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*University of Northern Iowa*

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THE MORAL MOTIVATIONS OF NEGATIVE ATTITUDES TOWARD  
TRANSGENDER PEOPLE

An Abstract of a Thesis

Submitted

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

Hailey Annette Hatch

University of Northern Iowa

July 2018

## ABSTRACT

Transgender individuals are at higher risk for experiencing sexual assault and police brutality than the general population (National Coalition for Anti-Violence Programs, 2013). These brutal acts are likely the result of negative attitudes. Negative attitudes toward transgender people are related to individual differences in psychological authoritarianism, political conservatism, religiosity, and low personal contact with sexual minorities (Norton & Herek, 2013). This study explored underlying moral mechanisms that may also contribute to negative attitudes toward transgender people – specifically mechanisms involving generalized disgust (i.e., purity) and harm. Moral foundations theory (Haidt & Graham, 2007) suggests that disgust is the underlying mechanism that contributes to negative attitudes toward moral issues, whereas the theory of dyadic morality (Gray, Young, & Waytz, 2012) suggests that perceived harm is the primary underlying mechanism. I tested these two models by priming participants with an identity (i.e., male/female transgender person, atheist, first-generation college student) via a scholarship essay. Participants from three samples (online crowdsourcing workers, Midwestern college students, and Southeastern college students) completed measures assessing generalized disgust (via disgust sensitivity) and harm (via belief in a dangerous world) and social distance toward the applicant. Participants also indicated how much disgust, harm, and anger they felt toward a variety of groups and completed measures of religiosity, moral foundations, and transgender attitudes. There were no significant differences between conditions on elicited generalized disgust or harm. Participants reported more desired social closeness to the first-generation college student and less to

the atheist. Across all samples, transgender people were perceived as more disgusting and harmful and elicited more anger than first-generation college students, but were perceived as less disgusting and harmful and elicited less anger than substance abusers. Negative attitudes were also related to a lack of distinction between sex and gender, lower amounts of contact with the transgender community, negative emotions, the moral foundations, political conservatism, and religious fundamentalism. Even in samples without high levels of explicit prejudice toward transgender people, some prejudice and discrimination seem to exist. Increasing contact and exposure to the community and educating people on the distinctions between sex and gender may help improve these attitudes.

*Keywords:* morality, moral foundations theory, dyadic morality theory, transgender

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This Study by: Hailey Annette Hatch

Entitled: The Moral Motivations of Negative Attitudes toward Transgender People

has been approved as meeting the thesis requirement for the

Degree of Master of Arts in Psychology

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## DEDICATION

For my daughter, Jiraiya Sage Watson-Hatch. You are my constant motivation for everything I do. I could not have done any of this without you. I love you always, J.



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## CHAPTER 1

### INTRODUCTION

#### The Moral Motivations of Negative Attitudes toward Transgender People

"We are all assigned a gender at birth. Sometimes that assignment doesn't match our inner truth, and there needs to be a new place – a place for self-identification. I was not born a boy, I was assigned boy at birth. Understanding the difference between the two is crucial to our culture and society moving forward in the way we treat - and talk about - transgender individuals ... In today's globally connected and ever-diversifying world, culture is now more fluid and more flexible than ever – and so too should be our understanding and perception of gender." (Rocero, 2014).

#### Terminology

Sex assigned at birth is the sex that a medical professional assigns a child when they are born (i.e., male, female, intersex; National LGBT Health Education Center, 2016). Gender identity is how someone feels about themselves in terms of gender (i.e., man, woman, a mixture or neither of these; Human Rights Campaign, 2017). A cisgender person is someone whose gender identity aligns with their sex assigned at birth, whereas a transgender person is someone whose gender identity does not align with their sex assigned at birth (Human Rights Campaign, 2017).

#### Transgender Experiences

Transgender people make up an estimated 0.6% of the United States population (Flores, Herman, Gates, & Brown, 2016), but they are more likely to have negative experiences compared to cisgender people (National Coalition for Anti-Violence Programs [NCAVP], 2013). Little data on hate crimes toward transgender people exist; however, available data suggest that hate crimes based on gender identity made up 2% of hate crimes in 2016 (Federal Bureau of Investigation, 2016), which is four times what

would be expected given the population size of transgender people. Other data available from phone calls and hotlines suggest that transgender people make up the majority of hate violence homicides (NCAVP, 2013). The FBI data may underreport the number of hate crimes that occur based on gender identity due to a lack of trust of police among transgender people (Lombardi, Wilchins, Priessing, & Malouf, 2001). Transgender people are seven times more likely than cisgender people to experience violence from law enforcement officials (NCAVP, 2013), which likely contributes to this distrust.

People with transgender and other gender nonconforming<sup>1</sup> identities are also exposed to having their identities questioned in terms of federal laws and legislation. There are currently 33 states that do not have any existing hate crime laws covering gender identity (Movement Advancement Project, 2017), which suggests that many jurisdictions may not be concerned with violence against transgender people. There are also 30 states in which there are no protections for transgender people in employment settings, which suggests that transgender people can be fired in these states simply for identifying as transgender (Movement Advancement Project, 2017). One recent example of harmful legislation includes the “bathroom bills.” The so-called “bathroom bill” stated that people must use the restroom that coincides with their legal sex (i.e., the sex assigned on their birth certificate), which means that transgender people who have not had a legal change of their sex on their birth certificate must go into a bathroom that does not align with their gender identity. In 2016, there were 19 states that considered bathroom bills

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<sup>1</sup>It is important to acknowledge that not all gender nonconforming people identify as transgender and not all transgender people identify as gender nonconforming.

(National Conference of State Legislatures, 2017). To date, the only state to have this legislation pass is North Carolina (House Bill 2, 2016); however, this legislation was repealed via North Carolina's House Bill 142 in March 2017 (Hanna, Park, & McLaughlin, 2017). Although House Bill 2 was repealed, House Bill 142 still allows discrimination against transgender people in that there are now no existing laws regarding bathrooms and transgender people in North Carolina (Hanna et al., 2017).

This prejudice and discrimination can affect the mental health and well-being of transgender people (Miller & Grollman, 2015). Transgender people who experience discrimination are more likely to engage in drug and alcohol use, smoke cigarettes, and attempt suicide (Miller & Grollman, 2015). Another study also suggested that transgender people are at higher risk for depression and attempted suicide, with 41% of the transgender population reporting attempted suicide compared with approximately 5% of the general population (Haas, Rodgers, & Herman, 2014).

Thus, there is clearly prejudice and discrimination toward transgender people that can negatively impact their well-being and mental health. The current study examined two possible theoretical approaches that may help explain these negative attitudes toward transgender people. Moral foundations theory (MFT; Haidt & Graham, 2007) states that people may hold negative attitudes toward sexual orientation and gender identity minorities due to feelings of disgust (Inbar, Pizarro, & Bloom, 2009; Schnall, Haidt, Clore, & Jordan, 2008). The theory of dyadic morality (TDM; Gray, Young, & Waytz, 2012; Schein, Ritter, & Gray, 2016) states that the perception of harm mediates the relationship between disgust and these negative attitudes, suggesting that harm is the

underlying mechanism that contributes to negative attitudes toward sexual orientation and gender identity minorities. In the next sections, I discuss moral attitudes more generally and further discuss morality theories that may be used to explain negative attitudes toward transgender people.

### Moral Attitudes

Where individuals place their moral authority (i.e., what intuitions drive their moral decision making) can influence how that individual feels toward moral issues, such as sexual orientation and gender identity minorities. A secular definition of morality suggests that morality is “an informal public system applying to all rational persons, governing behavior that affects others, and includes what are commonly known as the moral rules, ideals, and virtues and has the lessening of evil or harm as its goal” (Gert, 1998, p. 13). For some people, morality may also be based on religious principles and viewed as synonymous to those religious principles (Bloom, 2012).

Attitudes differ in their type, and not every attitude is considered morally relevant. For instance, Skitka (2010) and Turiel (2002) distinguish between the different attitude types of preferences, normative conventions, and moral imperatives. If a person’s attitude toward something is based on preference, their<sup>2</sup> attitude is not likely to be influenced by their moral beliefs, but on whether they like that object (e.g., wearing a yellow shirt vs. blue shirt; Skitka, 2010; Turiel, 2002). Normative conventions focus more on community norms and laws surrounding that issue (e.g., speeding; Skitka, 2010; Turiel, 2002). Moral

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<sup>2</sup> To be more inclusive in my research, I will be using the pronouns they/them/theirs as singular pronouns throughout my paper. Using only she/her/hers and he/him/his pronouns is exclusive of people with gender nonconforming identities who identify outside of the male/female gender binary.

imperatives, in contrast, are a reflection of the belief of something being right or wrong because that is the way that it is and nothing can change that belief (Skitka, 2010; Turiel, 2002).

Moral issues may also be viewed as “cultural war issues” (Koleva, Graham, Ditto, Iyer, & Haidt, 2012, p. 2). Cultural war issues are issues where stances tend to be strong and involve a belief system that pits people on one side of the issue against people on the other side of the issue. A few examples of these “cultural war issues” include same-sex marriage<sup>3</sup>, euthanasia (i.e., physician-assisted suicide), cloning, pornography, abortion, having a baby outside of marriage, and rights of transgender people.

In the next sections, I will describe two theories, moral foundations theory (Haidt & Graham, 2007) and the theory of dyadic morality (Gray et al., 2012), that propose a link between moral attitudes and emotional responses to those believed to violate moral rules.

### Moral Foundations Theory

Moral Foundations Theory (Haidt & Graham, 2007) developed from the Social Intuitionist Model (Haidt, 2001). The Social Intuitionist Model (SIM; Haidt, 2001) states that people first respond to moral judgments via an automatic process, which is then followed by an engagement in moral reasoning via post hoc rationalization. For example, in a classic study, people indicated that consensual incest, which is presumed to be a harmless scenario, was morally wrong; however, when they were pressed about their

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<sup>3</sup> Although same-gender is more inclusive of transgender identities than same-sex, I am using the term same-sex based on previous research and potential differences in attitudes toward these two concepts.

rationale, they were “morally dumbfounded” (Haidt, Bjorklund, & Murphy, 2000). Moral dumbfounding is a phenomenon that occurs when one relies on their emotional intuitions for moral judgements, rather than on reasoning (Haidt et al., 2000). This phenomenon suggests that emotional reactions guide judgements independent of other reasons.

The social intuitionist model (SIM) does not address which specific intuitions occur during this automatic moral reasoning process; therefore, moral foundations theory expanded SIM by addressing the different intuitions. Moral foundations theory (MFT; Haidt & Graham, 2007) proposes that there are at least six<sup>4</sup> moral foundations that help examine which specific intuitions guide moral beliefs and decision making. The five central moral foundations are: harm/care, fairness/reciprocity, ingroup/loyalty, authority/respect, and purity/sanctity. The harm foundation addresses the idea of compassion and not wanting others to suffer or be harmed (Haidt & Graham, 2007). The fairness foundation addresses one’s entitlement to their individual rights. The ingroup foundation addresses loyalty to one’s own group (e.g., country, church, family). The authority foundation addresses one’s obedience to authority leaders (e.g., religious leader, political leader). Lastly, the purity foundation addresses the purity of the body (via the concept of disgust) and is based on evolutionary roots in disease avoidance (Haidt & Graham, 2007; Oaten, Stevenson, & Case, 2009).

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<sup>4</sup> The sixth moral foundation is liberty/oppression and will not be discussed due to the foundation being considered mostly relevant for libertarians (Iyer et al., 2012).

Groups tend to differ on the foundations they emphasize. For example, the moral foundations have been used in political psychology to provide information on the differences between political liberals and conservatives on the moral foundations. Political liberals tend to emphasize the harm and fairness foundations (i.e., individualizing foundations), whereas political conservatives tend to emphasize the ingroup, authority, and purity foundations (i.e., binding foundations; Graham, Haidt, & Nosek, 2009).

The purity foundation is one of the most significant predictors of attitudes toward moral issues (Koleva, Graham, Ditto, Iyer, & Haidt, 2012), which may be because the purity foundation is uniquely related to feelings of moral disgust (Horberg, Oveis, Keltner, & Cohen, 2009). Inducing disgust in various ways (e.g., bad smells, working in disgusting rooms) leads to an increase in ratings of the severity of moral judgments (Schnall, Haidt, Clore, & Jordan, 2008). Across three studies, different types of disgust (i.e., feelings of disgust, induced disgust, trait disgust) predicted negative attitudes toward purity-related concerns, but not other moral violations (i.e., justice, harm; Horberg et al., 2009), which suggests that disgust may be uniquely related to purity concerns. Additionally, three studies examining emotions associated with purity violations found that there was an increase in reported feelings of disgust but not anger in response to a taboo breaking scenario (i.e., eating human skin), which is further suggestive of the link between purity and moral disgust (Gutierrez & Giner-Sorolla, 2007).

Disgust also mediates the relationship between picture-induced feelings of harm and disgust (i.e., abortion pictures) and moral conviction (Wisneski & Skitka, 2017),

which is an attitude that is “experienced as a unique combination of factual belief, compelling motive, and justification for action” (Skitka, Bauman, & Sargis, 2005, p. 897). In one study (Wisneski & Skitka, 2017), the researchers primed participants with disgusting (e.g., dirty toilet), emotionally neutral (e.g., office chair), and abortion (e.g., aborted fetuses) pictures and then measured harm, disgust, and anger as potential mediators between the abortion prime and abortion moral conviction. Disgust (and not harm or anger) mediated the relationship between the abortion prime and moral conviction. This result provides further support that disgust makes an independent contribution to attitudes held toward at least some moral issues.

Many cultural taboos invoke moral disgust, such as foods (e.g., meat; Fessler & Navarrete, 2003) and sexual acts (e.g., gay men/lesbian women, consensual incestual sexual relationships; Haidt et al., 2000; Inbar et al., 2009). Feelings of disgust relate to negative attitudes toward gay men (Inbar et al., 2009), which suggests that disgust may also be linked to negative attitudes toward transgender people. Additionally, bodily violations (e.g., sexual taboos) produce stronger feelings of disgust than other emotions (e.g., anger; Russell & Giner-Sorolla, 2013), which also suggests that disgust may be linked to negative attitudes toward transgender people due to the possible perception of a transgender person as a sexual taboo.

### Theory of Dyadic Morality

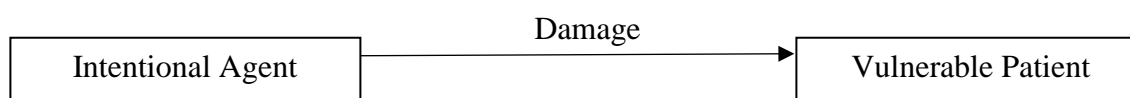
The theory of dyadic morality (TDM; Gray et al., 2012) is similar to MFT in that it states that there is an automatic process that occurs during moral judgments; however, TDM differs from MFT in that it states that the perception of harm mediates the



relationship between disgust and attitudes toward moral issues. The theory of dyadic morality suggests that moral judgments occur based on a “combination of norms, affect, and perceived harm” (Schein & Gray, 2017, p. 24). Norms are the beliefs regarding what people should or should not do based on rules or experiences (Schein & Gray, 2017). The negative affect is typically a consequence of norm violations and focuses on the emotion that is elicited from a violation (Schein & Gray, 2017). Perceived harm aims to distinguish between what is considered “wrong” versus what is considered “morally wrong” because the perception of harm predicts whether or not something is considered morally wrong (Schein & Gray, 2017). In TDM, perceived harm is viewed as a continuum and is more “subjective, intuitive, and pluralist” (Schein et al., 2016, p. 2) than the perception of harm in MFT (Haidt & Graham, 2007), which examines harm as something that is more objective and physically direct. Although norm violations and negative affect can both occur independent of perceived harm, the perception of harm is likely to contain both of these pieces of content (Schein & Gray, 2017).

TDM states that there has to be a “perceived suffering seen to be caused intentionally by another agent” for something to be viewed as morally relevant (Gray et al., 2012, p. 208; Figure 1 for model). TDM is based on the dyad of the “intentional moral agent” and a “suffering moral patient,” which suggests that there must be the perception of the intention to cause harm in some way to another (Gray et al., 2012, p. 101). The intentional moral agent is typically viewed as the person or object that is the perpetrator of the harm or damage that is done to the suffering moral patient, who is typically viewed as the recipient of the harm or damage.

This perceived harm can occur in various types of situations, including situations where some researchers would suggest that harm has been removed (e.g., disgusting ones; Gray et al., 2012). TDM (Gray et al., 2012) suggests that the “harmless” scenarios that are used in SIM and MFT research (Gray et al., 2014, p. 1602; Haidt & Graham, 2007; Haidt et al., 2000) and that are supposed to present a scenario in which all harm has been removed may still be perceived as harmful to some people (Gray, Schein, & Ward, 2014). For instance, the example of two siblings engaging in consensual protected sex (Haidt et al., 2000) is one that has been used in which all aspects of objective harm are said to be removed from the scenario (i.e., the siblings use birth control and condoms). However, TDM (Gray et al., 2012) suggests that even if you remove all aspects of objective harm, you cannot take away the perception of harm because that invalidates how participants view the situation. For example, even though researchers tell participants that all objective harm is taken out of the scenario, participants could still believe that there may be harm to society, the soul, or potential offspring.



*Figure 1.* A model of dyadic harm based on Schein and Gray (2017).

The perception of harm can also occur in situations that are based on the purity of the body and disgust. The perception of harm mediates the relationship between disgust and attitudes toward moral issues (Gray et al., 2012). Further, people were more likely to recall harm-related words than purity or loyalty-related words when describing moral concerns and were also more likely to associate violations of purity and loyalty with

perceived harm than with impurity (Schein & Gray, 2015, Study 7). These results provide further support for TDM (Gray et al., 2012) because they suggest that purity (and even loyalty) concerns are viewed through a harm-based lens.

According to TDM, if same-sex relationships are perceived as morally wrong, they are also viewed as causing suffering (Schein et al., 2016; Turiel, Hildebrandt, & Wainryb, 1991). In support of this notion, perceived harm mediated the relationship between feelings of disgust and gay marriage, sexual acts (e.g., anal sex), and religious blasphemy (Schein et al., 2016). The perceived harm in these controversial issues may also be present for some people when perceiving transgender people, such as instances with the “bathroom bill.” People may be viewing transgender people as pedophiles out looking to harm their children, when in actuality this is not the case. These perceptions of harm may have been influenced by ad campaigns that suggested that anyone (including sex offenders) would be able to go into restrooms and harm children legally under this bill (Holden, 2015).

### Summary

Moral foundations theory (Haidt & Graham, 2007) and the theory of dyadic morality (Gray et al., 2012) both suggest that there is an intuitive automatic process that occurs with generalized feelings in response to moral issues; however, the two theories differ in their focus on the specific mechanism driving motivations for negative attitudes. MFT focuses on the automatic response of disgust, whereas TDM emphasizes perceived harm. More specifically, MFT predicts that disgust is the driving motivator for negative attitudes toward transgender people, whereas TDM predicts that harm is the driving

motivator for negative attitudes toward transgender people. Regardless of which feelings underlie these negative attitudes, there are several individual difference variables that predict them. The next section focuses on these general predictors of attitudes toward sexual orientation and gender identity minorities.

### Predictors of Negative Attitudes toward Sexual Orientation and Gender Minorities

Sexual orientation minorities (e.g., gay men, lesbian women) may provoke negative feelings associated with morality (Haidt & Hersch, 2001). Therefore, transgender people's identities may be considered a moral issue because people view transgender people as similar to (or worse than) sexual orientation minorities (Nagoshi et al., 2008; Norton & Herek, 2013). Indeed, homophobia and transphobia are correlated with one another, suggesting that these two concepts are viewed similarly (Nagoshi et al., 2008). Negative attitudes toward sexual orientation and gender identity minorities are predicted by similar rater individual differences, such as gender, political orientation, culture, and religiosity, as well as gender of the target (Evans & Chapman, 2014; Hatch, 2016; Herek, 2000; Nierman, Thompson, Bryan, & Mahaffey, 2007; Whitehead & Baker, 2012; Whitley & Lee, 2000). In the next section, I review research examining the relationship between these variables and attitudes toward sexual orientation and gender identity minorities.

