthew Olson, July 19, 2016.

Research has suggested that transgender people have existed throughout history and cultures across the world. Social scientists study past and present human cultures through investigation of physical artifacts (e.g., excavating ancient ruins and burial sites) as well as observing and interviewing people. They study how human cultures differ from each other, as well as how they are similar. One commonality among most cultures throughout human history is the existence of a group of individuals who identify with a gender that is not aligned with their biological sex. For example, evidence of people who today might be described as transgender has been found in various past cultures, including Ancient Egypt and Rome.

Transgender people continue to exist today across cultures. In one study, led by Dr. Paul Vasey at the University of Lethbridge in Canada, individuals who identify with a gender that does not align with their biological sex were documented in Samoa. Dr. Vasey found that these individuals, known as “fa’afafine” in Samoa, appear in similar rates as transgender people in the US. Similar research has documented the existence of people who identify with a gender that does not align with their biological sex in Native American cultures, where they are known as “two-spirit” individuals, and in South Asia, where they are known as “hijras.” This research strongly suggests that transgender identities have existed across human cultures and throughout history.

### **Appendix F: Pathologizing Transgender People Scale**

Transgender people should seek help from doctors and psychologists to find a cure.

Being transgender is a mental illness.

There is something wrong with transgender people.

### **Appendix G: Social Distance Scale**

To what extent would you be willing to be friends with a transgender person?

To what extent would you be willing to let a transgender person babysit your children?

To what extent would you be willing to use the same bathroom as a transgender person?

To what extent would you be willing to let a transgender person be your child's teacher in school?

To what extent would you be willing to live in the same neighborhood with several transgender people?

### **Appendix H: Exemplar Condition**

[Picture of Janet Mock]

One successful transgender person is Janet Mock (above). Janet earned a Master's degree in journalism from New York University and has since become an accomplished TV correspondent on MSNBC and a New York Times bestselling author. She lives in New York City with her husband, photographer and filmmaker Aaron Tredwell, and their dog Cleo.

## Supplemental Materials

### Study 1 additional measures

How confident are you in your beliefs about what causes someone to be transgender? [1-Not at all confident, 7- Very confident)

People in American Society have put forth many different explanations or arguments for what causes someone to be transgender. You may have read or heard about many of these ideas from different sources, including magazine articles, television shows, political figures, celebrities, researchers, doctors, and other public figures. Please list as many of these explanations or arguments as you can. It's okay if you don't believe some of the reasons are true. We're just interested in the ideas that you think people in society have.

In your experience, which explanation or argument for what causes someone to be transgender is the most "politically correct?"

We are interested in learning about stereotypes. In the space below, please list as many stereotypes as you can about transgender women [OR: transgender men]. Please include all stereotypes that come to mind, even if you don't think they are true.

[1-Very strongly disagree, 7-Very strongly agree]

Being transgender is a choice.

Transgender people are the way they are because they were abused as children.

Transgender people are the way they are because they were neglected as children.

People who let their sons wear dresses and play with dolls cause them to be transgender.

Parents who let their daughters wear boys' clothes and play football cause them to be transgender.

Traditional two-parent households are less likely to have a transgender child.

Parents who don't model traditional gender roles are more likely to have a transgender child.

Transgender adults probably knew they were transgender when they were children.

Children can know they are transgender as early as kindergarten.

A child who feels that they are transgender should be allowed to live as the gender they feel they are.

Transgender people should seek help from doctors and psychologists to find a cure.

Being transgender is a mental illness.

There is something wrong with transgender people.

Transgender people should just try to fit in as best as they can in order to avoid being harassed.

If someone is bullied for being transgender, it's at least somewhat their fault.

To avoid being harassed or bullied, transgender children shouldn't be flamboyant about their gender identity.

Hurting someone because they are transgender should be considered a hate crime.

Companies should be allowed to not hire people because they are transgender.

Transgender people should use the bathroom that aligns with their biological sex.

Transgender women shouldn't be allowed to use women's restrooms.

Transgender men shouldn't be allowed to use men's bathrooms.

Public restrooms should include a "gender-neutral" bathroom for transgender people to use.

How much discrimination against transgender people do you feel there is in the United States?  
[1-None, 7 – A lot]

To what extent should schools educate children about transgender issues? [1-Not at all, 7-Very much]

[1-Not at all comfortable, 7- Extremely comfortable]

How comfortable would you feel dating a transgender person?

How comfortable would you feel having sex with a transgender person?

Would you date a transgender person? [yes, No, I don't know]

Would you have sex with a transgender person? [Yes, No, I don't know]

Imagine you go on a date with someone and they reveal that they are transgender. To what extent would you feel [1-Not at all, 7- Very much]...

...angry?

...excited?

...disgusted?

...embarrassed?

...neutral?

...deceived?

...happy?

Please list as many famous transgender people you are aware of:

**Additional demographics:**

Where do you currently live? (City, State)

Which of the following best describes your race/ethnicity? Please check all that apply.

[White/Caucasian, Latino/Hispanic, Black/African-American, Native American, Asian American, Other:]

What is your religious affiliation?

How religious do you consider yourself? [1-Not at all religious, 7-Extremely religious]

How would you describe your political affiliation? [Democrat, Republican, Libertarian, Green Party, Independent, Other:]

Are you married? [Yes/No]

Do you have any children? [No, Yes (please indicate how many males, females, and other:)]

Please indicate your household income: (Less than \$20,000, \$20,000-\$40,000, \$40,000-\$60,000, \$60,000-\$80,000, \$80,000-\$100,000, \$100,000-\$120,000, \$120,000-\$150,000, \$150,000-\$200,000, \$200,000-\$250,000, More than \$250,000]

Occupation:

How close are you to the transgender person you know best? [1-Not at all close, 7-Very close]

### Transprejudice analyses by gender

Linear regression results for transprejudice (toward transgender women)

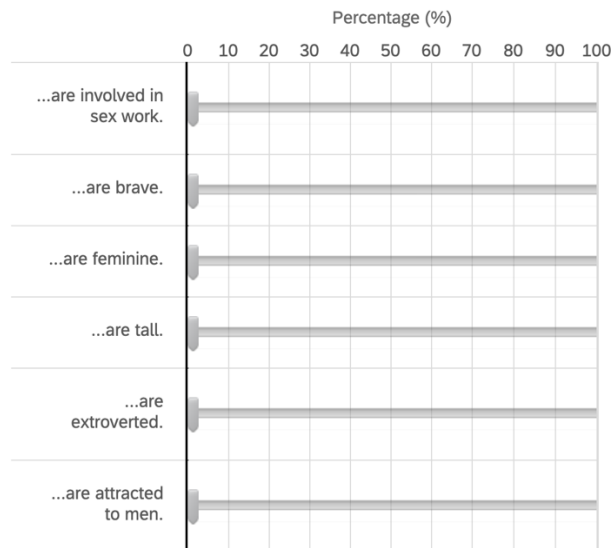
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>t</i>	<i>p</i>	Fit
Intercept	73.39	12.57		5.84	.001	
polOri	-6.83	1.73	-.25	-3.94	.001	
knowTrans	10.63	4.18	.14	2.54	.012	
age	.02	.15	.01	.17	.866	
gender	-2.45	3.49	-.04	-.70	.482	
biological	-4.67	1.33	-.26	-3.52	.001	
universality	-4.49	1.66	-.20	-2.71	.007	
						$R^2 = .393$
						$F(6, 215) = 23.16$

## Linear regression results for transprejudice (toward transgender men)

	<i>b</i>	<i>SE</i>	<i>B</i>	<i>t</i>	<i>p</i>	Fit
Intercept	41.19	12.31		3.35	.001	
polOri	-4.79	1.70	-.20	-2.82	.005	
knowTrans	10.13	4.10	.15	2.47	.014	
age	-.17	.14	-.08	-1.23	.221	
gender	5.04	3.42	.09	1.48	.141	
biological	-2.33	1.30	-.15	-1.79	.074	
universality	-3.77	1.62	-.19	-2.32	.021	
						$R^2 = .239$
						$F(6, 215) = 11.25$

## Study 2a and 2b additional measures

Please estimate the percentage of **transgender women** (people born as biological males but deeply identify as women) who...



(repeated for transgender men)

[-Very strongly disagree, 7-Very strongly agree]

People are either masculine or feminine.

Gender is a spectrum.

Transgender women should try and look as feminine as possible.

Transgender men should try and look as masculine as possible.