The gender of the rater is related to attitudes toward sexual orientation minorities. Men<sup>5</sup> tend to be less accepting of same-sex relationships than women (LaMar & Kite,

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<sup>5</sup> It is not clear whether the researchers listed included gender identity options outside of the gender binary or considered their participants' gender identities and histories in an inclusive manner.

1998; Nagoshi et al., 2008; Nierman et al., 2007). Across three components of attitudes (i.e., condemnation/tolerance, morality, contact), men consistently viewed gay men and lesbian women more negatively than did women (LaMar & Kite, 1998). Men also viewed same-sex relationships more negatively than did women in both American and Chilean samples (Nierman et al., 2007). Additionally, men tend to hold more negative attitudes toward “transsexual”<sup>6</sup> people (Gerhardstein & Anderson, 2010). A possible reason for this difference could be that men are typically higher in social dominance orientation; therefore, they may be more likely to view outgroup members in stereotypical ways, which could increase prejudice (Whitley, 1999).

Another predictor of attitudes toward sexual orientation and gender identity minorities is the political orientation of the rater. Political conservatives are less likely to support same-sex marriage (Whitehead, 2010) and more likely to hold negative attitudes toward transgender people (Welch, Fleming, Hatch, Kaufman, & Harton, 2017). People higher in right-wing authoritarianism, social dominance orientation, and political-economic conservatism, which are all related to political conservatism (Jost, Glaser, Kruglanski, & Sulloway, 2003) tend to hold more negative attitudes toward same-sex relationships (Norton & Herek, 2013; Whitley & Lee, 2000).

Culture can also affect attitudes toward gay men and lesbian women. Chilean people held more negative attitudes than Americans toward lesbian women and gay men, which could be due to the fact that Chilean views of gender roles tend to be more

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<sup>6</sup> Transgender people have been formerly referred to as *transsexual people*; however, this is no longer appropriate or widely accepted terminology within the transgender community.

traditional than American views (Nierman et al., 2007). Additionally, Asians and Hispanics have endorsed more homophobia than Caucasians (Span & Vidal, 2003). Other cultures (e.g., Samoan culture; some Native American tribes) consider gender fluidity to be a typical expression and behavior (Vasey & Bartlett, 2007; Walters, Evans-Campbell, Simoni, Ronquillo, & Bhuyan, 2008), whereas gender fluidity (e.g., having a transgender identity) is not as accepted in mainstream United States culture (Norton & Herek, 2013).

Even within the United States, there are differences in attitudes toward sexual orientation and gender identity minorities. College students in the Southern region of the U.S. were found to hold more negative attitudes toward sexual orientation minorities than college students in the Midwest (Hatch & Harton, 2018); however, at least one study has suggested that people in the Midwestern and Southern parts of the U.S. display similar levels of open acceptance and discriminatory practices in the workplace (e.g., hiring process of gay men; Tilcsik, 2011), with both regional areas displaying higher levels of discrimination compared to the Western and Northeastern regions of the United States. Other research has found that people living in the South tend to hold more negative attitudes toward same-sex marriage compared to those in the rest of the United States (Jelen, 2017; Whitehead, 2014). The heavy influence of religion in the “Bible belt” (Vazsonyi & Jenkins, 2010) could possibly explain negative attitudes held toward sexual orientation and gender identity minorities.

Strong religious belief is linked to individuals holding negative attitudes toward both sexual orientation minorities (Hatch, Harton, & Tost, 2017; Whitley, 2009) and gender identity minorities (Norton & Herek, 2013). Religion is often viewed as a system

in which people base their moral beliefs (Bloom, 2012), and religious belief may increase prejudice toward outgroup members who violate religious values (Jackson & Hunsberger, 1999; Perry, 2014; Riek, Mania, & Gaertner, 2006). Two examples of religious texts that condemn same-sex relationships (and potentially transgender identities) include the Bible and the Quran. The Bible (Leviticus 20:13, English Standard Version) and the Quran (Quran 7:80-84) clearly express that same-sex relationships is a sin. Further, both the Bible (Psalm 139:13-16, New International Version) and the Quran (Quran 95:4; Quran 27:88) express that people are made perfectly, which could relate to why some people may perceive being transgender negatively (e.g., if a person took steps to socially or physically transition).

The gender of the target could also be a factor in negative attitudes toward that target. Transgender women report experiencing more hate crimes and harassment than transgender men, therefore they may be viewed more negatively than transgender men (Miller & Grollman, 2015; NCAVP, 2013), which could be based on gender roles. For instance, it is viewed as more negative for men to express themselves in feminine ways (e.g., wearing makeup) than for women to express themselves in masculine ways (e.g., short hair style; Kite, 2001; McCreary, 1994). This deviation from Western societal norms could potentially explain why transgender women experience more hate crimes compared to transgender men (Jewell & Morrison, 2012; Kite & Deaux, 1987).

## CHAPTER 2

### CURRENT STUDY

Negative attitudes toward transgender people have been linked to individual differences, such as political conservatism and higher levels of religiosity (Norton & Herek, 2013; Welch et al., 2017). Individual differences may also be linked to moral and political attitudes (e.g., disgust or threat sensitivity; Jones & Fitness, 2008; Jost et al., 2007). Further, beliefs about morality and moral issues may affect attitudes toward transgender people. Two possible moral explanations for these negative attitudes are provided by moral foundations theory (Haidt & Graham, 2007) and the theory of dyadic morality, which suggest that there is an automatic response that occurs with moral judgments.

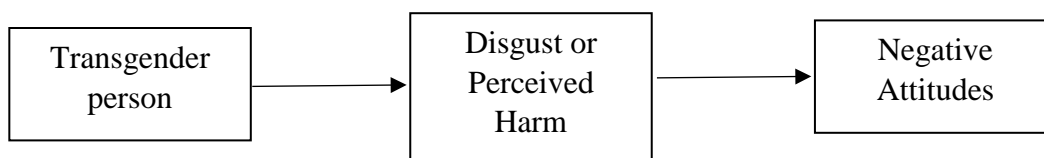
Moral foundations theory (MFT; Haidt & Graham, 2007) predicts that cues in the environment cause innate moral intuitions to arise (i.e., the five central moral foundations), resulting in an automatic response, which then results in an attempt to rationalize the automatic response (Haidt & Joseph, 2004). MFT predicts the purity foundation in particular should motivate people to hold negative attitudes toward transgender people. The purity foundation is closely associated with feelings of generalized disgust and has been linked to people holding negative attitudes toward gay men (Inbar et al., 2009).

The theory of dyadic morality (TDM; Gray et al., 2012) is similar to MFT in that it predicts that automatic responses occur from cues within the environment, but it differs on the emphasis placed on harm. The TDM (Gray et al., 2012) predicts that harm



mediates the relationship between disgust and attitudes, suggesting that harm is the stronger underlying mechanism that drives automatic responses. The theory of dyadic morality suggests that it is perceived harm rather than generalized disgust that drives negative attitudes toward transgender people—some people may perceive transgender individuals to cause harm (e.g., to their worldview, to children).

Both MFT and TDM suggest that these generalized feelings are automatic; however, they differ on the emphasis on disgust versus harm in moral judgments. If these feelings are automatically activated, then priming the idea of a transgender person should lead to increased feelings of disgust and/or harm. These automatic feelings may then be rationalized as negative attitudes (Figure 2).



*Figure 2.* Model of Negative Attitudes toward Transgender People.

This study focused on the first part of the model (i.e., priming a “transgender” identity and measuring levels of generalized disgust and harm). The full model is nearly impossible to capture in one study, because by asking about attitudes toward transgender people, one would lead all participants to think about transgender people. Therefore, there would no longer necessarily be a distinction between those who were initially primed to think about a transgender person and those who were not.

To test whether thinking about a transgender person triggers automatic thoughts of disgust/harm, I compared measures of generalized disgust and harm after participants

viewed a transgender male's or female's scholarship application, versus an atheist's scholarship application and a first-generation college student's scholarship application. The prime of the identity of the applicant should theoretically induce automatic feelings associated with MFT and/or TDM, so I measured these generalized feelings of disgust and harm by examining disgust sensitivity (MFT; Haidt & Graham, 2007) and the belief that the world is dangerous (TDM; Gray et al., 2012; based on previous TDM research, Schein et al., 2016). If transgender people automatically activate feelings of disgust or harm, then thinking about the transgender applicant's application should also automatically activate those feelings.

I used atheists as a comparison group because they are typically viewed negatively in U.S. society (Edgell, Gerteis, & Hartmann, 2006), and may elicit negative affect (via distrust; Gervais, Shariff, & Norenzayan, 2011). Using atheists as a comparison group then controls for any differences between groups in valence (as opposed to target; see Cameron, Lindquist, & Gray, 2015). Gervais et al. (2011) found that atheists elicited feelings of distrust, but not disgust, whereas gay men elicited feelings of disgust, but not distrust. Atheists are also perceived as more representative of those likely to commit a variety of types of immoral acts than those from other groups (Gervais, 2014). Additionally, first-generation college students are included as a less stigmatized comparison group.

This study also varied gender (i.e., male or female) of the person depicted in the transgender condition to examine the differences in emotion elicited by transgender men versus transgender women. Transgender women are more likely to experience hate

crimes compared to transgender men (NCVAP, 2013), which could be due to stereotypical gender role norms (Kite, 2001; McCreary, 1994). The current research examined how this social rule breaking view may relate to the moral motivations that activate feelings of generalized disgust and harm.

I also incorporated regional comparisons in this study. People from different regions may hold different attitudes toward popular social issues (e.g., corporal punishment and gender roles; Flynn, 1996; Powers et al., 2003). These different cultural beliefs may affect the intensity of feelings of generalized disgust and harm, as cultural influences play a role in the development of moral beliefs (Graham et al., 2009). Obtaining participants from different regions also increased the number of participants, which increased power. I recruited participants from three populations – community participants collected via Amazon’s Mechanical Turk (mTurk), college students from the University of Northern Iowa (UNI), and college students from Valdosta State University (VSU). The mTurk participants were from geographical regions throughout the United States, whereas the two college samples were collected from different geographical areas (i.e., Midwestern and Southeastern United States). Both universities are public with comparable populations. The mTurk participants may also hold different perspectives compared to college students due to different demographics. Participants recruited via mTurk are typically older, less extraverted, and more racially diverse than college student participants (Berinsky, Huber, & Lenz, 2012; Goodman, Cryder, & Cheema, 2013).

Participants were told that they were completing two unrelated studies to better ensure that participants did not answer questions in a socially desirable way and to reduce

demand characteristics. They were told that in the first part they would evaluate a scholarship applicant, and that the second part examined the relationship between personality and attitudes. I attempted to distance the two parts of the study conceptually so that participants would be less aware that I was interested in how individual difference measures related to attitudes toward those with different identities.

Participants were randomly assigned to one of four identity conditions (i.e., transgender male, transgender female, atheist, first-generation college student). In each condition, participants read and evaluated a scholarship application from a person with one of the previously mentioned identities. The application included demographic information about the applicant, as well as a paragraph where the applicant addressed how they were a leader at their institution. The part of the application discussing their leadership at the institution discussed the identity-specific information related to the applicant (i.e., first-generation college student, atheist, transgender male/female). Participants first evaluated the applicant by writing a letter of recommendation. The purpose of writing a letter of recommendation for the scholarship applicant was to encourage the participant to think more deeply about the applicant. After writing the letter of recommendation, participants completed a measure of social distance regarding their feelings toward the applicant in a variety of social situations, and answered questions further evaluating the applicant (e.g., “how likely is it that you would give the scholarship applicant the scholarship?”). Participants received these two measures (i.e., social distance measure and evaluation questions) after the evaluation of the applicant to

ensure that the cover story of two parts of the study was upheld and to make the identity of the applicant more salient.

Participants viewed a screen that told them that they were about to begin the second part of the study, which included questions about their personality and beliefs. Participants were then directed to the generalized measures of disgust and harm in a random order to assess their general feelings and to examine the extent to which both of these feelings were elicited after the manipulation. Participants answered questions regarding their levels of positive and negative affect at that moment. Participants also completed questions regarding their specific levels of perceived disgust and harm and elicited anger of transgender people, as well as other groups of people (i.e., first-generation college students, atheists, Evangelical Christians, conservatives, liberals, immigrants, substance abusers, transgender people).

Participants then completed measures of religiosity and moral foundations in a random order followed by a measure examining attitudes toward transgender people. Finally, participants completed a measure of demographics, an open-ended question regarding how they feel about transgender people, honesty checks, an open-ended item asking about their perceptions of the purpose of the study, and an open-ended question regarding any comments the participants had.

### Research Questions

This study included research questions rather than hypotheses because there is not a great deal of research within this area to guide the direction of the hypotheses. This is especially true for the first research question, which tests two morality theories that have

both received support. All of the main and exploratory research questions as well as the procedure and planned analyses were preregistered on the Open Science Framework at <https://osf.io/b4npv/>.

The research questions for the current study were:

1. Does being primed with a transgender person elicit more disgust versus harm compared to priming the other two groups (i.e., first-generation college students and atheists)? According to MFT (Haidt & Graham, 2007), transgender primes may elicit more generalized feelings of disgust (operationalized here as scores on the Disgust Scale-Revised; Haidt, McCauley, & Rozin, 1994, modified by Olatunji et al., 2007) compared to harm. Transgender primes may also elicit more feelings of generalized disgust than the other two groups. According to TDM (Gray et al., 2012), transgender primes may elicit more generalized feelings of harm (operationalized here as scores on the Belief in a Dangerous World scale; Altemeyer, 1988) compared to disgust. Transgender primes should also elicit more feelings of generalized harm compared to the other two groups.
2. Are there differences in social distance between conditions? Based on previous research suggesting that transgender people face prejudice and discrimination (e.g., NCVAP, 2013), the transgender conditions may elicit higher scores on social distance (more desired distance) compared to the control condition. Social distance toward the transgender woman may also be

higher than toward the transgender man because of more rigid gender roles for men (Kite, 2001; McCreary, 1994).

3. Is the purity moral foundation a moderator of feelings of generalized disgust and harm in the transgender condition? According to MFT (Haidt & Graham, 2007), purity may moderate specific feelings of disgust and harm. Automatic responses and associations should occur similarly for all people and then moral foundations such as purity help to rationalize the response. The purity foundation seems to be particularly relevant to judgments about moral disgust (Gutierrez & Giner-Sorolla, 2007), and people who are higher on this foundation such as political conservatives may have stronger disgust reactions to issues related to sexuality or gender identity (Inbar et al., 2009).
4. Does explicit disgust/harm/anger differ by group (i.e., first-generation college students, atheists, Evangelical Christians, conservatives, liberals, immigrants, substance abusers, transgender people)? Several moral theories (e.g., MFT; Haidt & Graham, 2007; TDM; Gray et al., 2012) distinguish between reactions of disgust, harm, and anger toward norm-violating groups. Here I tested whether participants differentially reported these reactions to transgender people as well as other groups with whom participants might disagree. In addition to the groups used in the experimental portion of the study, I included Evangelical Christians as a comparison to atheists, conservatives and liberals because of the saliency of this distinction currently in the United States, and immigrants and substance abusers as examples of

groups that were salient in the news and may be discriminated against, but may also elicit sympathy.

### Exploratory Questions

This study also tested exploratory research questions.

1. Do the effects differ by sample? Previous research suggests that mTurk participants may respond differently than college students (Berinsky et al., 2012; Goodman et al., 2013). Additionally, people living in the Southeastern United States tend to hold more negative attitudes toward same-sex marriage (Jelen, 2017) and more negative attitudes toward sexual orientation minorities (Hatch & Harton, 2018), which suggests that people in this region may also hold more negative attitudes toward transgender people.
2. Do the three samples differ on any of the dependent variables (i.e., group disgust/harm/anger, transgender attitudes, moral foundations questionnaire, religious fundamentalism)? Participants from the Southeastern university may display higher levels of reported explicit disgust/harm/anger for each group and religious fundamentalism compared to the other two samples due to the different religious denominations and practices in each of the regions (Pew Research Center, 2014a; Whitehead, 2013). Participants from the Southeastern university may also hold more negative attitudes toward transgender people because students from this university reported more negative attitudes toward same-sex relationships than students from the Midwestern university in a previous study (Hatch & Harton, 2017). Participants from mTurk samples also tend to be older,



less extraverted, and more racially diverse than college student participants (Berinsky et al., 2012; Goodman et al., 2013).

3. Are there correlations among the dependent variables of transgender interpersonal comfort, sex/gender beliefs, contact with transgender people (measured through a demographic item, with selection of more options indicating more contact), explicit perceived disgust and harm and elicited anger of transgender people, the moral foundations, political orientation, and religious fundamentalism? I explored potential individual differences that are related to attitudes toward transgender people. Previous research found that transgender interpersonal comfort and sex/gender beliefs were related to religiosity (Welch et al., 2017), and that political conservatism and contact with sexual orientation and gender identity minorities was related to attitudes toward transgender people (Norton & Herek, 2013).

## CHAPTER 3

## METHOD

Participants

I conducted a power analysis to determine the number of participants needed. I used effect sizes from Study 2 of Wisneski and Skitka (2017), which tested the effects of stimulus content (i.e., abortion pictures, pictures aimed to induce disgust, or a neutral picture) and reaction (i.e., disgust, anger, and harm) on moral conviction. This study was used for comparison based on similarities of measured variables. The effect sizes (*omega squared*) for this study were .07 and .09, which suggests a medium effect size. To obtain .80 power with a medium effect size, I needed 64 participants per condition, for a total of 256 participants. I have three groups of participants, so I needed to recruit 256 participants per group to get an accurate comparison between groups. Participants were Amazon Mechanical Turk (mTurk) users, undergraduate college students from the University of Northern Iowa (UNI), and undergraduate college students from Valdosta State University (VSU). There were 293 participants recruited from mTurk, 319 participants recruited from UNI, and 286 participants recruited from VSU. After deletions based on exclusion criteria there were 272 mTurk participants, 284 UNI participants, and 243 VSU participants. Participants from mTurk were relatively older,  $F(2, 773) = 533.01, p < .001, \eta_G^2 = .58$  90% CI [.55, .61], less Christian,  $\chi^2(2, 799) = 76.71, p < .001$ , and more liberal (as measured through current views on social issues),  $F(2, 775) = 19.73, p < .001, \eta_G^2 = .05$  90% CI [.03, .07], compared to the college student samples (Table 1). VSU participants had a higher percentage of women,  $\chi^2(2, 774) =$

59.48,  $p < .001$ , and non-Caucasian participants,  $\chi^2(2, 799) = 105.36$ ,  $p < .001$ , compared to the other two samples (Table 1). Additionally, all three samples consisted of mostly heterosexual participants, with UNI having the highest percentage,  $\chi^2(2, 796) = 6.54$ ,  $p = .04$  (Table 1).

Participants recruited via mTurk were recruited on the TurkPrime website and compensated \$1.50 for participating in the study. Participants recruited from mTurk had to have 100 or more approved HITS, an approval rate of 95% or higher, and a bank location in the United States (determined by TurkPrime). The UNI college students were recruited via a participant pool of students in an introductory psychology course and received course credit for participation. The VSU college students were recruited via email (Appendix A) by their professors through various psychology classes and were offered extra credit for their participation at the professor's discretion, as well as offered the opportunity to enter to win a \$25 Amazon gift card.

Participants were told that they would participate in two parts of one study, where they would first evaluate a scholarship applicant and then answer questions about their attitudes and beliefs (Appendix A). This online study was administered via Qualtrics for all participant groups (i.e., mTurk participants and both undergraduate participants), and was exactly the same with the exception of a few demographic questions.

Table 1

*Demographic Characteristics*

Demographics	Mechanical Turk participants	University of Northern Iowa students	Valdosta State University students	Overall
Age	38.59 (12.55)	18.98 (1.74)	20.70 (3.30)	26.24 (11.79)
Female	57%	53%	84%	64%
White/Caucasian	74%	89%	49%	72%
Heterosexual	84%	91%	85%	87%
Christian	46%	75%	79%	66%
Liberal or Very Liberal	47%	22%	24%	39%
Highest degree (Bachelor's or higher)	61%	NA	NA	NA
Year in School (First-year students)	NA	70%	14%	NA
<i>n</i>	272	284	243	799

*Note.* The percentages provided are based on data of participants who met all inclusion criteria. Christian percentages include participants who selected Catholic, Protestant (e.g., Baptist, Lutheran, and Methodist), Nondenominational, or other Christian denominations (e.g., Jehovah's Witness, Mormon). Political orientation was measured through self-reported political views on current social issues.