### Study 2 analyses controlling for political orientation

**Manipulation check.** There was no significant difference in biological essentialist beliefs between the control condition ( $M = 4.22$ ,  $SD = 1.20$ ) and the biological essentialism condition ( $M = 4.46$ ,  $SD = 1.19$ ),  $F(1, 193) = .947$ ,  $p = .332$  in Study 2a or Study 2b ( $M_{\text{control}} = 4.29$ ,  $SD = 1.24$ ,  $M_{\text{biological}} = 4.27$ ,  $SD = 1.30$ ;  $F(1, 228) = .01$ ,  $p = .934$ ), suggesting the article about biological essentialism did not successfully change people's biological essentialist beliefs. Participants' endorsement of universality essentialism beliefs were significantly higher in the universality condition ( $M = 5.25$ ,  $SD = .92$ ) compared to the control condition ( $M = 4.66$ ,  $SD = .97$ ),  $F(1, 193) = 20.43$ ,  $p < .001$  in Study 2a as well as in Study 2b ( $M_{\text{universality}} = 5.07$ ,  $SD = .94$ ,  $M_{\text{control}} = 4.61$ ,  $SD = 1.08$ ;  $F(1, 228) = 7.75$ ,  $p = .006$ ), suggesting the universality article successfully increased people's endorsement of universality essentialist beliefs.

#### Essentialism and prejudice.

*Study 2a.* Overall, there were no significant differences between the three conditions,  $F(2, 292) = .479$ ,  $p = .620$  and post-hoc comparisons did not reveal any significant pairwise comparisons, suggesting the experimental manipulations (biological and universality essentialism) had no effect on transprejudice.

*Study 2b.* Similar to Study 2a, there were no significant differences between the three conditions,  $F(2, 293) = .70$ ,  $p = .499$  and post-hoc comparisons did not reveal any significant pairwise comparisons, suggesting the experimental manipulations (biological and universality essentialism) had no effect on transprejudice.

#### Essentialism and pathologizing.

*Study 2a.* Overall, the omnibus F-test suggested there was at least one significant

difference between the three conditions,  $F(2, 292) = 3.74, p = .025$ . Post-hoc analyses revealed that participants in the biological condition pathologized transgender people significantly more ( $M = 2.09, SD = 1.44$ ) than those in the universality condition ( $M = 1.75, SD = 1.23$ ),  $p = .007$ . No other pairwise comparison was significant.

*Study 2b.* Overall, there were no significant differences between the three conditions on pathologizing,  $F(2, 294) = .89, p = .410$ . Post-hoc analyses revealed no significant pairwise comparisons, suggesting the experimental manipulations had no effect on pathologizing.

## Chapter 5

### General Discussion

Across three papers, this dissertation uses unique and timely moments in social history – contemporary discourse and activism against sexual violence, transgender essentialism and prejudice, and the 2016 U. S. Presidential election to investigate the effect of social change – and thus changes in social hierarchy – on people. In Chapter 2, the effect of self-made social change (e.g., online activism) was investigated on subsequent behavior. When participants were randomly assigned to engage in online activism by flagging sexist online comments, they expressed feeling significantly better about themselves – an indicator of moral credentialing – and this increase in moral credentialing was associated with less effort in a subsequent problem-solving task on brainstorming solutions to combat sexual assault. This mediated pathway was significant for both men and women, suggesting that perhaps people were more motivated to act for moral credentialing rather than actually instigating social change. Alternatively, participants' behavior may be explained by status-legitimizing beliefs or bias toward the status quo – while not specifically tested, perhaps some participants (more likely men) refrained from additional effort as a means to uphold the existing quo and/ or protect their status while others (more likely women), refrained from additional effort as a means to justify the system (Jost & Banaji, 1994; Wilkins, Hirsch, Kaiser, & Inkles, 2017; Wilkins & Kaiser, 2014). In Chapter 3, institutional change was investigated in the form of the 2016 U.S. Presidential Election, where Clinton's defeat to Trump represented a step backwards for women's rights. In a within-subject, longitudinal design, Clinton supporters increased identification with their gender and political identities and related belief systems after the election. This finding suggests that Clinton supporters may have perceived Clinton's loss as a threat to their identity, and reacted to this

change in social hierarchy by affirming their identities. In Chapter 4, change in social hierarchy was investigated in the form of visibility change: for a group that is increasingly visible (transgender people), what is the relationship between emerging attitudes toward that group and beliefs about the universality and innateness of that group's identity? While correlational data consistently suggested that endorsing essentialism was associated with less transprejudice, experimental evidence was mostly null. However, some experimental findings suggesting that one type of essentialism (universality) could be manipulated and associated with a decrease in transprejudice, and in addition to the correlational data, suggests the way people classify other social groups can potentially influence their attitudes toward them.