### Procedure

Participants read an electronic consent form before proceeding to the study (Appendix B). Participants were randomly assigned to evaluate a first-generation college student applicant (i.e., control), an atheist applicant, or a transgender male or female applicant for consideration of a scholarship for leaders. There was no mention of gender identity in the first-generation or atheist applicant conditions. The manipulation resembled an application for a leadership scholarship (Appendix C) and contained questions and information that would be on a typical application (e.g., GPA, leadership activities). The application also had a short essay where the applicant (Taylor Smith) described how they were a leader on their campus using identity-specific information (e.g., student organization leader for students like themselves). Participants were asked to write a letter of recommendation for the scholarship applicant and were required to stay on the page for 90 seconds to ensure that they completed the task.

Participants then completed measures assessing social distance and questions regarding the evaluation of the scholarship applicant. Next, participants completed measures of generalized disgust and harm in a random order. Participants then were asked about their positive and negative affect, followed by questions assessing levels of perceived disgust and harm and elicited anger of specific groups (e.g., transgender people, immigrants) in random order, and the manipulation check. Participants then completed religiosity and moral foundations measures in a random order followed by a measure assessing attitudes toward transgender people. The study concluded with measures of demographics, an open-ended question regarding how participants feel about

transgender people, honesty checks, a question asking the purpose of the study, and the debriefing form (Appendix D for survey flow). There were three attention checks throughout the study to ensure that participants were paying attention (Appendix E). The college student participants were also asked to complete a Google form to provide their name for either class credit (UNI) or extra credit (VSU; Appendix F).

### Variables and Measures

#### Social Distance Scale

The Social Distance Scale (Link, Cullen, Frank, & Wozniak, 1987) assessed feelings toward the scholarship applicant in various social situations (Appendix G). This scale consisted of seven items with responses ranging from 1 (*Definitely unwilling*) to 4 (*Definitely willing*). A few questions from this scale include: “how would you feel about renting a room in your home to Taylor,” “how would you feel about having your children marry Taylor,” and “how would you feel recommending Taylor for a job working with someone you know?” This scale has good construct validity (Peters et al., 2014). Link et al. (1987) found a reliability of .92 for this scale. This scale had a full sample reliability coefficient of .91 in the current study (range = .89 - .93).

#### Evaluation Questions

The evaluation questions (Appendix H) consisted of two items evaluating the scholarship applicant. The first statement asked participants to rate the extent to which they agreed with the statement, “Taylor is a leader on their college campus” on a scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The second item asked participants “How deserving of the scholarship do you think Taylor is?” on a scale from 1 (*Not*

*deserving at all*) to 5 (*Very deserving*). There was also an open-ended question asking “Why do you think Taylor is, or is not, deserving of the scholarship?”

#### Disgust Scale – Revised

The Disgust Scale-Revised (Haidt et al., 1994, modified by Olatunji et al., 2007) assessed sensitivity to disgust (Appendix I). This scale has three subscales: core disgust, animal-reminder disgust, and contamination disgust. The measure is split into two subsections. One subsection asked participants their extent of agreement on 14 statements with responses ranging from 0 (*Strongly disagree*) to 4 (*Strongly agree*). An example from this scale is “Seeing a cockroach in someone else’s house doesn’t bother me.” The other subsection asked participants to indicate how disgusting 13 statements are with responses ranging from 0 (*Not disgusting at all*) to 4 (*Extremely disgusting*). An example from this scale is “You see a man with his intestines exposed after an accident.” The Disgust Scale-Revised has good content and convergent validity (van Overveld, Peters, de Jong, & Schouten, 2011). Van Overveld et al. (2011) found the following reliabilities: whole scale (.87), core disgust (.78), animal reminder disgust (.78), and contamination disgust (.54). I used the entire scale in my analyses, which had a full sample reliability coefficient of .87 (range = .86 - .88).

#### Belief in a Dangerous World Scale

The Belief in a Dangerous World Scale (Altemeyer, 1988) assessed various concerns of social danger within our society (Appendix J). This scale consists of 12 items with responses ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). An example item is “Any day now chaos and anarchy could erupt around us. All signs are pointing to

it.” Although I was not able to find specific information on the validity of the measure, it is suggested to be a well-validated measure (Schein et al., 2016). Schein et al. (2016) found an overall reliability of .94 for this scale. In the current study, this scale had a full sample reliability coefficient of .88 (range = .79 -.92).

#### The International Positive and Negative Affect Schedule Short Form (I-PANAS-SF)

The International Positive and Negative Affect Schedule Short Form (Thompson, 2007) assessed positive and negative affect (Appendix K). This scale asked participants to rate the extent to which they felt various emotions at that moment across 10 items ranging from 1 (*I feel nothing like this right now*) to 5 (*I feel exactly like this right now*). Five items assessed positive affect (e.g., alert), and five items assessed negative affect (e.g., upset). Thompson (2007) reported acceptable convergent validity and a reliability of .80 for the positive affect subscale and .74 for the negative affect subscale. In the current study, this scale had a full sample reliability coefficient of .81 (range = .76 - .90) for the positive affect subscale and .84 (range = .78 - .83) for the negative affect subscale.

#### Specific Transgender Questions

There were three specific questions that assessed the perceived disgust and harm and elicited anger of various groups with responses ranging from 0 (*Not disgusting/harmful/angry at all*) to 4 (*Extremely disgusting/harmful/angry*; Appendix L). These questions asked how disgusting and harmful the participant perceived different types of people to be, and how angry these groups of people made the participant. The groups of people included first-generation college students, atheists, Evangelical Christians, conservatives, liberals, immigrants, substance abusers, and transgender



people. Both the order of the emotion (i.e., disgust, harm, anger) and the groups were presented in a random order.

#### Manipulation Check

The manipulation check included a basic question asking the gender identity of the scholarship applicant (Appendix M).

#### Religious Fundamentalism Scale

The Religious Fundamentalism Scale (Altemeyer & Hunsberger, 2004) assessed how strongly one abides by their religious ideology (Appendix N). This scale consisted of 12 items on a 9-point Likert scale with responses ranging from -4 (*Very strongly disagree*) to 4 (*Very strongly agree*), with 0 being “feel exactly and precisely neutral about this statement.” An example statement that was used in this scale is: “No single book of religious teaching contains all the intrinsic, fundamental truths about life.” Altemeyer and Hunsberger (2004) reported good construct validity and a reliability coefficient of .91. In the current study, the full sample reliability coefficient was .95 (range = .92 - .96).

#### Moral Foundations Questionnaire

The Moral Foundations Questionnaire (Graham et al., 2009) assessed the five central moral foundations (Appendix O). This questionnaire consists of two different parts. Part one consisted of 16 items with responses ranging from 0 (*Not at all relevant*) to 5 (*Extremely relevant*). For instance, an example item from this scale is: “Whether or not someone violated the standards of purity and decency.” The second part of the scale consisted of 16 additional statements with responses ranging from 0 (*strongly disagree*)

to 5 (*strongly agree*). An example item from this scale is: “One of the worst things a person could do is hurt a defenseless animal.” This questionnaire has good convergent, discriminant, and pragmatic validity (Graham et al., 2011). The full sample reliability coefficients for the current study were: .67 (harm/care; range = .61 - .71), .69 (fairness/reciprocity; range = .61 - .73), .73 (ingroup/loyalty; range = .67 - .77), .71 (authority/respect; range = .64 - .75), and .78 (purity/sanctity; range = .70 - .85). Previous research has found similar reliabilities (Tilburt et al., 2013).

#### Transgender Attitudes and Beliefs Scale

The Transgender Attitudes and Beliefs Scale (Kanamori, Cornelius-White, Pegors, Daniel, & Hulgus, 2016) assessed attitudes toward transgender people (Appendix P). This scale contained 29 items with responses ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). There are three factors within this measure: interpersonal comfort (14 items), sex/gender beliefs (10 items), and human value (5 items). The current study only collected data on the first two factors (i.e., interpersonal comfort and sex/gender beliefs) because people scored universally high on the human value scale in a previous study with samples from two of the same populations (Welch et al., 2017). The interpersonal comfort factor assessed how comfortable someone is around transgender people. An example question from this factor includes: “I would feel comfortable having a transgender person into my home for a meal.” The sex/gender beliefs factor assessed different causes or beliefs that people may have about sex or gender. An example question from this factor includes: “A person who is not sure about being male or female is mentally ill.” The subscales were examined separately. This scale has good

discriminant and convergent validity (Kanamori et al., 2016). Kanamori et al. (2016) found reliability coefficients of .98 for the interpersonal comfort subscale and .97 for the sex/gender beliefs subscale. The full study reliability coefficients for the current study were .95 (range = .93 - .95) for interpersonal comfort and .92 (range = .91 - .94) for sex/gender beliefs.

### Demographics

The demographics section examined basic questions regarding gender identity, political orientation, religiosity, sexual orientation, age, and exposure to people from the LGBTQ+ community (Appendix Q).

### Open-ended Question

Participants answered an open-ended question regarding their attitudes toward transgender people (“How do you feel about transgender people?”; Appendix R).

### End of Study Questions

The end of the study consisted of an honesty check asking “How honest were you when answering all questions?,” ranging from 1 (*Not at all honest*) to 4 (*Very honest*). Additionally, there was a follow-up open-ended question asking “Is there any reason we should not use your data? Please explain.” Lastly, there was an open-ended question relating to whether the participants realized the true intent of the study (“What do you think this study was about?”; Appendix R). There was also a comment box at the end of the study. Due to the sensitive nature of the study, participants also had the right to object to have their data used in analyses after reading the debriefing form (Appendix S).

## CHAPTER 4

### RESULTS

#### Exclusion Criteria

Data were excluded from analyses if there were outliers on the harm and disgust measures, if there were participants who stated that I should not use their data, if there were participants who incorrectly answered the manipulation check, if there were participants who missed two out of the three attention checks, if the timing was below 2.5 standard deviations below the mean, and if there were duplicate IP addresses (Table 2). Outliers were determined using Mahalanobis distance, and data exceeding a  $z$ -score of  $\pm 3.29$  for the harm and disgust measures were removed. Participants who stated that they objected to having their data used after completing the study had their data removed from any analyses. For the manipulation check, I examined answers carefully based on comments provided by participants. If a participant answered that Taylor's gender identity was "transgender" regardless of whether they selected "male" or "female," they were still included in subsequent analyses. Additionally, if a participant stated within the comments something about Taylor being transgender, even though they selected "male" or "female," they were also included in subsequent analyses because they recognized that Taylor identified as transgender. If there was no mention of Taylor's identity as transgender in the comments or as a selected answer within the transgender conditions, then the data were then removed from further analyses because there was no way to identify whether the participant was aware of Taylor's transgender identity. Additionally, data were removed from analyses if two out of the three attention checks were incorrect

or timing was 2.5 standard deviations below the mean. If there were duplicate IP addresses in the mTurk sample, the data from the second IP address was removed.

Table 2

*Number of Removed Data*

Exclusion Criteria	Mechanical Turk participants	University of Northern Iowa students	Valdosta State University students
Outliers	0	0	1
Objected to use of data in analyses	6	8	10
Manipulation Check	12	26	28
Attention checks	1	1	4
Timing	0	0	0
Duplicate IP addresses	2	NA	NA
Total Remaining <i>n</i>	272	284	243

Plan of Analysis

There were two research questions that examined differences among conditions. First, I tested for differences in generalized disgust and/or harm after viewing the scholarship application. I conducted a mixed analysis of variance (ANOVA). The within-participants factor was the type of generalized feeling (i.e., disgust, harm) and the between-participants factor was the condition (i.e., first-generation college student, atheist, transgender male, transgender female). The harm and disgust measures were converted to *z* scores to make the scales more comparable. Second, I examined

differences in reported social closeness. I conducted a one-way ANOVA to examine whether there were differences between conditions on reported levels of social closeness. The independent variable was the condition and the dependent variable was social distance. I followed all significant between samples tests with Tukey post-hoc comparisons. Unless otherwise stated, I report 90% confidence intervals (Lakens, 2004; Steiger, 2004).

Additionally, I conducted two moderation analyses for each sample using PROCESS (Hayes, 2017) to determine whether the purity moral foundation moderated the relationship between condition and generalized emotion (i.e., perceived disgust or harm). For this analysis, I used 10,000 bootstraps and 95% confidence intervals.

I also conducted three repeated-measure ANOVAs followed by simple contrasts with transgender people as the comparison group to examine whether there were differences in explicit disgust, harm, and elicited anger between various groups (i.e., first-generation college students, atheists, Evangelical Christians, conservatives, liberals, immigrants, substance abusers, transgender people).

I ran all of the above analyses on the three samples separately due to differences in demographics (Table 2). Additionally, I conducted exploratory analyses to examine whether the above effects differed by sample by adding an additional independent variable of sample to each of the models. To examine whether perceived disgust and harm and elicited anger of various groups differed between samples, I conducted eight one-way ANOVAs (one for each target group) for each emotion as follow-up analyses. I also ran these overall analyses with gender, political orientation, religious

fundamentalism, the moral foundations, as well as positive and negative affect as covariates. The results of these analyses are reported after the main analysis that they correspond with.

I conducted ANOVAs with the subscales of the moral foundations questionnaire, attitudes toward transgender people, and religious fundamentalism as the dependent variables to examine whether there were any differences between the samples on these dependent variables.

I also conducted an overall correlation analysis of the dependent variables, except for the variables that were intended to be affected by condition (i.e., disgust, harm, social distance). The dependent variables that were included in the correlation analysis were transgender interpersonal comfort, sex/gender beliefs, contact with transgender people, explicit perceived disgust, harm, and elicited anger of transgender people, the moral foundations, political orientation, and religious fundamentalism.

Lastly, I conducted four non-preregistered exploratory analyses. The first two were regarding the scholarship applicant evaluation questions. I ran two one-way ANOVAs, with condition as the independent variable. The dependent variable for one ANOVA was how much the scholarship applicant was perceived to be a leader on their campus and the second dependent variable was how deserving they were of the scholarship. I also conducted two exploratory descriptive evaluations for the letter of recommendation that participants wrote and their responses regarding how they felt about transgender people.

### Research Question 1

First, I examined whether being primed with a transgender person elicited more generalized disgust and/or harm compared to being primed with one of the other two groups (i.e., first-generation college student, atheist).

#### mTurk Sample

There was not a significant within-effect of disgust versus harm,  $F(1, 249) = .02, p = .88, \eta_G^2 < .001, 90\% \text{ CI } [<.001, .003]$  nor a significant main effect of condition,  $F(3, 249) = .38, p = .77, \eta_G^2 = .01, 90\% \text{ CI } [<.001, .02]$ . There was also not a significant interaction effect of condition by disgust versus harm,  $F(3, 249) = .63, p = .60, \eta_G^2 = .007, 90\% \text{ CI } [<.001, .02]$  (Table 3). Participants in the transgender male condition and the transgender female condition did not report any greater feelings of harm or disgust than participants in the atheist or first-generation college student condition.

Table 3

*Means (Standard Deviations) of Disgust and Harm by Condition (mTurk)*

Measures	First-generation College Student	Atheist	Transgender Male	Transgender Female
Disgust Scale	0.10 (1.00)	-0.08 (1.05)	0.01 (1.01)	-0.05 (0.91)
	3.15 (0.64)	3.03 (0.68)	3.09 (0.65)	3.05 (0.59)
Belief in a Dangerous World Scale	0.06 (0.92)	0.09 (0.98)	-0.11 (1.15)	-0.07 (0.93)
	4.04 (1.17)	4.07 (1.25)	3.83 (1.46)	3.87 (1.18)

*Note.* The first line is the standardized score mean and the second line is the actual score mean. Actual scores ranged from 1 to 5 for the Disgust Scale and 1 to 7 for the Belief in a Dangerous World Scale.



### UNI Student Sample

There was not a significant within-effect of disgust versus harm,  $F(1, 264) = .02$ ,  $p = .89$ ,  $\eta_G^2 < .001$ , 90% CI [ $<.001$ , .003] nor a significant main effect of condition,  $F(3, 264) = .29$ ,  $p = .83$ ,  $\eta_G^2 < .001$ , 90% CI [ $<.001$ , .01]. There was also not a significant interaction effect of condition by disgust versus harm,  $F(3, 264) = .283$ ,  $p = .84$ ,  $\eta_G^2 = .003$ , 90% CI [ $<.001$ , .01] (Table 4). Participants in the transgender male condition and the transgender female condition did not elicit greater feelings of generalized disgust or harm than participants in the atheist or first-generation college student conditions.

Table 4

#### *Means (Standard Deviations) of Disgust and Harm by Condition (UNI students)*

Measures	First-generation	Atheist	Transgender Male	Transgender Female
	College Student			
Disgust Scale	-0.06 (1.11)	0.02 (0.90)	0.10 (1.01)	-0.08 (1.01)
	3.04 (0.69)	3.10 (0.56)	3.14 (0.63)	3.03 (0.63)
Belief in a Dangerous World Scale	-0.04 (1.06)	-0.01 (1.04)	0.05 (1.03)	0.01 (0.84)
	4.02 (0.83)	4.04 (0.82)	4.09 (0.81)	4.06 (0.66)

*Note.* The first line is the standardized score mean and the second line is the actual score mean. Actual scores ranged from 1 to 5 for the Disgust Scale and 1 to 7 for the Belief in a Dangerous World Scale.

### VSU Student Sample

There was not a significant within-effect of disgust versus harm,  $F(1, 214) = .003$ ,  $p = .96$ ,  $\eta_G^2 < .001$  90% CI [ $<.001$ ,  $.001$ ] nor a significant main effect of condition,  $F(3, 214) = 1.04$ ,  $p = .37$ ,  $\eta_G^2 = .01$ , 90% CI [ $<.001$ ,  $.02$ ]. There was also not a significant interaction effect of condition by disgust versus harm,  $F(3, 214) = .479$ ,  $p = .70$ ,  $\eta_G^2 = .007$ , 90% CI [ $<.001$ ,  $.02$ ] (Table 5). Participants in the transgender male condition and the transgender female condition did not elicit greater feelings of generalized disgust or harm compared to participants in the atheist or first-generation college student conditions.

Table 5

#### *Means (Standard Deviations) of Disgust and Harm by Condition (VSU students)*

Measures	First-generation	Atheist	Transgender Male	Transgender Female
	College Student			
Disgust Scale	0.002 (1.08)	-0.02 (1.07)	0.11 (0.83)	-0.09 (0.93)
	3.39 (0.70)	3.37 (0.69)	3.46 (0.54)	3.33 (0.60)
Belief in a Dangerous World Scale	-0.10 (1.01)	0.07 (0.96)	0.18 (0.95)	-0.22 (1.04)
	4.58 (0.94)	4.74 (0.89)	4.84 (0.88)	4.47 (0.96)

*Note.* The first line is the standardized score mean and the second line is the actual score mean. Actual scores ranged from 1 to 5 for the Disgust Scale and 1 to 7 for the Belief in a Dangerous World Scale.

### Overall

I also conducted an exploratory analysis with sample as an additional independent variable. There was not a within-effect of disgust versus harm,  $F(1, 727) = .003, p = .96, \eta_G^2 < .001, 90\% \text{ CI } [<.001, <.001]$  nor any significant differences on elicited generalized disgust and harm by condition,  $F(3, 727) = .46, p = .71, \eta_G^2 = .002, 90\% \text{ CI } [<.001, .01]$ . Participants in the transgender male condition and the transgender female condition did not elicit greater feelings of generalized disgust or harm than participants in the atheist and first-generation college student condition. Additionally, generalized disgust and harm did not differ by sample,  $F(2, 727) = .02, p = .99, \eta_G^2 < .001, 90\% \text{ CI } [<.001, .001]$ . Further, there were no significant interaction effects,  $ps > .70, \eta_G^2s < .01$ .

Further, I conducted one ANCOVA, adding gender, political orientation, religious fundamentalism, the moral foundations and positive and negative affect as covariates to the analysis above. Gender, religious fundamentalism, the ingroup and purity moral foundation, and negative affect were significant covariates, and sample emerged as a significant effect, suggesting that the samples may differ in ways beyond those tested in this study (Table 6; Table 7).

Table 6

*Generalized Disgust and Harm ANCOVA Between-Subjects Results*

	<i>F</i>	<i>p</i>	$\eta_G^2$
Gender	38.81**	<.001	.06
Political Orientation	1.04	.31	.002
Religious Fundamentalism	30.43**	< .001	.05
Harm Foundation	0.50	.48	.001
Fairness Foundation	2.29	.13	.004
Ingroup Foundation	4.40*	.04	.01
Authority Foundation	2.84	.09	.004
Purity Foundation	20.03**	< .001	.03
Positive Affect	0.52	.47	.001
Negative Affect	18.07**	< .001	.03
Sample	18.47**	< .001	.06
Condition	1.93	.12	.01
Sample*Condition	0.60	.73	.01

*Note.* \*  $p < .05$  \*\*  $p < .001$

Table 7

*Generalized Disgust and Harm ANCOVA Within-Subjects Results*

	<i>F</i>	<i>p</i>	$\eta_G^2$
Generalized Feeling	2.93	.09	.01
Generalized Feeling*Gender	1.66	.20	.003
Generalized Feeling*Political Orientation	7.32*	.01	.01
Generalized Feeling*Religious Fundamentalism	1.22	.27	.02
Generalized Feeling*Harm Foundation	0.12	.73	< .001
Generalized Feeling*Fairness Foundation	0.08	.78	< .001
Generalized Feeling*Ingroup Foundation	6.75*	.01	.01
Generalized Feeling*Authority Foundation	8.61*	.003	.01
Generalized Feeling*Purity Foundation	2.54	.11	.004
Generalized Feeling*Positive Affect	0.34	.56	.001
Generalized Feeling*Negative Affect	0.57	.45	.001
Generalized Feeling*Sample	0.16	.85	.001
Generalized Feeling*Condition	0.24	.87	.001
Generalized Feeling*Sample*Condition	.21	.97	.002

Note. \*  $p < .05$

Exploratory analysis. While the overall and separate sample analyses both suggest that the prime may not have been effective, the prime should theoretically have the strongest (and perhaps only) effects for participants with negative attitudes towards transgender people. To explore this possibility, I conducted a post-hoc, non-pre-registered exploratory correlational analysis to examine whether participants in the transgender male and female conditions (combined) with more negative attitudes toward transgender people reported more feelings of generalized disgust or harm. Higher levels of generalized disgust and harm were related to negative attitudes toward both transgender interpersonal comfort and a lack of understanding between the distinction of sex and gender (i.e., lower levels of sex/gender beliefs). Higher levels of generalized disgust were also related to negative evaluations of transgender people on explicit perceived disgust, but not harm. The opposite pattern occurred for generalized harm, with higher levels relating to more explicit feelings of harm, but not explicit perceived disgust for participants in the transgender conditions (Table 8). It should be noted that all of these effects were small.

To further test whether these results were due to people with more negative attitudes toward transgender people being more affected by the prime vs. people with more negative attitudes just feeling more disgust and harm in general, I also ran these correlations for participants in the other two conditions. A very similar pattern of results emerged, suggesting that people who hold greater prejudice toward transgender people may be more sensitive to disgust and view the world as a more dangerous place.

Table 8

*Inter-Correlation of Attitudes toward Transgender People with Generalized and Explicit Measures*

	GH	IC	SGB	EPD	EPH
<b>Transgender Conditions</b>					
Generalized Disgust	.39**	-.15**	-.20**	.11*	.08
Generalized Harm		-.11*	-.27**	.09	.11*
Interpersonal Comfort			.73**	-.72**	-.59**
Sex/Gender Beliefs				-.61**	-.42**
Explicit Perceived Disgust					.65**
<b>Other Conditions</b>					
Generalized Disgust	.39**	-.10*	-.14**	.10*	.05
Generalized Harm		-.17**	-.33**	.17**	.13**
Interpersonal Comfort			.75**	-.73**	-.56**
Sex/Gender Beliefs				-.62**	-.41**
Explicit Perceived Disgust					.60**

*Note.* GH denotes generalized harm. IC denotes interpersonal comfort. SGB

denotes sex/gender beliefs. EPD denotes explicit perceived disgust. EPH

denotes explicit perceived harm. \*  $p < .05$  \*\*  $p < .01$

## Research Question 2

I examined whether there were any reported differences in social closeness (i.e., reversed social distance score) between conditions.

### mTurk Sample

There were significant differences between conditions,  $F(3, 266) = 3.44, p = .017, \eta_G^2 = .04, 90\% \text{ CI} [.001, .08]$ . Participants in the atheist condition reported significantly lower levels of desired social closeness to the target than participants in the first-generation college student condition (i.e., control; Table 9). There were no differences in desired social closeness between the transgender conditions (male or female) and the control condition or the atheist condition.

### UNI Student Sample

There were significant differences between conditions,  $F(3, 273) = 8.99, p < .001, \eta_G^2 = .09, 90\% \text{ CI} [.03, .15]$ . Participants in the atheist condition and transgender male condition reported significantly lower levels of desired social closeness to the target than participants in the first-generation college student condition (Table 9). There were no significant differences reported in desired social closeness between the transgender female condition and all other conditions.

### VSU Student Sample

There were significant differences between conditions,  $F(3, 226) = 5.07, p = .002, \eta_G^2 = .06, 90\% \text{ CI} [.01, .12]$ . Participants in the atheist condition reported significantly lower levels of desired social closeness to the target than participants in the control



condition and participants in the transgender male condition (Table 9). There were no significant differences reported in desired social closeness between the transgender female condition and all other conditions.

Table 9

*Social Closeness Means (Standard Deviations) by Condition and Sample*

	First-generation College Student	Atheist	Transgender Male	Transgender Female
mTurk	3.54 (0.42) <sub>a</sub>	3.20 (0.78) <sub>b</sub>	3.34 (0.71) <sub>ab</sub>	3.36 (0.69) <sub>ab</sub>
UNI	3.58 (0.47) <sub>a</sub>	3.00 (0.73) <sub>b</sub>	3.22 (0.75) <sub>b</sub>	3.30 (0.80) <sub>ab</sub>
VSU	3.33 (0.68) <sub>a</sub>	2.92 (0.72) <sub>b</sub>	3.28 (0.58) <sub>a</sub>	3.16 (0.63) <sub>ab</sub>
Overall	3.50 (0.53) <sub>a</sub>	3.04 (0.75) <sub>b</sub>	3.28 (0.70) <sub>c</sub>	3.27 (0.71) <sub>c</sub>

*Note.* Different subscripts within rows indicate that groups significantly differ from each other at  $p < .05$ . Higher scores indicates a willingness to be closer to the target.

Overall

I also conducted an exploratory analysis with sample as an additional independent variable. There was a main effect of condition,  $F(3, 765) = 15.92, p < .01, \eta_G^2 = .06$ , 90% CI [.03, .08]. Participants in the atheist condition reported significantly lower levels of desired social closeness to the target than participants in the first-generation college student condition (i.e., control) and the transgender male and female conditions (Table 9). Additionally, participants in the first-generation college student condition reported

significantly more desired social closeness than in the other three conditions. There were no significant reported differences between the two transgender conditions.

There were significant differences between samples,  $F(2, 765) = 4.71, p = .009, \eta_G^2 = .01, 90\% \text{ CI } [.002, .03]$ . VSU participants reported significantly lower levels of desired social closeness overall ( $M = 3.13, SD = 0.69$ ) compared to the mTurk participants ( $M = 3.36, SD = 0.66$ ). There were no other differences among the samples. There was also not a significant interaction effect,  $F(6, 765) = 0.75, p = .61, \eta_G^2 = .006, 90\% \text{ CI } [<.001, .01]$ .

I repeated the analysis above with gender, political orientation, religious fundamentalism, the moral foundations, and positive and negative affect as covariates. Gender, political orientation, religious fundamentalism, the purity foundation, and negative affect were all significant covariates. Condition remained significant, with participants in the first-generation college student condition reporting significantly more social closeness and participants in the atheist condition reporting significantly less social closeness than all three other conditions. There was no longer an effect of sample, which suggests that some of the sample differences in social closeness may have been due to differences in political orientation, religious fundamentalism, and the moral foundations (Table 10).

Table 10

*Social Closeness ANCOVA Results*

	<i>F</i>	<i>p</i>	$\eta_G^2$
Gender	4.14*	.04	.01
Political Orientation	18.67***	< .001	.03
Religious Fundamentalism	11.46**	.001	.02
Harm Foundation	3.39	.07	.01
Fairness Foundation	1.72	.19	.003
Ingroup Foundation	1.49	.22	.002
Authority Foundation	1.02	.31	.002
Purity Foundation	8.13*	.01	.01
Positive Affect	1.42	.23	.002
Negative Affect	6.22*	.01	.01
Sample	2.73	.07	.01
Condition	18.93***	< .001	.08
Sample*Condition	0.82	.55	.01

*Note.* \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$

### Research Question 3

I examined whether the purity moral foundation moderated the relationship between condition and disgust/harm.

#### mTurk Sample

The purity foundation did not moderate the relationship between condition and generalized feelings of disgust,  $\Delta R^2 = .01$ ,  $F(3, 244) = 1.35$ ,  $p = .26$ . The purity foundation also did not moderate the relationship between condition and generalized feelings of harm,  $\Delta R^2 = .01$ ,  $F(3, 255) = 1.44$ ,  $p = .23$ .

#### UNI Student Sample

The purity foundation did not moderate the relationship between condition and generalized feelings of disgust,  $\Delta R^2 = .004$ ,  $F(3, 257) = 0.36$ ,  $p = .78$ . The purity foundation also did not moderate the relationship between condition and generalized feelings of harm,  $\Delta R^2 = .01$ ,  $F(3, 262) = 1.18$ ,  $p = .32$ .

#### VSU Student Sample

The purity foundation did not moderate the relationship between condition and generalized feelings of disgust,  $\Delta R^2 = .01$ ,  $F(3, 205) = 0.96$ ,  $p = .41$ . The purity foundation also did not moderate the relationship between condition and generalized feelings of harm,  $\Delta R^2 = .004$ ,  $F(3, 214) = 0.29$ ,  $p = .83$ .

#### Overall

Initially I planned to also test whether these moderation effects were further moderated by sample, but because the moderation effect of purity was extremely small for all samples separately, I did not test this research question further.

#### Research Question 4

I examined whether explicit perceived disgust and harm and elicited anger differed by group (i.e., first-generation college students, atheists, Evangelical Christians, conservatives, liberals, immigrants, substance abusers, and transgender people). Although perceptions of disgust, harm, and anger were moderately to highly correlated (Appendix U), I examined them separately in my analyses based on theoretical differences and past research distinguishing between these concepts (Gray et al., 2012; Haidt & Graham, 2007).

#### mTurk Sample

There were significant differences in disgust between groups,  $F(7, 1862) = 39.40$ ,  $p < .001$ ,  $\eta_G^2 = .13$ , 90% CI [.10, .15]. Transgender people were perceived to be significantly more disgusting than first-generation college students and immigrants (Table 11). Transgender people were perceived as significantly less disgusting than Evangelical Christians, substance abusers, and conservatives. There were no significant differences in perceived disgust between transgender people and liberals or atheists.

There were significant differences in harm between groups,  $F(7, 1827) = 80.28$ ,  $p < .001$ ,  $\eta_G^2 = .24$ , 90% CI [.21, .26]. Transgender people were perceived to be significantly more harmful than first-generation college students (Table 11). Transgender people were perceived as significantly less harmful than conservatives, Evangelical Christians, immigrants, liberals, and substance abusers. There were no significant differences of perceived harm between transgender people and atheists.

There were significant differences in elicited anger between groups,  $F(7, 1848) = 52.20, p < .001, \eta_G^2 = .17, 90\% \text{ CI} [.14, .18]$ . Transgender people elicited more anger than first-generation college students (Table 11), but elicited less anger than atheists, conservatives, Evangelical Christians, immigrants, liberals, and substance abusers.

Table 11

*Means (Standard Deviations) on Explicit Measures by Condition (mTurk)*

Measures	Explicit Disgust ( $n = 267$ )		Explicit Harm ( $n = 262$ )		Explicit Anger ( $n = 265$ )	
	Mean (SD)	Significance Statistics df(1, 266)	Mean (SD)	Significance Statistics df(1, 261)	Mean (SD)	Significance Statistics df(1, 264)
First-generation college students	1.42* (1.10)	$F = 45.25, p < .001$	1.54* (1.15)	$F = 25.65, p < .001$	1.34* (1.02)	$F = 26.07, p < .001$
Atheists	2.04 (1.76)	$F = .19, p = .67$	2.12 (1.64)	$F = 3.24, p = .07$	1.89* (1.62)	$F = 5.39, p = .02$
Evangelical Christians	2.73* (2.04)	$F = 15.64, p < .001$	3.24* (2.12)	$F = 51.19, p < .001$	2.85* (2.04)	$F = 55.41, p < .001$
Conservatives	2.75* (1.98)	$F = 16.65, p < .001$	3.31* (2.04)	$F = 62.49, p < .001$	3.07* (2.15)	$F = 75.96, p < .001$
Liberals	2.25 (1.85)	$F = 2.81, p = .10$	2.63* (1.89)	$F = 36.56, p < .001$	2.32* (1.91)	$F = 34.43, p < .001$
Immigrants	1.81* (1.50)	$F = 6.94, p < .01$	2.24* (1.54)	$F = 6.82, p < .05$	1.92* (1.52)	$F = 5.67, p = .02$
Substance abusers	3.18* (2.00)	$F = 81.59, p < .001$	4.16* (1.84)	$F = 309.45, p < .001$	3.09* (1.99)	$F = 147.98, p < .001$
Transgender people	2.07 (1.72)		1.99 (1.61)		1.71 (1.42)	

*Note.* The comparison condition for each column is transgender people. Higher values indicate higher amounts of reported

disgust, harm, and anger. df indicates the degrees of freedom for analyses in that column. \*  $p < .05$ .

### UNI Student Sample

There were significant differences in perceived disgust between groups,  $F(7, 1932) = 59.07, p < .001, \eta_G^2 = .18, 90\% \text{ CI } [.15, .20]$ . Transgender people were perceived to be significantly more disgusting than first-generation college students, Evangelical Christians, and immigrants (Table 12). Transgender people were perceived as significantly less disgusting than substance abusers. There were no significant differences on perceived disgust between transgender people and atheists, conservatives, or liberals.

There were significant differences in perceived harm between groups,  $F(7, 1939) = 102.05, p < .001, \eta_G^2 = .27, 90\% \text{ CI } [.24, .29]$ . Transgender people were perceived to be significantly more harmful than first-generation college students (Table 12) and were perceived as significantly less harmful than atheists, Evangelical Christians, conservatives, liberals, immigrants, and substance abusers.

There were significant differences in elicited anger between groups,  $F(7, 1946) = 48.77, p < .001, \eta_G^2 = .15, 90\% \text{ CI } [.12, .17]$ . Transgender people elicited more reported anger than Evangelical Christians, first-generation college students, and immigrants (Table 12). Transgender people elicited less reported anger than atheists, liberals, and substance abusers. There were no significant differences on reported anger between transgender people and conservatives.



Table 12

*Means (Standard Deviations) on Explicit Measures by Condition (UNI students)*

Measures	Explicit Disgust ( $n = 276$ )		Explicit Harm ( $n = 278$ )		Explicit Anger ( $n = 279$ )	
	Mean (SD)	Significance Statistics df(1, 275)	Mean (SD)	Significance Statistics df(1, 277)	Mean (SD)	Significance Statistics df(1, 278)
First-generation college students	1.21* (0.71)	$F = 96.04, p < .001$	1.28* (0.77)	$F = 16.17, p < .001$	1.15* (0.58)	$F = 68.65, p < .001$
Atheists	2.11 (1.75)	$F = 3.64, p = .06$	1.88* (1.39)	$F = 16.26, p < .001$	2.27* (1.85)	$F = 9.58, p = .002$
Evangelical Christians	1.61* (1.29)	$F = 26.78, p < .001$	1.79* (1.37)	$F = 5.01, p = .03$	1.67* (1.38)	$F = 4.90, p = .03$
Conservatives	1.99 (1.66)	$F = 3.88, p = .05$	2.28* (1.69)	$F = 34.48, p < .001$	2.19 (1.74)	$F = 2.95, p = .09$
Liberals	2.26 (1.87)	$F = 0.10, p = .75$	2.29* (1.63)	$F = 83.71, p < .001$	2.53* (1.98)	$F = 36.68, p < .001$
Immigrants	1.53* (1.07)	$F = 66.56, p < .001$	1.90* (1.30)	$F = 21.00, p < .001$	1.67* (1.19)	$F = 11.87, p = .001$
Substance abusers	3.25* (1.88)	$F = 63.76, p < .001$	3.67* (1.72)	$F = 364.16, p < .001$	3.02* (1.89)	$F = 76.75, p < .001$
Transgender people	2.30 (1.89)		1.57 (1.19)		1.94 (1.66)	

*Note.* The comparison condition for each row is transgender people. Higher values indicate higher amounts of reported disgust, harm, and anger. df indicates the degrees of freedom for analyses in that column. \*  $p < .05$ .

### VSU Student Sample

There were significant differences in perceived disgust,  $F(7, 1624) = 53.69, p < .001, \eta_G^2 = .19, 90\% \text{ CI } [.16, .21]$ . Transgender people were perceived to be significantly more disgusting than first-generation college students, Evangelical Christians, liberals, and immigrants (Table 13). Transgender people were perceived as significantly less disgusting than substance abusers. There were no significant differences on perceived disgust between transgender people and atheists or conservatives.

There were significant differences in perceived harm,  $F(7, 1645) = 133.88, p < .001, \eta_G^2 = .36, 90\% \text{ CI } [.33, .39]$ . Transgender people were perceived to be significantly more harmful than first-generation college students (Table 13). Transgender people were perceived as significantly less harmful than atheists, Evangelical Christians, conservatives, liberals, immigrants, and substance abusers.

There were significant differences in elicited anger,  $F(7, 1624) = 40.27, p < .001, \eta_G^2 = .15, 90\% \text{ CI } [.12, .17]$ . Transgender people elicited more reported anger than first-generation college students and immigrants (Table 13). Transgender people elicited less reported anger than atheists, conservatives, liberals, and substance abusers. There were no significant differences between transgender people and Evangelical Christians.

Table 13

*Means (Standard Deviations) on Explicit Measures by Condition (VSU students)*

Measures	Explicit Disgust ( $n = 233$ )		Explicit Harm ( $n = 236$ )		Explicit Anger ( $n = 233$ )	
	Mean (SD)	Significance Statistics df(1, 232)	Mean (SD)	Significance Statistics df(1, 235)	Mean (SD)	Significance Statistics df(1, 232)
First-generation college students	1.20* (0.78)	$F = 72.19, p < .001$	1.33* (0.87)	$F = 8.72, p = .003$	1.23* (0.77)	$F = 38.08, p < .001$
Atheists	2.34 (2.08)	$F = 1.26, p = .26$	2.25* (1.74)	$F = 46.40, p < .001$	2.37* (2.02)	$F = 32.73, p < .001$
Evangelical Christians	1.52* (1.17)	$F = 24.99, p < .001$	1.74* (1.36)	$F = 5.88, p = .02$	1.70 (1.38)	$F = 0.25, p = .62$
Conservatives	1.89 (1.63)	$F = 3.91, p = .05$	2.33* (1.82)	$F = 42.48, p < .001$	2.18* (1.85)	$F = 8.44, p = .004$
Liberals	1.97* (1.59)	$F = 4.18, p = .04$	2.06* (1.46)	$F = 47.76, p < .001$	2.10* (1.74)	$F = 11.29, p = .001$
Immigrants	1.36* (0.95)	$F = 59.25, p < .001$	1.78* (1.16)	$F = 14.86, p < .001$	1.58* (1.26)	$F = 4.73, p = .03$
Substance abusers	3.19* (2.16)	$F = 55.73, p < .001$	4.33* (1.96)	$F = 454.36, p < .001$	3.07* (2.13)	$F = 106.74, p < .001$
Transgender people	2.19 (1.87)		1.51 (1.14)		1.76 (1.46)	

*Note.* The comparison condition for each row is transgender people. Higher values indicate higher amounts of reported disgust,

harm, and anger. df indicates the degrees of freedom for analyses in that column. \*  $p < .05$ .