## **Implications**

### ***The self-serving ego***

Together, these data shed light on how people react to social change in hierarchies often in self-serving ways that may protect the self at the individual level but may have negative consequences at the societal level. For example, Clinton supporters whose identities were threatened after her historic defeat reacted by affirming their group identities, which at the individual level may serve as an ego-enhancing strategy (Derks, Scheepers, Van Laar, & Ellemers, 2011; Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007), but at a national level suggests increased polarization, making a more difficult climate for bipartisan productivity. While some disagreement and a diversity of opinions are conducive to a productive society, if groups diverge too far in ideology this may result in a dampened ability to compromise or even more extreme outcomes like violence and civil war, as seen throughout history when an ideological faction becomes so extreme it becomes compelled to use aggression to meet its demands. In Chapter 2, online activists who felt morally credentialed subsequently disengaged

from additional effort toward addressing sexual violence, suggesting that people may have initially acted to be morally credentialed, which may serve a self-serving desire to satisfy egalitarian norms (Crandall, Eshleman, & O'Brien, 2002; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002; Gomez & Kaiser, 2019). Thus, online activism may satisfy self-serving, ulterior motives at the individual level, and when this leads to a reduction in subsequent activism, may mean less progressive change is ultimately realized at the societal level. Lastly, essentialist beliefs about transgender people may be associated with less transprejudice, but some research suggests essentialist beliefs may serve an individual's belief in a just world – an extension of “only bad things happen to bad people” to include, “only bad things happen to other people” (Brescoll, Uhlmann, & Newman, 2013). Thus, essentialism may reduce transprejudice and satiate an individual's desire to live in a just-world, but at the societal level, increased essentialism could have potential negative consequences like increasing the perceived differences between groups. These self-preserving tactics may protect any individual self from various external threats, but sacrifice the livelihood of the social group in the process.

### ***The impossibility of “direct” replications***

Across three papers, this dissertation uses unique moments in social history – contemporary discourse and activism against sexual violence, the 2016 U. S. Presidential election, and transgender essentialism and prejudice – to investigate the psychological effect of social change. By prioritizing the study of timely social issues, this body of work puts Gergen's (1973) “social psychology as history” into methodological practice. This approach, compounded with the findings that suggest people's psychology are affected by social change, from engaging in online activism, to losing a political election, to reading a scientific news article, provides support to Gergen's (1973) thesis that psychology should be interpreted more like history and

less as a science. Taking Gergen's "social psychology as history" hypothesis to the extreme would suggest that social psychological findings can never be truly replicated, because people—and their data – are bound by their social, political, and cultural context within a specific moment in time.

During social psychology's "replication crisis," where a number of theories previously seen as human universals have struggled to replicate, many pundits of the field have turned to blame the field's methods (Nelson, Simmons, & Simonsohn, 2018). Indeed, methods could be responsible and should be improved. Psychology should continue using rigorous scientific methods, but the traditionally scientific endeavor of generating universal truths about the nature of the world may be impossible when people's behavior can change from just a few clicks of their mouse or from reading a brief online news survey. These findings suggest that "direct" replications may be a misnomer because the majority of direct replications may replicate the methods but not the historical, social, and cultural context, ultimately resulting in a conceptual replication (Crandall & Sherman, 2016; Stroebe & Straack, 2014). Additionally, technological advances like the Internet can speed up the dissemination of information as well as create more and new opportunities for behavior, which may accelerate psychological fluctuations within people. (Gergen, 1991; Gomez & Kaiser, 2019).

### **Limitations**

A number of general limitations across all three chapters should be taken into consideration when interpreting these results. First, the majority of this work was conducted during the midst of the "replicability crisis," and while some suggestions were incorporated (e.g., internal replications across all chapters, pre-registration in Chapters 2 and 3), some of this work might not meet today's or future standards for replicability. Namely, the majority of analyses were done post-hoc (often

due to the nature of studying contemporary events in real-time, like when we had to pivot our research questions and analyses when Clinton did not win the 2016 Presidential Election). Thus, a majority of this work should be interpreted as exploratory and not confirmatory, because of deviations from our pre-registrations (or not having one at all, like in Chapter 4). Another limitation is our focus on majority-group members, a broader weakness to psychology as a field that generally relies on convenience sampling of university students. Psychological data without a diverse sample is inherently limited in terms of generalizability, as well as perpetuating the lack of marginalized voices in research (Henrich, Heine, & Norenzayan, 2010; Shelton, 2000). Lastly, while this work encompasses various forms of social change (self-made, institutional, and visibility) it does not directly test the effect of these sources of change. Future work should consider how the source of social change amplifies or dampens the psychological impact on individuals. For example, in American contexts, self-made change may be particularly effective because of the importance of independence and autonomy (Markus & Kitayama, 1991).