### Overall

Disgust. There were also differences in disgust when combining data from all samples,  $F(7, 5418) = 127.11, p < .001, \eta_G^2 = .14, 90\% \text{ CI } [.13, .15]$ . Transgender people were perceived as more disgusting than first-generation college students, immigrants, and Evangelical Christians; however, they were perceived as less disgusting than substance abusers (Table 14). There were significant differences in explicit disgust between samples,  $F(2, 774) = 7.11, p = .001, \eta_G^2 = .02, 90\% \text{ CI } [.004, .04]$ . Participants from mTurk reported significantly higher levels of disgust compared to both UNI and VSU student samples; however, the two student samples did not have any significant differences in overall reported disgust (Figure 3).

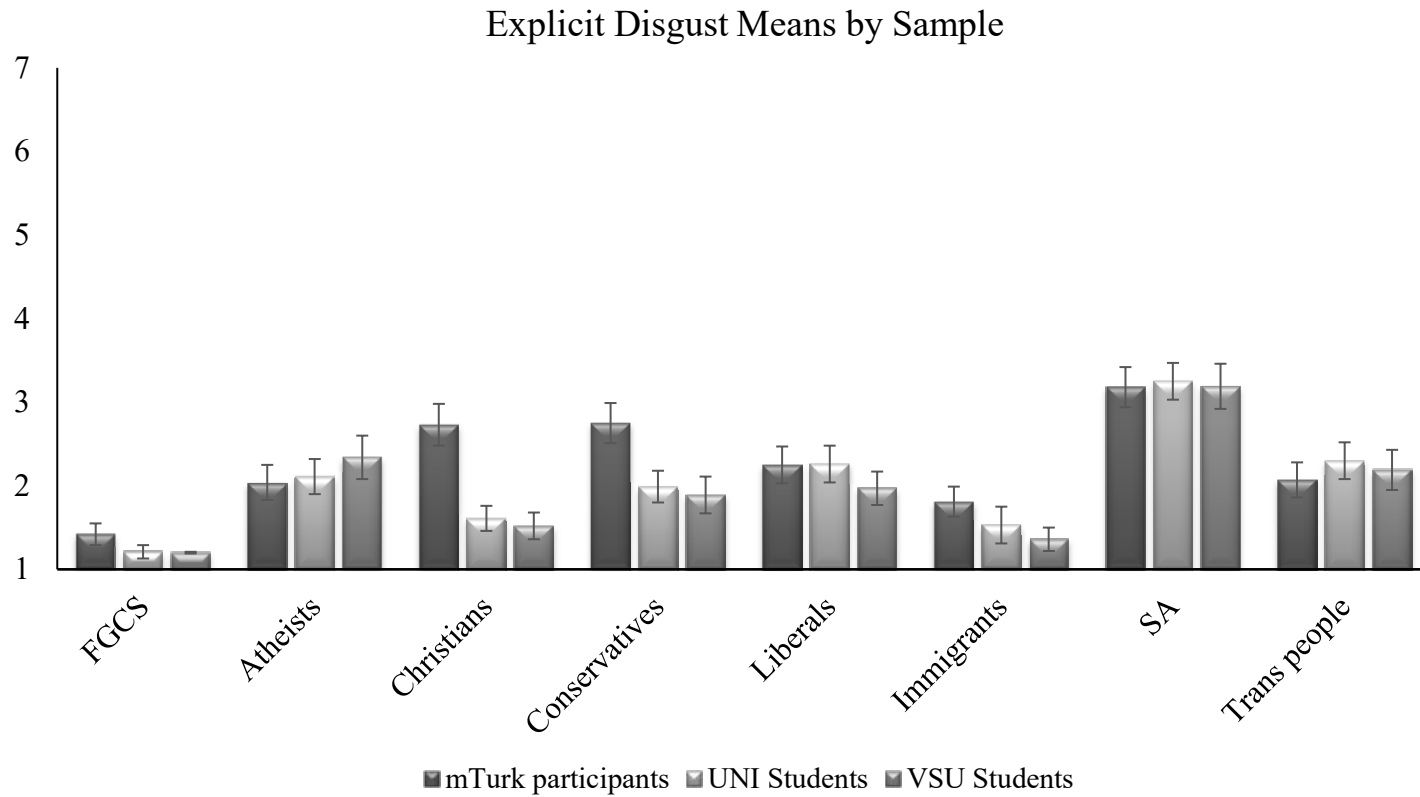
There was also a significant interaction between sample and group,  $F(14, 5418) = 11.05, p < .001, \eta_G^2 = .03, 90\% \text{ CI } [.02, .03]$ . Participants from mTurk reported significantly higher levels of disgust for conservatives,  $F(2, 788) = 16.81, p < .001, \eta_G^2 = .04, 90\% \text{ CI } [.02, .06]$ , first-generation college students,  $F(2, 788) = 5.12, p = .006, \eta_G^2 = .01, 90\% \text{ CI } [.002, .03]$ , immigrants,  $F(2, 787) = 7.25, p = .001, \eta_G^2 = .02, 90\% \text{ CI } [.005, .03]$ , and Evangelical Christians,  $F(2, 787) = 48.62, p < .001, \eta_G^2 = .11, 90\% \text{ CI } [.08, .14]$  compared to both the UNI and VSU student samples. There were no differences between the two student samples for any of these groups. There were also no significant differences between samples in perceived explicit disgust of atheists,  $F(2, 785) = 2.06, p = .13, \eta_G^2 = .01, 90\% \text{ CI } [<.001, .02]$ , liberals,  $F(2, 785) = 1.80, p = .17, \eta_G^2 = .01, 90\% \text{ CI } [<.001, .01]$ , substance abusers,  $F(2, 789) = 0.14, p = .87, \eta_G^2 < .001, 90\% \text{ CI } [<.001, .01]$ .

[<.001, .003] and transgender people,  $F(2, 788) = 1.09, p = .34, \eta_G^2 = .003, 90\% \text{ CI}$   
 [<.001, .01].

*Explicit Disgust Means (Standard Deviations) by Condition and Sample*

Table 14 Measures	mTurk participants	UNI Students	VSU Students
First-generation college students	1.42 (1.10) <sub>a</sub>	1.21 (0.71) <sub>b</sub>	1.20 (0.78) <sub>b</sub>
Atheists	2.04 (1.76) <sub>a</sub>	2.11 (1.75) <sub>a</sub>	2.34 (2.08) <sub>a</sub>
Evangelical Christians	2.73 (2.04) <sub>a</sub>	1.61 (1.29) <sub>b</sub>	1.52 (1.17) <sub>b</sub>
Conservatives	2.75 (1.98) <sub>a</sub>	1.99 (1.66) <sub>b</sub>	1.89 (1.63) <sub>b</sub>
Liberals	2.25 (1.85) <sub>a</sub>	2.26 (1.87) <sub>a</sub>	1.97 (1.59) <sub>a</sub>
Immigrants	1.81 (1.50) <sub>a</sub>	1.53 (1.07) <sub>b</sub>	1.36 (0.95) <sub>b</sub>
Substance abusers	3.18 (2.00) <sub>a</sub>	3.25 (1.88) <sub>a</sub>	3.19 (2.16) <sub>a</sub>
Transgender people	2.07 (1.72) <sub>a</sub>	2.30 (1.89) <sub>a</sub>	2.19 (1.87) <sub>a</sub>

*Note.* The comparison condition for each row is transgender people. Higher values indicate higher amounts of reported disgust, harm, and anger. Subscripts within rows indicate samples significantly differ from each other at  $p < .05$ .



*Figure 3.* FGCS denotes first-generation college students. SA denotes substance abuser. Trans denotes transgender.

Error bars represent the 90% confidence intervals for the effect sizes.

Perceived Harm. There were significant differences between groups  $F(7, 5411) = 279.57, p < .001, \eta_G^2 = .27, 90\% \text{ CI } [.25, .28]$ . Across all three samples, transgender people were perceived as more harmful than first-generation college students; however, they were perceived as less harmful than substance abusers (Table 15). There were significant differences in perceived harm between samples,  $F(2, 773) = 29.44, p < .001, \eta_G^2 = .07, 90\% \text{ CI } [.05, .10]$ . Participants from mTurk reported significantly higher levels of perceived harm than both UNI and VSU student samples; however, there were no significant differences in perceived harm for the two student samples (Figure 4).

There were significant interaction effects of sample by group,  $F(14, 5411) = 13.67, p < .001, \eta_G^2 = .03, 90\% \text{ CI } [.02, .04]$ . Participants from mTurk reported significantly higher levels of perceived harm for conservatives,  $F(2, 788) = 25.25, p < .001, \eta_G^2 = .06, 90\% \text{ CI } [.03, .09]$ , first-generation college students,  $F(2, 789) = 4.46, p = .01, \eta_G^2 = .01, 90\% \text{ CI } [.001, .02]$ , liberals,  $F(2, 790) = 7.01, p = .001, \eta_G^2 = .01, 90\% \text{ CI } [.004, .03]$  immigrants,  $F(2, 785) = 7.22, p = .001, \eta_G^2 = .02, 90\% \text{ CI } [.005, .03]$ , transgender people,  $F(2, 789) = 8.42, p < .001, \eta_G^2 = .02, 90\% \text{ CI } [.01, .04]$ , and Evangelical Christians,  $F(2, 790) = 66.78, p < .001, \eta_G^2 = .15, 90\% \text{ CI } [.11, .18]$ , compared to both the UNI and VSU student samples. There were no differences among the two student samples for these groups; however, there were differences among the student samples for other groups. Students from UNI reported lower levels of perceived harm for atheists,  $F(2, 790) = 3.71, p = .03, \eta_G^2 = .01, 90\% \text{ CI } [.001, .02]$  compared to the VSU students. Additionally, both mTurk participants and the UNI student sample

reported higher levels of perceived harm for substance abusers compared to the VSU student sample,  $F(2, 789) = 8.96, p < .001, \eta_G^2 = .02, 90\% \text{ CI } [.01, .04]$ .

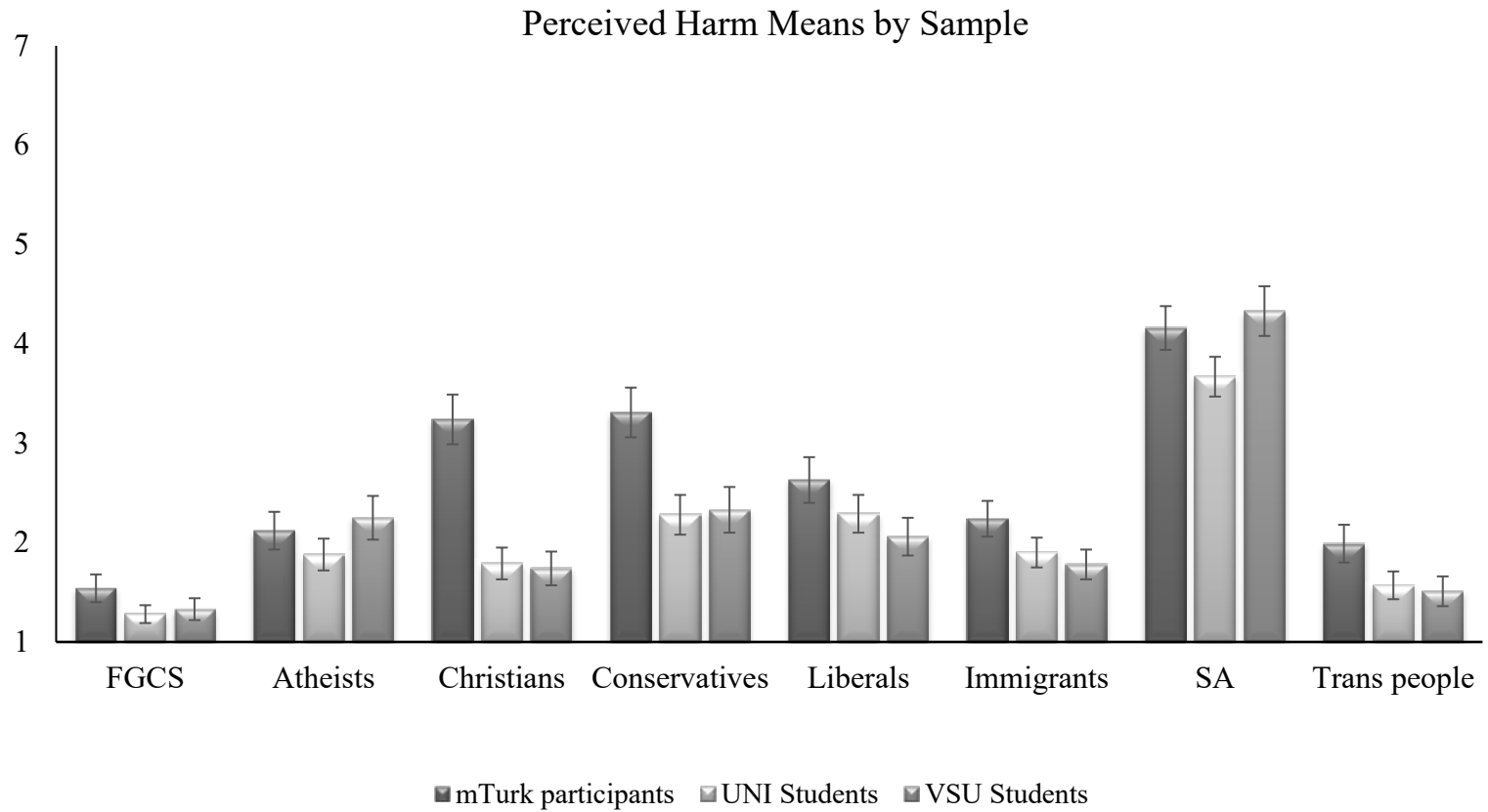
Table 15

*Perceived Harm Means (Standard Deviations) by Condition and Sample*

Measures	mTurk participants	UNI Students	VSU Students
First-generation college students	1.54 (1.15) <sub>a</sub>	1.28 (0.77) <sub>b</sub>	1.33 (0.87) <sub>b</sub>
Atheists	2.12 (1.64) <sub>ab</sub>	1.88 (1.39) <sub>b</sub>	2.25 (1.74) <sub>a</sub>
Evangelical Christians	3.24 (2.12) <sub>a</sub>	1.79 (1.37) <sub>b</sub>	1.74 (1.36) <sub>b</sub>
Conservatives	3.31 (2.04) <sub>a</sub>	2.28 (1.69) <sub>b</sub>	2.33 (1.82) <sub>b</sub>
Liberals	2.63 (1.89) <sub>a</sub>	2.29 (1.63) <sub>b</sub>	2.06 (1.46) <sub>b</sub>
Immigrants	2.24 (1.54) <sub>a</sub>	1.90 (1.30) <sub>b</sub>	1.78 (1.16) <sub>b</sub>
Substance abusers	4.16 (1.84) <sub>a</sub>	3.67 (1.72) <sub>b</sub>	4.33 (1.96) <sub>a</sub>
Transgender people	1.99 (1.61) <sub>a</sub>	1.57 (1.19) <sub>b</sub>	1.51 (1.14) <sub>b</sub>

*Note.* The comparison condition for each row is transgender people. Higher values indicate higher amounts of reported disgust, harm, and anger. Subscripts within rows indicate samples that significantly differ from each other at  $p < .05$ .





*Figure 4.* FGCS denotes first-generation college students. SA denotes substance abuser. Trans denotes transgender. Error bars represent the 90% confidence intervals for the effect sizes.

Anger. There were significant differences between groups  $F(7, 5418) = 114.73, p < .001, \eta_G^2 = .13, 90\% \text{ CI } [.11, .14]$ . Across all three samples, transgender people elicited more reported anger than first-generation college students; however, they elicited less reported anger than atheists and substance abusers (Table 16). There were significant differences in reported anger between samples,  $F(2, 774) = 5.57, p = .004, \eta_G^2 = .01, 90\% \text{ CI } [.003, .03]$ . Overall, mTurk participants reported significantly higher levels of anger compared to the two college student samples; however, the two student samples did not have any significant differences in elicited anger (Figure 5).

There were significant interaction effects of sample by group for reported anger,  $F(14, 5418) = 13.20, p < .001, \eta_G^2 = .03, 90\% \text{ CI } [.02, .04]$ . Participants from mTurk reported significantly higher levels of anger for conservatives,  $F(2, 786) = 18.50, p < .001, \eta_G^2 = .05, 90\% \text{ CI } [.02, .07]$ , and Evangelical Christians,  $F(2, 789) = 45.42, p < .001, \eta_G^2 = .10, 90\% \text{ CI } [.07, .14]$ , and lower levels of anger for atheists,  $F(2, 785) = 5.59, p = .004, \eta_G^2 = .01, 90\% \text{ CI } [.003, .03]$ , compared to both the UNI and VSU student samples. Participants from mTurk reported higher levels of anger compared to UNI student sample, but not the VSU student sample for first-generation college students,  $F(2, 789) = 3.71, p = .03, \eta_G^2 = .01, 90\% \text{ CI } [.001, .02]$ . Participants from mTurk reported higher levels of anger compared to VSU student sample, but not the UNI student sample for immigrants,  $F(2, 785) = 4.34, p = .01, \eta_G^2 = .01, 90\% \text{ CI } [.001, .02]$ . The UNI student sample reported higher levels of anger for liberals than the VSU student sample,  $F(2, 786) = 3.01, p = .05, \eta_G^2 = .02, 90\% \text{ CI } [<.001, .02]$ . There were no differences between any of the samples for substance abusers,  $F(2, 788) = 0.11, p = .90, \eta_G^2 < .001,$

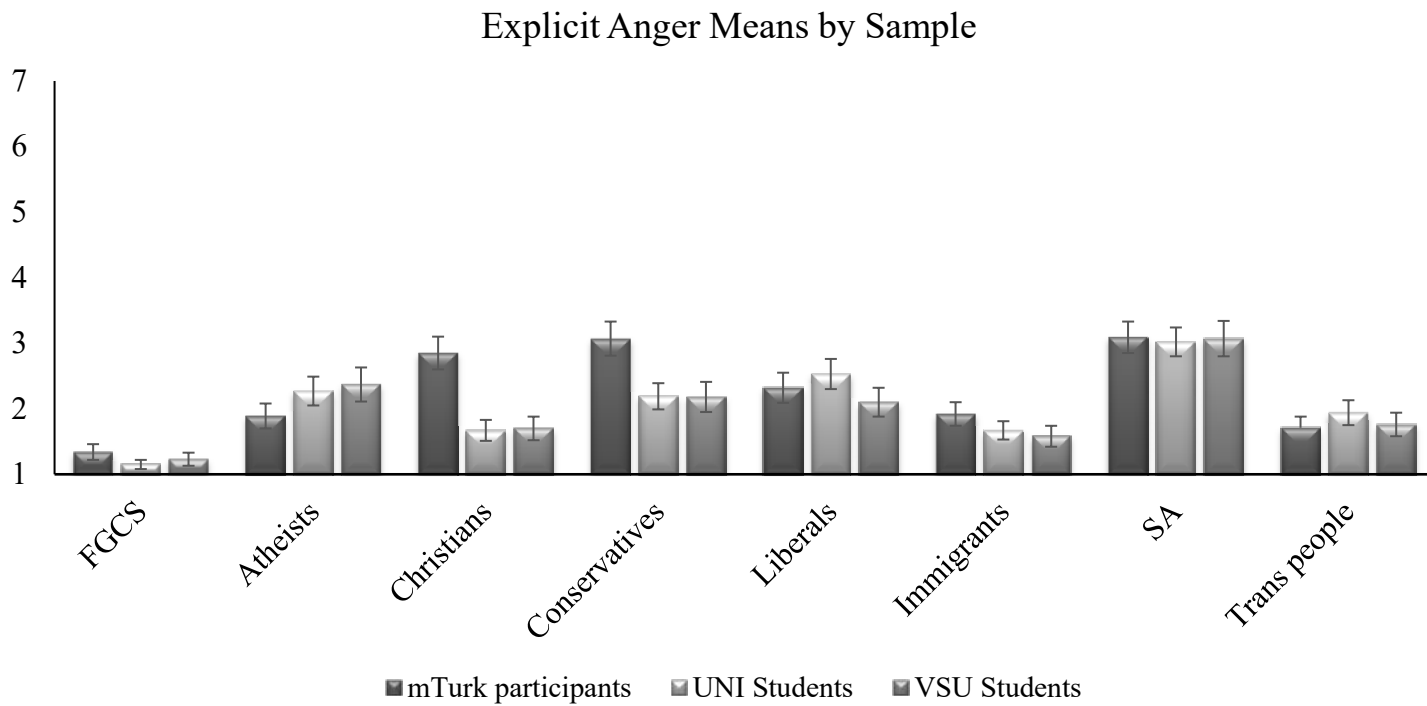
90% CI [ $<.001, .002$ ], and transgender people,  $F(2, 788) = 1.92, p = .15, \eta_G^2 = .01, 90\%$  CI [ $<.001, .01$ ].

Table 16

*Anger Means (Standard Deviations) by Condition and Sample*

Measures	mTurk participants	UNI Students	VSU Students
First-generation college students	1.34 (1.02) <sub>a</sub>	1.15 (0.58) <sub>b</sub>	1.23 (0.77) <sub>a</sub>
Atheists	1.89 (1.62) <sub>a</sub>	2.27 (1.85) <sub>b</sub>	2.37 (2.02) <sub>b</sub>
Evangelical Christians	2.85 (2.04) <sub>a</sub>	1.67 (1.38) <sub>b</sub>	1.70 (1.38) <sub>b</sub>
Conservatives	3.07 (2.15) <sub>a</sub>	2.19 (1.74) <sub>b</sub>	2.18 (1.85) <sub>b</sub>
Liberals	2.32 (1.91) <sub>a</sub>	2.53 (1.98) <sub>b</sub>	2.10 (1.74) <sub>b</sub>
Immigrants	1.92 (1.52) <sub>a</sub>	1.67 (1.19) <sub>ab</sub>	1.58 (1.26) <sub>b</sub>
Substance abusers	3.09 (1.99) <sub>a</sub>	3.02 (1.89) <sub>a</sub>	3.07 (2.13) <sub>a</sub>
Transgender people	1.71 (1.42) <sub>a</sub>	1.94 (1.66) <sub>a</sub>	1.76 (1.46) <sub>a</sub>

*Note.* The comparison condition for each row is transgender people. Higher values indicate higher amounts of reported disgust, harm, and anger. Subscripts within row indicate samples that significantly differ from each other at  $p < .05$ .



*Figure 5.* FGCS denotes first-generation college students. SA denotes substance abuser. Trans denotes transgender.

Error bars represent the 90% confidence intervals for the effect sizes.

### Exploratory Question 1

I examined differences by sample as an additional independent variable for three of the main research questions. The results for these questions were reported after each relevant analysis.

### Exploratory Question 2

I examined whether the three samples differed on moral foundations, transgender attitudes, and religious fundamentalism.

For moral foundations, there were significant differences between the three samples for the harm foundation,  $F(2, 780) = 6.87, p = .001, \eta_G^2 = .02, 90\% \text{ CI } [<.01, .03]$ , the fairness foundation,  $F(2, 781) = 8.13, p < .001, \eta_G^2 = .02, 90\% \text{ CI } [.01, .04]$ , the ingroup foundation,  $F(2, 778) = 22.15, p < .001, \eta_G^2 = .06, 90\% \text{ CI } [.04, .08]$ , the authority foundation,  $F(2, 778) = 22.00, p < .001, \eta_G^2 = .05, 90\% \text{ CI } [.03, .08]$ , and the purity foundation,  $F(2, 770) = 13.69, p < .001, \eta_G^2 = .03, 90\% \text{ CI } [.02, .06]$ . Participants from mTurk and VSU students emphasized the harm and fairness foundations more than UNI students. Participants from the college student samples also emphasized the ingroup and authority foundations more than the mTurk participants; however, there were no differences between the college samples for these foundations. Lastly, the VSU students emphasized the purity foundation more than the mTurk participants and UNI students (Table 17).

There were significant differences between the three samples on the subscales of the Transgender Attitudes and Beliefs Scale (Kanamori et al., 2016) for interpersonal comfort,  $F(2, 767) = 5.34, p = .01, \eta_G^2 = .01, 90\% \text{ CI } [.002, .03]$  and sex/gender beliefs,

$F(2, 749) = 15.44, p < .001, \eta_G^2 = .04, 90\% \text{ CI } [.02, .06]$ . Participants from mTurk reported significantly higher levels of interpersonal comfort with transgender people than did UNI students, but not VSU students. There were no significant differences for interpersonal comfort between the two college student samples. Participants from mTurk reported having a better understanding that sex and gender are two separate constructs (i.e., higher levels of sex/gender beliefs) compared to both UNI and VSU students; however, the two college student samples did not significantly differ (Table 17).

There were significant differences between the three samples on religious fundamentalism,  $F(2, 773) = 48.77, p < .001, \eta_G^2 = .11, 90\% \text{ CI } [.08, .15]$ . Participants from UNI and VSU reported significantly more religious fundamentalism than mTurk participants. Additionally, VSU students reported significantly more religious fundamentalism than did UNI students (Table 17).

Table 17

*Means (Standard Deviations) of Dependent Variables by Sample*

Measures	mTurk participants	UNI Students	VSU Students
Harm Foundation	27.21 (5.15) <sub>a</sub>	25.74 (4.93) <sub>b</sub>	26.61 (5.01) <sub>a</sub>
Fairness Foundation	26.85 (5.14) <sub>a</sub>	25.55 (4.33) <sub>b</sub>	27.09 (4.80) <sub>a</sub>
Ingroup Foundation	20.16 (6.02) <sub>a</sub>	23.32 (5.01) <sub>b</sub>	22.21 (5.82) <sub>b</sub>
Authority Foundation	21.96 (5.81) <sub>a</sub>	24.33 (4.72) <sub>b</sub>	24.77 (4.89) <sub>b</sub>
Purity Foundation	19.87 (7.60) <sub>a</sub>	20.71 (5.18) <sub>a</sub>	22.75 (5.68) <sub>b</sub>
Interpersonal Comfort	5.43 (1.52) <sub>a</sub>	5.04 (1.51) <sub>b</sub>	5.34 (1.34) <sub>ab</sub>
Sex/Gender Beliefs	4.70 (1.61) <sub>a</sub>	4.14 (1.50) <sub>b</sub>	3.97 (1.47) <sub>b</sub>
Religious Fundamentalism	3.48 (2.12) <sub>a</sub>	4.23 (1.58) <sub>b</sub>	5.14 (1.84) <sub>c</sub>

*Note.* Subscripts within rows indicate samples that significantly differ from each other at  $p < .05$ .

### Exploratory Question 3

I examined whether there were correlations among transgender interpersonal comfort, sex/gender beliefs, contact with transgender people, explicit perceived disgust and harm and elicited anger of transgender people, the moral foundations, political orientation, and religious fundamentalism. Initially, I conducted separate correlation analyses for each sample; however, the correlations appeared to be relatively consistent across samples, therefore I reported the overall correlations with all samples included in the analysis (Table 18; Table 19). Across all three samples, positive attitudes toward transgender interpersonal comfort was related to higher levels of understanding of the distinction between sex and gender, more contact with transgender people, positive evaluations regarding explicit perceived disgust and harm and elicited anger, higher levels of reported emphasis on the harm and fairness foundations, lower levels of reported emphasis on the ingroup, authority, and purity foundations, political liberalism, and lower levels of religious fundamentalism.



Table 18

*Inter-Correlation of Dependent Variables with Means and Standard Deviations*

	SGB	Contact	EPD	EPH	EEA	Harm	Fairness	Ingroup	Authority	Purity	PO	RF
Transgender Interpersonal Comfort	.74**	.34**	-.72**	-.57**	-.62**	.26**	.31**	-.35**	-.34**	-.42**	.58**	-.46**
Sex/Gender Beliefs		.34**	-.61**	-.42**	-.49**	.17**	.23**	-.39**	-.45**	-.52**	.64**	-.59**
Contact with Transgender People			-.23**	-.15**	-.17**	.05	.06	-.17**	-.21**	-.26**	.27**	-.25**
Explicit Perceived Disgust				.61**	.77**	-.14**	-.18**	.30**	.29**	.34**	-.45**	.37**
Explicit Perceived Harm					.63**	-.16**	-.20**	.17**	.17**	.26**	-.34**	.26**
Explicit Elicited Anger						-.14**	-.18**	.26**	.23**	.29**	-.37**	.30**
Harm Foundation							.72**	.22**	.21**	.19**	.19**	-.03
Fairness Foundation								.16**	.18**	.13**	.27**	-.15**
Ingroup Foundation									.73**	.58**	-.41**	.40**
Authority Foundation										.69**	-.45**	.47**
Purity Foundation											-.43**	.63**
Political Orientation												-.49**

*Note.* Contact with transgender people ranged from 0 to 4 and is coded with higher numbers indicating more contact. Higher political

orientation scores indicate more politically liberal. \* $p < .05$  \*\*  $p < .01$

Table 19

*Means and SDs of Dependent Variables*


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Measure	<i>M</i>	<i>SD</i>	<i>N</i>
Transgender Interpersonal Comfort	5.26	1.47	770
Sex/Gender Beliefs	4.28	1.56	752
Contact with Transgender People	0.49	0.66	799
Explicit Perceived Disgust	2.19	1.82	791
Explicit Perceived Harm	1.69	1.36	792
Explicit Elicited Anger	1.81	1.52	791
Harm Foundation	26.61	5.01	783
Fairness Foundation	26.46	4.80	784
Ingroup Foundation	21.91	5.77	781
Authority Foundation	23.65	5.33	781
Purity Foundation	21.03	6.36	773
Political Orientation	3.24	1.07	778
Religious Fundamentalism	4.25	1.97	776

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### Non-Preregistered Evaluation and Qualitative Analyses

I also examined non-preregistered exploratory questions regarding the scholarship applicant and how people felt about transgender people. Participants indicated how much they agreed with the statement that the applicant was a leader on their college campus and how much the scholarship applicant deserved the scholarship. Additionally, participants were asked to write a letter of recommendation for the scholarship applicant after reading the application and to answer how they felt about transgender people toward the end of the study.

#### Quantitative Evaluation of Scholarship Applicant

Leader. There were significant differences between conditions for endorsement of the scholarship applicant as a leader,  $F(3, 786) = 3.51, p = .02, \eta_G^2 = .01, 90\% \text{ CI } [.001, .03]$ . The transgender female scholarship applicant was viewed as more of a leader than the atheist scholarship applicant. There were not any additional significant differences (Table 20).

Deserving. There were significant differences between conditions for deservingness of the scholarship applicant,  $F(3, 785) = 23.87, p < .001, \eta_G^2 = .08, 90\% \text{ CI } [.05, .11]$ . The atheist applicant was viewed as being significantly less deserving of the scholarship than the other three applicants. There were not any additional significant differences (Table 20).

Table 20

*Means (Standard Deviations) of Quantitative Evaluation of Scholarship Applicant*

Measures	First-Generation College Student	Atheist	Transgender Male	Transgender Female
Leadership	5.72 (1.52) <sub>ab</sub>	5.45 (1.57) <sub>a</sub>	5.75 (1.61) <sub>ab</sub>	5.95 (1.55) <sub>b</sub>
Deserving	4.26 (0.89) <sub>b</sub>	3.68 (1.20) <sub>a</sub>	4.34 (0.90) <sub>b</sub>	4.39 (0.89) <sub>b</sub>

*Note.* Different subscripts in a row indicate significance at the  $p < .01$  level.

The leadership scale ranged from 1 to 7, with higher numbers indicating a stronger agreement that the applicant was a leader on their campus. The deserving scale ranged from 1 to 5, with higher numbers indicating more deservingness.

### Descriptive Evaluation of Scholarship Applicant

Letters of Recommendation. Overall, the letters of recommendation did not appear to differ much on surface level. The letters were mostly positive for all conditions. For the first-generation college student, almost all participants spoke positively of the applicant and wrote in favor of the applicant being given the scholarship. For the atheist condition, the majority of the participants endorsed the applicant for the scholarship; however, more participants mentioned the applicant's identity negatively and said that they would not endorse the applicant or that they had trouble with their decision based on the applicant's atheist identity. Further, some participants did not endorse the atheist applicant because they believed that the applicant focused too much on atheism and not

enough on being a leader on their campus. For the transgender conditions, there were instances where the wrong pronouns were used for the applicant (e.g., used “he” for the transgender female); however, even in those cases, the letters tended to be relatively positive and most participants advocated for the student to receive the award. There were even responses that mentioned the participant’s lack of acceptance of the transgender applicant, but their willingness to endorse them for the scholarship based on a good application. Although most letters spoke positively about the transgender applicant, there were a few letters that spoke negatively about the applicant’s transgender identity, suggesting that the applicant was not a leader, but rather an activist. In the cases where participants advocated against the transgender applicant, they used reasons such as that they thought that the applicant focused too much on the transgender community on their campus rather than leadership qualities all over campus or the application lacking details.

Feelings about Transgender People. Most participants appeared to respond positively about transgender people, stated that they had no problem with people who identify as transgender, or were indifferent about people who identify as transgender. Some participants stated that they believe that transgender people need to be more accepted and that they feel bad for what transgender people have to go through (e.g., discrimination). Some participants mentioned in their comments that they had a lack of understanding of transgender people. There were also several negative responses. These negative responses suggested that identifying as transgender is a mental illness ( $n = 26$ ), that there are only two genders ( $n = 7$ ), and/or that they were uncomfortable around

transgender people ( $n = 17$ ). Some participants mentioned religious beliefs ( $n = 25$ ) or biology ( $n = 14$ ) as supporting reasons for their responses.

## CHAPTER 5

### DISCUSSION

#### Summary of Results

Overall, there were no effects of the prime; thinking about a transgender scholarship applicant did not lead to feelings of generalized disgust or harm. Participants reported the least desired social distance toward the first-generation college student applicant and the most toward the atheist applicant. Across all samples, transgender people were perceived as more disgusting and harmful and elicited more anger than some but not all groups; however, generally transgender people were viewed relatively positively across all three samples. Negative attitudes toward transgender people were related to lower levels of the distinction between sex and gender, lower contact with transgender people, negative explicit ratings of transgender people, the “binding” moral foundations, political conservatism, and religious fundamentalism.

#### Evaluations of the Scholarship Applicant

##### Generalized Feelings

Participants across three samples did not report more generalized feelings of disgust or harm after being exposed to the scholarship application of a transgender target than a first-generation college student or atheist target. One explanation for this result is that the prime may not have been strong enough to evoke any automatic responses of disgust or harm. Alternatively, participants may have been too aware of the prime. It would be relatively unusual to see a scholarship applicant discuss their transgender identity, as transgender people comprise a relatively small portion of the population. For

a priming effect to occur, participants cannot be aware of what researchers are trying to prime, because this will result in the prime not being effective (Molden, 2014).

Another explanation for the ineffectiveness of the prime is that the application may have primed something other than the identity mentioned in the application. The prime included a leadership scholarship application that mentioned an identity to indicate why the applicant should be awarded the scholarship. The use of a scholarship scenario could have primed “fairness” instead. Participants may have tried to evaluate the applicant fairly, rather than solely focusing on the identity-specific information provided. Consistent with this possibility, across all three samples, there were very few letters of recommendations that advocated against the scholarship being awarded to the applicant based on their identity alone, with the exception of those in the atheist condition.

A fourth possibility is that the prime was not effective because samples used in this study may not have had negative attitudes toward transgender people. If people did not hold the hypothesized association (e.g., that transgender people are disgusting or harmful and defy moral conventions), then being exposed to the prime should have no effect on feelings of disgust or harm (Klatzky & Creswell, 2014). Attitudes on the explicit measures of attitudes and feelings about transgender people were fairly positive, although participants did report less social comfort with transgender people than first-generation college students. Further, there were some comments in the transgender conditions suggesting that the target should not be awarded the scholarship because the applicant focused too much on the transgender community and not enough on the rest of the college campus, which is reminiscent of the concept of aversive racism (Dovidio &



Gaertner, 2004). Consistent with the idea that the prime should only be effective for those with negative attitudes, participants in the transgender conditions who held more negative attitudes toward transgender people did report slightly higher levels of disgust sensitivity and beliefs in a dangerous world. Similar correlations were found for those in the other conditions as well, however, suggesting that people with more negative attitudes toward transgender people may be more sensitive to disgust and view the world as a more dangerous place regardless of the prime.

These possible explanations are consistent with the current “priming controversy” (Yong, 2012) in social psychology, which has been fueled by inabilities to replicate some priming effects (e.g., Pashler, Coburn, & Harris, 2012). Failures to replicate may be due to spurious effects or to sensitivities of primes to populations and contexts (Cesario, 2014). Researchers should directly replicate this study with other samples to examine whether these results were based on the samples used in this study or whether the prime is not effective (Doyen, Klein, Simons, & Cleeremans, 2014). Researchers also suggest that priming effects be directly replicated within one lab multiple times to establish a large effect size and support for the prime (Cesario, 2014).

### Specific Evaluations

Participants from Midwestern student samples who evaluated the atheist and transgender male scholarship applicants reported lower levels of desired social closeness than those who evaluated the first-generation college student applicant. Additionally, students from the Southeastern student sample who evaluated the atheist applicant reported lower levels of desired social closeness than participants who evaluated the first-

generation college student and the transgender male applicant. When all three samples were combined, participants reported more desired social closeness to the first-generation college student compared to the other three conditions. Further, participants who evaluated the transgender female applicant reported that this applicant was more of a leader than the atheist applicant, and participants rated the atheist applicant as least deserving. These results suggest that transgender females may at least sometimes be viewed more positively than transgender males, which seems to contradict the fact that transgender women are one of the most targeted groups of hate violence in the LGBTQ+ community (NCVAP, 2013). It is possible that because leadership is associated with the male gender role (Eagly & Karau, 2002) and some participants may not acknowledge a transgender women's identity as a woman, transgender women may be perceived as more likely to be leaders than transgender men. On the other hand, participants may have felt more empathy for the transgender woman because of her identity as a woman.

#### Self-reported Explicit Feelings toward Various Groups

Transgender people were perceived as more disgusting and harmful and as eliciting more anger than the control group of first-generation college students, whereas they were perceived as less disgusting and harmful and as eliciting less anger than substance abusers across all three samples. Substance abusers experience a great deal of stigma (Luoma et al., 2007). Substance abuse may be viewed as more of a choice than identifying as transgender to some participants. In 2014, over 21 million people in the United States reported having abused substances (Center for Behavioral Health Statistics, 2015); therefore, participants may also have been exposed to more people who abuse

substances than who identify as transgender (Flores et al., 2016), which may have increased their emotional reactions.

Transgender people were perceived as more disgusting but less harmful than immigrants across all samples and elicited more anger than immigrants for the college student samples, whereas they elicited less anger than immigrants for the community sample. Transgender people may have been perceived as more disgusting and eliciting more anger than immigrants because participants may believe that transgender people go against the norms of society. On the other hand, immigrants may be perceived as more harmful because of the saliency of media and political attention to the potential negative effects of immigrants (Esses, Medianu, & Lawson, 2013). Approximately half of the United States citizens sampled in a recent survey reported that immigrants have a negative effect on the economy and crime (Pew Research Center, 2015).

The Midwestern and Southeastern student samples also perceived transgender people as more disgusting and as eliciting more anger than Evangelical Christians, whereas they were perceived as less harmful than Evangelical Christians by the student samples. Transgender people may be viewed as more disgusting and as eliciting more anger than Evangelical Christians because transgender people are more likely to be an outgroup to these participants from fairly religious samples. The less religious community participants reported that transgender people were perceived as less disgusting and harmful and elicited less anger than Evangelical Christians. Religious fundamentalism among all samples was related to more positive attitudes toward Evangelical Christians and negative attitudes toward transgender people. Further,

transgender people may have been viewed as less harmful than Evangelical Christians because there are not as many transgender people in the United States as there are Evangelical Christians, which means that Evangelical Christians may be able to create larger impacts on society (e.g., election results), which could be viewed as harmful.