### **Future Directions**

The multitude of degrees of freedom in constructing the studies of this dissertation (e.g., which social issues to study, interpreting an array of results through a social hierarchy-threat perspective), though based on previous literature, are nonetheless decisions made by the authors and their own subjectivities. Basic assumptions should be empirically tested by directly giving participants a chance to express their opinions and experiences outside of the confines of an experimental study. For example, diary research could be conducted to follow people across time to better understand how lay people interpret social change, where and how they encounter such change, and how it affects them.

Another way to extend this work is to continue the applied approach, which prioritizes the study of timely social issues, to additional phenomena with the goal of cataloging human psychology as history as opposed to creating foundational tenets (Gergen, 1973). For example, currently the United States (and world) is experiencing the largest pandemic in over 100 years, upending our way of life and threatening the economy and livelihood of millions of people (Kolata, 2020). There have been other pandemics, like the Spanish Flu, and there will likely be more in the future, but nothing will ever be like COVID-19, because, just like the name suggests, it is bounded to a particular time in human history (Kolata, 2020). COVID-19 is causing rapid social change, from increasing xenophobia and racism toward Asian Americans, to increasing tensions between an aging population and younger generations, to exposing enormous gaps between those who are protected by the ability to work remotely and those who are not (Glenn, 2020; Hoffower, 2020; Scheiber, Schwartz, & Hsu, 2020). Researchers should seize the opportunity to explore these phenomena in real-time, ideally with within-subject, longitudinal designs, with the goal of cataloging human psychology during a historic event that will undoubtedly have long-term social, financial, and political consequences. However, just as psychological data collected in the past may not be able to be directly replicated, psychological insights from the past cannot be trusted to accurately understand the present or predict the future. For example, the psychological impact of the Spanish Flu will not be the exact same as COVID-19, and the psychological impact of COVID-19 will not be the exact same as future pandemics. This limitation does not mean to forgo psychological research – just because theoretically two instances in history are not identical does not mean the extent to which there is overlap, and thus lessons to be learned to understand the present and predict the future, is useless. Instead, researchers should continue steadfast in collecting as much (and as diverse) psychological data

as possible, so that future scholars and policy makers alike can interpret the data like how some argue to interpret the Constitution as a living document: psychological data of the past can be versatile in its usefulness as a way to spur the exercise of hypotheticals and ultimately, additional research. That is, insights from the past cannot tell us what will happen, but what might happen, and it is up to the researcher to combine these insights from the past with their expertise on the zeitgeist of the present to make informed predictions of the future.

One implication of this work is that social change is almost omnipresent in our increasingly digital lives. Theoretically, people may be exposed to various signals and cues that there are changes in social hierarchy in a single day, from participating in online activism in the morning, to reading a scientific news article about evidence for a biological basis of transgender people in the afternoon, to following the results of a political election in the evening. However, it remains unclear whether this theoretical volatility is perceived as normal to participants. For example, future studies could expose people to multiple changes in social hierarchy in succession (e.g., providing cues that a low-status group gained status, then lost status) and measure people's expectations (e.g., do they think this group would then gain status, indicating an expectation of a sinusoidal pattern of social change?). This work could help elucidate the extent to which people react to social change in hierarchies out of system-justifying beliefs.

## **Conclusion**

Collectively, these papers demonstrate human psychology's remarkable ability to cope with a volatile social world. By embracing applied methodology, this work sheds light on people's attitudes, identities, and behaviors in the context of urgent social issues. While this work contributes to multiple theoretical perspectives such as social identity threat and psychological essentialism, its most significant contributions are the implementation of

psychology as history, providing a methodologically rigorous account of its participants' psychology to a growing body of applied literature that can inform future researchers and policy makers about how past social issues can inform future ones. Finally, a sobering interpretation of how participants reacted to multiple types of changes across multiple social groups: people may react to changes in hierarchy in ways that serve to protect and maintain the self, potentially at the expense of their social groups and society more broadly.

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