In the student samples, transgender people were perceived as less harmful and elicited less anger than atheists. Atheists could be viewed as harmful to society for those who are high in religious fundamentalism because people who are perceived to “not believe in anything” may threaten their worldviews and beliefs. Previous research suggests that people who are more religious are also more likely to have negative attitudes toward value-violating outgroup members (i.e., atheists, Muslims, gay men; Johnson, Rowatt, & LaBouff, 2012). The student samples in the current study had a large percentage of Christian participants, who may react particularly negatively toward atheists.

Transgender people were generally perceived as less harmful and as eliciting less anger than political liberals or conservatives across samples. The United States has become more politically polarized (Pew Research Center, 2014b), and political differences may have been particularly salient to participants who may see “the other side” as harmful and worthy of their anger. Liberals and conservatives may also be perceived as having more ability to affect participants’ lives (e.g., through legislation) than transgender people due to their greater numbers and political power.

### Variables Related to Transgender Attitudes

This study replicated previous findings regarding individual difference variables that are related to negative attitudes toward transgender people as well as added information regarding moral foundations. Negative attitudes toward transgender people were related to lower levels of understanding of the distinction between the constructs of sex and gender (i.e., lower levels of sex/gender beliefs); lower amounts of contact with transgender people; perceived disgust and harm and elicited anger of transgender people; political conservatism; and religious fundamentalism, which support previous findings (Norton & Herek, 2013; Welch et al., 2017).

In this study, the individualizing foundations (i.e., harm and fairness), which are associated with political liberalism (Graham et al., 2009), were related to more positive attitudes toward transgender people, whereas the binding foundations (i.e., ingroup, authority, and purity), which are associated with political conservatism (Graham et al., 2009), were related to negative attitudes toward transgender people. These moral foundations could be related to attitudes because of their relation to political orientation, or political orientation may be related to attitudes because of their underlying moral foundations.

### Evaluation of Atheists

One interesting finding of this study was that atheists were perceived relatively negatively overall. Participants from the Southeastern university sample who evaluated the atheist scholarship applicant reported lower levels of social closeness compared those who evaluated the transgender male scholarship applicant, and participants who

evaluated the atheist scholarship applicant reported lower levels of social closeness compared to those who viewed the first-generation college student scholarship application across all three samples. The atheist applicant may have evoked more negative responses compared to the other three applicants due to the word “advocacy” used in the scholarship essay. The participants may have interpreted a student “advocating” for atheists as one who was trying to convert others to their viewpoint. Atheists were also perceived as less deserving of the scholarship and were viewed as more disgusting and harmful and elicited more anger than some other groups. Other research has also found that atheists are viewed more negatively than other outgroups, such as Muslims, gay people, and racial minorities (Edgell et al., 2006) and even those who identify as spiritual but not religious (Edgell, Hartmann, Stewart, & Gerteis, 2016).

Atheists were included in this study as a comparison group because some research has suggested that atheists elicit feelings of distrust and not disgust (Gervais et al., 2011); however, other research has also found that atheists elicit a disgust response (Ritter & Preston, 2011). Atheist targets may have been perceived more negatively because they elicited two emotions—disgust and distrust—rather than just one. In retrospect, the use of an atheist scholarship target as a comparison group may not have adequately distinguished between feelings of distrust vs. disgust.

#### Limitations and Future Research

One potential limitation within this study is social desirability. Participants may have read the identity-specific information on the application and realized my interest in attitudes toward transgender people, which may have resulted in a more positive response

toward the scholarship applicant in an attempt to appear fair and unbiased. Participants may also have felt uncomfortable responding honestly about how disgusting and harmful they find particular groups to be. To reduce this tendency, I told participants that they would be participating in two parts of one study to try to separate the individual difference measures and explicit measures from their evaluations of the scholarship applicant. I incorporated an honesty check and asked participants if I should use their data to try to identify responses that may have been affected by social desirability. Future research could add measures of social desirability to try to further reduce or address the effects of this bias.

The samples used in this study also may be considered a potential limitation. While using three samples increases generalizability and is a strength of the study, these highly educated samples may have held more positive attitudes toward transgender people than the general public, as education level relates to attitudes toward the LGBTQ+ community (Fingerhut, 2011). The majority of the community sample had a Bachelor's degree or higher, and both college samples were in college. mTurk participants tend to be more liberal than other samples (Berinsky et al., 2012), which could also help explain why this sample held generally positive attitudes. The Midwestern student sample was recruited from an introductory psychology course, and the Southeastern student sample mostly consisted of psychology majors. College students may tend to have more positive attitudes toward some issues than the general public (e.g., moral attitudes; Hanel & Vione, 2016), and students who take more courses related to diversity issues are

especially likely to report more positive attitudes toward sexual minorities (Jayakumar, 2009).

The samples used in this study may have also been less likely to respond to the prime for other reasons. mTurk participants frequently participate in research and report that they multitask when completing studies (Necka, Cacioppo, Norman, & Cacioppo, 2016), which could relate to less effectiveness of the prime. College students in psychology classes may be aware of priming effects and experimental manipulations, which then makes them less likely to be effective (Molden, 2014).

There were a great deal of research questions and conducted analyses in this study, which increases the likelihood of significant results by chance, suggesting that some of the results may be due to alpha inflation. This study was an exploratory study and did not have any strong a priori hypotheses, which may further complicate any attempts to determine whether the effects are “real.” I did preregister this study (i.e., research questions, methods, and analyses) on the Open Science Framework. Preregistration is important in science because it can help reduce publication and reporting biases as well as emphasize good theoretical background and strong methodology (van’t Veer & Giner-Sorolla, 2016). Preregistration makes practices such as *p*-hacking and fishing, which is when researchers analyze data in multiple ways until they get the desired results, less likely to occur because researchers explicitly state their hypotheses and planned analyses before the study begins. Finally, preregistering the study and making the materials and de-identified data available to other researchers makes future direct replications of this study more accessible to researchers to further test



the strength of this prime and the overall model. Future research should follow-up with more direct hypotheses based on the questions and results from this study to examine the replicability of the findings in this study.

A limitation of the ratings of emotions elicited by various groups has to do with the use of broad terms such as “harm.” Participants may have defined harm differently for each group, which could have affected the results for the explicit evaluations. The question asked how harmful the participants perceived the group to be without any clear definition of what was meant by harm. This lack of instruction could have resulted in participants interpreting harm in various ways. For example, with substance abusers, participants could have been picturing societal harm, harm to the self, or harm to family members and friends.

Future research should also include measures that examine other types of feelings (e.g., pity, empathy) toward groups as well as the ones that were included within this research. Different emotions may play a role in how people perceive other groups (Cottrell & Neuberg, 2005; Stephan & Finlay, 1999; Zadra & Clore, 2011) and their environment in general (Zadra & Clore, 2011). For example, Fundamentalist Christians are feared more than other groups, and gay men are pitied more than other groups, and these emotional differences are sometimes overlooked in research that only examines prejudice measures (Cottrell & Neuberg, 2005). Empathy is another emotion that can play a role in how people perceive other groups and can also improve attitudes toward outgroup members (Stephen & Finlay, 1999). For example, inducing empathy leads to

more positive attitudes toward stigmatized groups (e.g., homeless man; Batson et al., 1997).

While there is little research on attitudes toward transgender persons, there are even fewer studies that focus on attitudes toward people with multiple stigmatized identities (e.g., transgender person of color [TPOC]). It is not clear whether multiple stigmatized identities may have an additive effect on prejudice and discrimination, or whether some intersectional identities are viewed more negatively than others. Many of the studies that have examined TPOC focused on health risks (De Santis, 2009) or the experiences of TPOC (Koken, Bimbi, & Parsons, 2009), rather than attitudes toward this population; however, at least one study examined attitudes toward TPOC and suggested that participants may have felt more sympathy toward someone with multiple stigmatized identities (via money donations; Kirpes, Hatch, Welch, Fortuna, & Harton, 2018). The field should include more studies on attitudes toward this population to provide a better understanding of attitudes toward people with multiple stigmatized identities. Transgender women of color are one of the most discriminated groups in the LGBTQ+ community (NCAVP, 2013), and a better understanding of intersectionality effects may help reduce this discrimination.

Lastly, asking participants their moral conviction on the specific issues or groups included in future studies could provide additional information regarding feelings toward a variety of groups. People want to socially distance themselves from people who hold opposing attitudes on issues on which they have a strong moral conviction (Skitka et al., 2005). Moral conviction may provide an additional explanation for attitudes toward

transgender people. Researchers could examine automatic feelings of people who have a strong moral conviction toward transgender people compared to people who do not hold a strong moral conviction. This study potentially included those who had both strong and weak moral convictions, which may have reduced the overall effects for the automatic generalized feelings.

### Implications

This research has both theoretical and applied implications.

#### Theoretical

This study tested predictions of MFT (Haidt & Graham, 2007) and the TDM (Gray et al., 2012). According to MFT, priming a transgender identity should have increased general feelings of disgust, but not harm. According to TDM, this prime should have increased feelings of harm (danger) and disgust, with the effects of disgust mediated by harm. This study did not find direct support for either theory using the priming paradigm and therefore cannot make any strong conclusions regarding support for these morality theories.

Although there was no clear support for one theory over the other using the experimental prime, the findings from the correlational and exploratory questions yielded some support for both theories. In support of MFT (Haidt & Graham, 2007), the purity moral foundation was one of the most strongly related moral foundations to attitudes toward transgender people, which suggests that disgust may be more strongly related to attitudes toward transgender people. Transgender people were also perceived as more disgusting than harmful in the explicit measures.

In support of TDM (Gray et al., 2012), the explicit measures of perceived disgust and harm and elicited anger were related to negative attitudes toward transgender people, which suggests that these moral emotions may play a role in negative attitudes. This finding may also support more constructivist accounts of morality (e.g., Cameron et al., 2015 for a review of these accounts). Constructivist accounts suggest that the underlying makeup of emotions are similar, whereas “whole numbers” approaches (e.g., modularity; MFT; Haidt & Graham, 2007) suggest that specific mechanisms are directly related to specific emotions. The strong correlations in this study among the three emotions (i.e., disgust, harm, anger) suggest that there may be an underlying mechanism (such as TDM’s concept of harm) that contributes to each of these feelings.

### Applied

One of the most important applied implications of this study was that explicit attitudes did not appear to be very negative toward any group, with the exceptions of atheists and substance abusers. The overall means for ratings of disgust, harm, and anger were almost always less than the midpoint of the scale, indicating generally positive emotional reactions toward all of the outgroups. Explicit attitudes toward transgender people as measured by the interpersonal comfort subscale on the Transgender Attitudes and Beliefs Scale (Kanamori et al., 2016) were also positively skewed, and open-ended comments tended to be positive as well. However, that does not necessarily suggest that participants hold positive attitudes toward transgender people. One possibility is that participants may not be aware of their own prejudices toward transgender people.

Another possibility is that participants may have responded positively, even if they feel negatively toward this population, due to social desirability or other reasons.

People who had more contact with transgender people, had a better understanding of the distinction between sex and gender, responded positively on the explicit ratings, had more emphasis in the fairness foundation and less emphasis in the binding foundations, were politically liberal, and had lower reported religious fundamentalism were more likely to hold positive attitudes toward transgender people. These results suggest that contact with transgender people as well as increased education on transgender identities may help improve attitudes. Ally educational trainings, which are trainings that aim to encourage awareness and acceptance of a variety of groups, on transgender identities, may be one way to encourage more positive attitudes through education on campuses and in communities. Further, including positive representations of transgender people in the media and in classrooms may help to improve attitudes toward this population because it allows people to have more exposure to the community.

Transgender people were perceived as more disgusting than harm- or anger-eliciting, which suggests that the media and those in education should further ensure that they are portraying this population in positive ways. While disgust responses are evolutionarily based (Oaten et al., 2009), they can also be culturally learned, which suggests that they can be altered. Contact and education may be particularly important for conservative and religious participants, who may hold negative or incorrect beliefs about this population.

Although not the initial groups of interest tested in this study, atheists and substance abusers were viewed relatively negatively compared to other groups. The atheist applicant was evaluated more negatively in comparison to the other three applicants and substance abusers elicited the most negative emotional responses. Atheists may be viewed more negatively because they are seen as being less moral than religious believers (Gervais et al., 2017) and as threatening values (Cook, Cottrell, & Webster, 2014). Further, substance abusers were viewed more negatively than people with mental illnesses in a nationally representative survey (Barry, McGinty, Pescosolido, & Goldman, 2014). Substance use may be viewed as more of a choice compared to other mental health issues, which leads people to be more willing to put blame on the person who abuses the substances. Education and contact may also help raise awareness and understanding and potentially improve attitudes toward these groups.

### Conclusions

Although I did not provide direct support for either morality theory with this study, I did provide insights on explicit attitudes and emotions toward various groups, including transgender people. Overall, attitudes were not very negative toward any of the groups, with the exception of atheists and substance abusers, which was the group that tended to elicit the highest levels of perceived disgust and harm and elicited anger. Although my findings suggest that attitudes were relatively positive, this does not dismiss the fact that transgender people are one of the most targeted groups of hate violence (NCAVP, 2013). Conservative and religious participants reported more negative attitudes, therefore it may be particularly important for interventions to target these

groups. Further, my findings suggest that the more contact people have with the community and the more education that people receive on the distinctions between sex and gender, the more likely they are to hold positive attitudes toward transgender people.

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## APPENDIX A

### RECRUITMENT MATERIALS

#### **mTurk and UNI description**

This project includes two unrelated studies. The first part will ask you to read information about a scholarship applicant and then evaluate this applicant. The second part will examine the effect of personality variables on attitudes toward a variety of issues. Time estimate: 30 minutes.

Keywords (mTurk): psychology study, evaluation, attitudes, fun

#### **VSU recruitment email**

Hi!

My name is Hailey Hatch and I am a former VSU student. I am currently conducting a Master's thesis at the University of Northern Iowa entitled "Scholarship Applicant Evaluation." This study is expected to take approximately 30 minutes to complete. I would really appreciate your help in completing this study. Participation in this study is completely voluntary and you can feel free to quit at any point.

Your professor will determine the possibility for extra credit for participation in the study. At the end of the survey, you will be provided with a link to a Google form that will prompt you to provide your name, your professor's name, and the class you are currently taking with that professor. This information will **not** be linked to the data that you provide in the study and is only kept to ensure that your professor obtains information on who participated in this study for possible extra credit (depending on what your professor has said regarding extra credit). You will also be given the opportunity to enter to win a \$25 Amazon gift card! If you have participated in this study previously, please do not do so again.

If you have any question, please contact me at hatchh@uni.edu. Thank you for your time!  
Study link: [https://uni.co1.qualtrics.com/jfe/form/SV\\_6yP7f99cLraSZX7](https://uni.co1.qualtrics.com/jfe/form/SV_6yP7f99cLraSZX7)

Regards,  
Hailey

## APPENDIX B

## CONSENT FORMS

**mTurk Consent Form**

I am a student working on my thesis project. Unfortunately, I am not able to pay you what would be considered a living wage, but I am offering what I can as a token of my appreciation for your help. If payment is an issue, I understand your choice to not participate. However, if you do choose to participate, your help in completing this study, which will help scientists learn more about human behavior, is greatly appreciated!

If you wish to proceed to the study, please select the arrow below.

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UNIVERSITY OF NORTHERN IOWA  
HUMAN PARTICIPANTS REVIEW  
INFORMED CONSENT

Project Title: Scholarship Applicant Evaluation

Name of Investigator(s): Hailey A Hatch & Helen C. Harton, Ph.D.

**Invitation to Participate:** You are invited to participate in a research project conducted through the University of Northern Iowa. The University requires that you give your agreement to participate in this project. The following information is provided to help you make an informed decision about whether or not to participate.

**Nature and Purpose:** This study is divided into two parts. The two studies are not related to one another. In the first part, you will evaluate a scholarship applicant. The second part examines the effect of personality variables on attitudes toward a variety of issues.

**Explanation of Procedures:** As a participant in this study, you will be asked to answer a variety of questions regarding your attitudes on social and political issues, as well as read a short paragraph on a scholarship applicant. This study is expected to last approximately 30 minutes. You may discontinue involvement in the study at any time.

**Discomfort and Risks:** There is minimal anticipated risk involved with participating in this study. You may feel slightly uncomfortable answering some of the questions.

**Benefits and Compensation:** You will be compensated \$1.50 for participating.

**Confidentiality:** All data will be kept confidential. Your responses will be encrypted when sent over the internet. Although your confidentiality will be maintained to the

degree permitted by the technology used, no guarantees can be made regarding the interception of data by third parties when that data is sent over the internet. The summarized findings with no identifying information (I.P. addresses, worker numbers) may be published in an academic journal, presented at a scholarly conference, and/or be available for others to view on an open data site (i.e., open science framework).

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

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

**Agreement:** Registering for the study and clicking on the Continue button below indicates that I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I am 18 years of age or older.

### UNI Consent Form

I am a student working on my thesis project. Please complete this study when you are able to give it your full attention and are not distracted by other things. I appreciate your careful responses to this study, which will help scientists learn more about human behavior.

If you wish to proceed to the study, please select the arrow below.

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UNIVERSITY OF NORTHERN IOWA  
HUMAN PARTICIPANTS REVIEW  
INFORMED CONSENT

Project Title: Scholarship Applicant Evaluation  
Name of Investigator(s): Hailey A Hatch & Helen C. Harton, Ph.D.

**Invitation to Participate:** You are invited to participate in a research project conducted through the University of Northern Iowa. The University requires that you give your agreement to participate in this project. The following information is provided to help

you make an informed decision about whether or not to participate.

**Nature and Purpose:** This study is divided into two parts. The two studies are not related to one another. In the first part, you will evaluate a scholarship applicant. The second part examines the effect of personality variables on attitudes toward a variety of issues.

**Explanation of Procedures:** As a participant in this study, you will be asked to answer a variety of questions regarding your attitudes on social and political issues, as well as read a short paragraph on a scholarship applicant. This study is expected to last approximately 30 minutes. You may discontinue involvement in the study at any time.

**Discomfort and Risks:** There is minimal anticipated risk involved with participating in this study. You may feel slightly uncomfortable answering some of the questions.

**Benefits and Compensation:** You will be awarded 0.5 credit hours for participation in this study.

**Confidentiality:** All data will be kept confidential. Your responses will be encrypted when sent over the internet. Although your confidentiality will be maintained to the degree permitted by the technology used, no guarantees can be made regarding the interception of data by third parties when that data is sent over the internet. The summarized findings with no identifying information (I.P. addresses, worker numbers) may be published in an academic journal, presented at a scholarly conference, and/or be available for others to view on an open data site (i.e., open science framework).

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

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

**Agreement:** Registering for the study and clicking on the Continue button below indicates that I am fully aware of the nature and extent of my participation in this project

as stated above and the possible risks arising from it. I hereby agree to participate in this project. I am 18 years of age or older.

### **VSU Consent Form**

I am a student working on my thesis project. Please complete this study when you are able to give it your full attention and are not distracted by other things. I appreciate your careful responses to this study, which will help scientists learn more about human behavior.

If you wish to proceed to the study, please select the arrow below.

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UNIVERSITY OF NORTHERN IOWA  
HUMAN PARTICIPANTS REVIEW  
INFORMED CONSENT

Project Title: Scholarship Applicant Evaluation  
Name of Investigator(s): Hailey A Hatch & Helen C. Harton, Ph.D.

**Invitation to Participate:** You are invited to participate in a research project conducted through the University of Northern Iowa. The University requires that you give your agreement to participate in this project. The following information is provided to help you make an informed decision about whether or not to participate.

**Nature and Purpose:** This study is divided into two parts. The two studies are not related to one another. In the first part, you will evaluate a scholarship applicant. The second part examines the effect of personality variables on attitudes toward a variety of issues.

**Explanation of Procedures:** As a participant in this study, you will be asked to answer a variety of questions regarding your attitudes on social and political issues, as well as read a short paragraph on a scholarship applicant. This study is expected to last approximately 30 minutes. You may discontinue involvement in the study at any time.

**Discomfort and Risks:** There is minimal anticipated risk involved with participating in this study. You may feel slightly uncomfortable answering some of the questions.

**Benefits and Compensation:** Your professor will determine the possibility for extra credit for participation in this study. You also have the opportunity to enter to win one of two \$25 Amazon gift cards!

**Confidentiality:** All data will be kept confidential. Your responses will be encrypted



when sent over the internet. Although your confidentiality will be maintained to the degree permitted by the technology used, no guarantees can be made regarding the interception of data by third parties when that data is sent over the internet. The summarized findings with no identifying information (I.P. addresses, worker numbers) may be published in an academic journal, presented at a scholarly conference, and/or be available for others to view on an open data site (i.e., open science framework).

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

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

**Agreement:** Registering for the study and clicking on the Continue button below indicates that I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I am 18 years of age or older.

## APPENDIX C

## MANIPULATION

In this part of the study, you will read a scholarship application and then make some judgments about the person who applied. Please read the application on the next page carefully and respond to the prompt following it.

-----Page Break-----

Students were asked to provide basic information about involvement on their college campus, as well as to write a paragraph on how they are a leader on their campus for a leadership scholarship. Please take the time to examine their resume and read through their response to the prompt.

-----Page Break-----

First-generation College Student Condition

**Leadership Fund Scholarship  
2017 Scholarship Program**

The North Carolina Leadership Society is excited to announce the **2017 Leadership Fund Scholarship program**. This program will award three (3) \$500 scholarships to college students who use their leadership status to promote an understanding and acceptance of others at their institution. Applications will be accepted no later than **July 1, 2017**. Late applications will not be accepted.

The applications will be reviewed and recipients selected by the Leadership Scholarship Committee. The scholarships will be awarded **February 2, 2018** during a brunch meeting of the North Carolina Leadership Society. A formal invitation will be sent and scholarship winners should plan to attend. Please submit any questions to:

██████████. Please complete the application below and email the application to: ██████████

### SCHOLARSHIP APPLICATION 2017

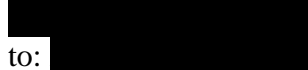
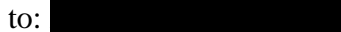
Please <b>type</b> your answers. <i>Use an additional piece of paper if necessary.</i>	
1.	Preferred Name: Taylor A. Smith
2.	Daytime telephone number: [REDACTED] Email address: [REDACTED]
3.	Date of birth: July 6, 1997 (20 years old)
4.	Year in college: <u>Junior</u>
5.	Cumulative Grade Point Average (GPA): <u>3.83</u> (On a 4.0 scale)
6.	<p>A. List any community activities and leaderships roles that you are involved with:</p> <ul style="list-style-type: none"> <li>• President of Psi Chi</li> <li>• Volunteer at the local homeless shelter</li> <li>• Volunteer to build houses for a local organization that supports people who are unable to afford houses on their own</li> <li>• Math tutor for Brantley High School</li> </ul> <p>B. List any academic recognitions that you have received:</p> <ul style="list-style-type: none"> <li>• \$300 for undergraduate research grant</li> <li>• Best undergraduate research award</li> <li>• Scholarship for Academic Excellence in Psychology</li> </ul> <p>C. List any research experience you have conducted:</p> <ul style="list-style-type: none"> <li>• Conducted an undergraduate thesis</li> <li>• Worked in three research labs</li> </ul>
7.	<p><b><i>In 100 words or less, please discuss how you promote an understanding and acceptance of others at your institution.</i></b></p> <p>I am the first person in my family to further myself and aim to obtain a higher education. I have used my identity as a first-generation college student and a leader to host events at my campus that focus on promoting an understanding of those who hold a similar identity to my own. I started a student organization on campus that hosts weekly meetings to discuss current events and other issues of interest to people like myself. I have also conducted research that focuses on attitudes toward first-generation college students. I hope to continue to utilize my research and advocacy for my fellow first-generation college students by being a voice on campus that strives to be heard.</p>

Atheist Condition

**Leadership Fund Scholarship  
2017 Scholarship Program**

The North Carolina Leadership Society is excited to announce the **2017 Leadership Fund Scholarship program**. This program will award three (3) \$500 scholarships to college students who use their leadership status to promote an understanding and acceptance of others at their institution. Applications will be accepted no later than **July 1, 2017**. Late applications will not be accepted.

The applications will be reviewed and recipients selected by the Leadership Scholarship Committee. The scholarships will be awarded **February 2, 2018** during a brunch meeting of the North Carolina Leadership Society. A formal invitation will be sent and scholarship winners should plan to attend. Please submit any questions to:

. Please complete the application below and email the application to: 

### SCHOLARSHIP APPLICATION 2017

Please <b>type</b> your answers. <i>Use an additional piece of paper if necessary.</i>	
1	Preferred Name: Taylor A. Smith
2	Daytime telephone number: [REDACTED]
3	Email address: [REDACTED]
4	Date of birth: July 6, 1997 (20 years old)
5	Year in college: <u>Junior</u>
6	Cumulative Grade Point Average (GPA): <u>3.83</u> (On a 4.0 scale)
7	<p>A. List any community activities and leaderships roles that you are involved with:</p> <ul style="list-style-type: none"> <li>• President of Psi Chi</li> <li>• Volunteer at the local homeless shelter</li> <li>• Volunteer to build houses for a local organization that supports people who are unable to afford houses on their own</li> <li>• Math tutor for Brantley High School</li> </ul> <p>B. List any academic recognitions that you have received:</p> <ul style="list-style-type: none"> <li>• \$300 for undergraduate research grant</li> <li>• Best undergraduate research award</li> <li>• Scholarship for Academic Excellence in Psychology</li> </ul> <p>C. List any research experience you have conducted:</p> <ul style="list-style-type: none"> <li>• Conducted an undergraduate thesis</li> <li>• Worked in three research labs</li> </ul>
7.	<p><b><i>In 100 words or less, please discuss how you promote an understanding and acceptance of others at your institution.</i></b></p> <p>I am a person who does not believe in the existence of any gods. I have used my identity as an atheist student and a leader to host events at my campus that focus on promoting an understanding of those who hold a similar identity to my own. I started a student organization on campus that hosts weekly meetings to discuss current events and other issues of interest to people like myself. I have also conducted research that focuses on attitudes toward atheists. I hope to continue to utilize my research and advocacy for my fellow atheists by being a voice on campus that strives to be heard.</p>

Transgender Male Condition

**Leadership Fund Scholarship  
2017 Scholarship Program**

The North Carolina Leadership Society is excited to announce the **2017 Leadership Fund Scholarship program**. This program will award three (3) \$500 scholarships to college students who use their leadership status to promote an understanding and acceptance of others at their institution. Applications will be accepted no later than **July 1, 2017**. Late applications will not be accepted.

The applications will be reviewed and recipients selected by the Leadership Scholarship Committee. The scholarships will be awarded **February 2, 2018** during a brunch meeting of the North Carolina Leadership Society. A formal invitation will be sent and scholarship winners should plan to attend. Please submit any questions to:

[REDACTED]. Please complete the application below and email the application to: [REDACTED]

### SCHOLARSHIP APPLICATION 2017

Please <b>type</b> your answers. <i>Use an additional piece of paper if necessary.</i>	
1.	Preferred Name: Taylor A. Smith
2.	Daytime telephone number: [REDACTED] Email address: [REDACTED]
3.	Date of birth: July 6, 1997 (20 years old)
4.	Year in college: <u>Junior</u>
5.	Cumulative Grade Point Average (GPA): <u>3.83</u> (On a 4.0 scale)
6.	<p>A. List any community activities and leaderships roles that you are involved with:</p> <ul style="list-style-type: none"> <li>• President of Psi Chi</li> <li>• Volunteer at the local homeless shelter</li> <li>• Volunteer to build houses for a local organization that supports people who are unable to afford houses on their own</li> <li>• Math tutor for Brantley High School</li> </ul> <p>B. List any academic recognitions that you have received:</p> <ul style="list-style-type: none"> <li>• \$300 for undergraduate research grant</li> <li>• Best undergraduate research award</li> <li>• Scholarship for Academic Excellence in Psychology</li> </ul> <p>C. List any research experience you have conducted:</p> <ul style="list-style-type: none"> <li>• Conducted an undergraduate thesis</li> <li>• Worked in three research labs</li> </ul>
7.	<p><b><i>In 100 words or less, please discuss how you promote an understanding and acceptance of others at your institution.</i></b></p> <p>I was assigned female at birth, but I identify as a male. I have used my identity as a transgender student and a leader to host events at my campus that focus on promoting an understanding of those who hold a similar identity to my own. I started a student organization on campus that hosts weekly meetings to discuss current events and other issues of interest to people like myself. I have also conducted research that focuses on attitudes toward transgender people. I hope to continue to utilize my research and advocacy for my fellow transgender community members by being a voice on campus that strives to be heard.</p>


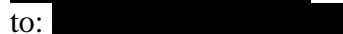


Transgender Female

**Leadership Fund Scholarship  
2017 Scholarship Program**

The North Carolina Leadership Society is excited to announce the **2017 Leadership Fund Scholarship program**. This program will award three (3) \$500 scholarships to college students who use their leadership status to promote an understanding and acceptance of others at their institution. Applications will be accepted no later than **July 1, 2017**. Late applications will not be accepted.

The applications will be reviewed and recipients selected by the Leadership Scholarship Committee. The scholarships will be awarded **February 2, 2018** during a brunch meeting of the North Carolina Leadership Society. A formal invitation will be sent and scholarship winners should plan to attend. Please submit any questions to:

. Please complete the application below and email the application to: 

### SCHOLARSHIP APPLICATION 2017

Please <b>type</b> your answers. <i>Use an additional piece of paper if necessary.</i>	
1 .	Preferred Name: Taylor A. Smith
2 .	Daytime telephone number: [REDACTED] Email address: [REDACTED]
3 .	Date of birth: July 6, 1997 (20 years old)
4 .	Year in college: <u>Junior</u>
5 .	Cumulative Grade Point Average (GPA): <u>3.83</u> (On a 4.0 scale)
6 .	<p>A. List any community activities and leaderships roles that you are involved with:</p> <ul style="list-style-type: none"> <li>• President of Psi Chi</li> <li>• Volunteer at the local homeless shelter</li> <li>• Volunteer to build houses for a local organization that supports people who are unable to afford houses on their own</li> <li>• Math tutor for Brantley High School</li> </ul> <p>B. List any academic recognitions that you have received:</p> <ul style="list-style-type: none"> <li>• \$300 for undergraduate research grant</li> <li>• Best undergraduate research award</li> <li>• Scholarship for Academic Excellence in Psychology</li> </ul> <p>C. List any research experience you have conducted:</p> <ul style="list-style-type: none"> <li>• Conducted an undergraduate thesis</li> <li>• Worked in three research labs</li> </ul>
7.	<p><b><i>In 100 words or less, please discuss how you promote an understanding and acceptance of others at your institution.</i></b></p> <p>I was assigned male at birth, but I identify as a female. I have used my identity as a transgender student and a leader to host events at my campus that focus on promoting an understanding of those who hold a similar identity to my own. I started a student organization on campus that hosts weekly meetings to discuss current events and other issues of interest to people like myself. I have also conducted research that focuses on attitudes toward transgender people. I hope to continue to utilize my research and advocacy for my fellow transgender community members by being a voice on campus that strives to be heard.</p>

-----Page Break-----

Imagine that you are on the scholarship committee. Write a paragraph below with your evaluation of the applicant, including why you would (or would not) endorse them for this scholarship.

**\*The next arrow will appear after 90 seconds.\***

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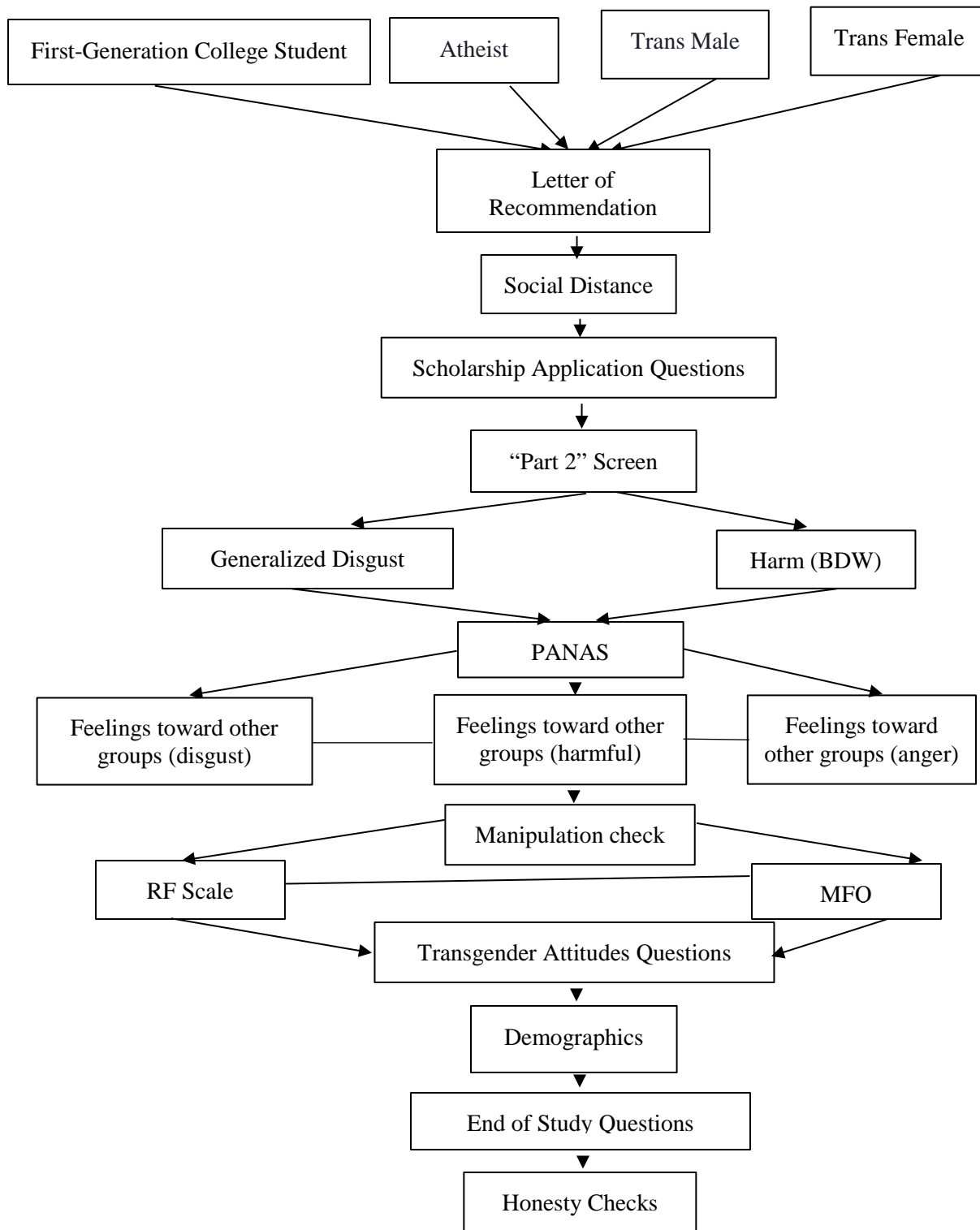
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APPENDIX D  
SURVEY FLOW



## APPENDIX E

## ATTENTION CHECKS

1. Please select “strongly agree.” (located in Belief in a Dangerous World Scale)
2. What is the name of the scholarship applicant? (located in manipulation check section)
3. Please select “Extremely Relevant.” (located in Moral Foundations Questionnaire)

## APPENDIX F

### GOOGLE FORMS

#### UNI students

**SONA credit information**

Thank you again for your participation! Please provide your information below.

Please provide your name below. This information is used only to ensure that you are granted credit for your participation and is NOT linked to your responses.

Your answer

**SUBMIT**

Never submit passwords through Google Forms.

This form was created inside of University of Northern Iowa. Report Abuse - Terms of Service - Additional Terms

Google Forms

#### VSU students

**Extra Credit/Raffle information**

Thank you again for your participation! Please provide your information below.

**Name**

Your answer

**Email (ONLY if you would like to be entered in a drawing to win a \$25 Amazon gift card)**

Your answer

**Professor**

Your answer

**What class are you taking with the professor you mentioned above?**

Your answer

**SUBMIT**

Never submit passwords through Google Forms.

## APPENDIX G

## SOCIAL DISTANCE SCALE (Link, Cullen, Frant, &amp; Wozniak, 1987)

**Please think about the Taylor (the scholarship applicant) and indicate how willing you would be to engage in the following actions.**

Definitely unwilling ----- Somewhat unwilling ----- Somewhat willing ----- Definitely willing

1. How would you feel about renting a room in your home to Taylor?
2. How would you feel about working with Taylor?
3. How would you feel about having Taylor as your neighbor?
4. How would you feel about having Taylor as a caretaker of your children?
5. How would you feel about having your children marry Taylor?
6. How would you feel about introducing Taylor to your friends?
7. How would you feel about recommending Taylor for a job working with someone you know?

APPENDIX H  
EVALUATION QUESTIONS

Please rate the extent to which you agree with the following statement.

Taylor is a leader on their college campus.

- Strongly disagree (1)
- Disagree (2)
- Somewhat disagree (3)
- Neither agree nor disagree (4)
- Somewhat agree (5)
- Agree (6)
- Strongly agree (7)

How deserving of the scholarship do you think Taylor is?

- Not at all deserving (1)
- Somewhat deserving (2)
- Moderately deserving (3)
- Mostly deserving (4)
- Very deserving (5)

Why do you think Taylor is, or is not, deserving of the scholarship?

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## APPENDIX I

DISGUST SCALE - REVISED (Haidt et al., 1994, modified by Olatunji et al., 2007)

**Please indicate how much you agree with each of the following statements, or how true it is about you.**

**Selecting "Strongly disagree" indicates that this statement is very untrue about you and selecting "Strongly agree" indicates that the statement is very true about you.**

Strongly disagree - Mildly disagree - Neither agree nor disagree - Mildly agree - Strongly agree

1. I might be willing to try eating monkey meat, under some circumstances. (R)
2. It would bother me to be in a science class, and to see a human hand preserved in a jar.
3. It bothers me to hear someone clear a throat full of mucous.
4. I never let any part of my body touch the toilet seat in public restrooms.
5. I would go out of my way to avoid walking through a graveyard.
6. Seeing a cockroach in someone else's house doesn't bother me. (R)
7. It would bother me tremendously to touch a dead body.
8. If I see someone vomit, it makes me sick to my stomach.
9. I probably would not go to my favorite restaurant if I found out that the cook had a cold.
10. It would not upset me at all to watch a person with a glass eye take the eye out of the socket. (R)
11. It would bother me to see a rat run across my path in a park.
12. I would rather eat a piece of fruit than a piece of paper.\*
13. Even if I was hungry, I would not drink a bowl of my favorite soup if it had been stirred by a used but thoroughly washed flyswatter.
14. It would bother me to sleep in a nice hotel room if I knew that a man had died of a heart attack in that room the night before.

**Please indicate how disgusting you find each of the following experiences.**

Not at all disgust - Slightly disgusting - Moderately disgust - Very disgusting - Extremely disgusting

1. You see maggots on a piece of meat in an outdoor garbage pail.
2. You see a person eating an apple with a knife and fork.\*
3. While you are walking through a tunnel under a railroad track, you smell urine.
4. You take a sip of soda, and then realize that you drank from the glass that an acquaintance of yours had been drinking from.

5. Your friend's pet cat dies, and you have to pick up the dead body with your bare hands.
6. You see someone put ketchup on vanilla ice cream, and eat it.
7. You see a man with his intestines exposed after an accident.
8. You discover that a friend of yours changes underwear only once a week.
9. A friend offers you a piece of chocolate shaped like dog-doo.
10. You accidentally touch the ashes of a person who has been cremated.
11. You are about to drink a glass of milk when you smell that it is spoiled.
12. As part of a sex education class, you are required to inflate a new unlubricated condom, using your mouth.
13. You are walking barefoot on concrete, and you step on an earthworm.

(R) = Reverse-coded

\* = Not used in analysis based on author instruction

## APPENDIX J

## BELIEF IN A DANGEROUS WORLD (Altemeyer, 1988)

**Please rate your level of agreement with each of the following statements.**

Strongly disagree - Disagree - Somewhat disagree - Neither agree nor disagree - Somewhat Agree  
- Strongly agree

1. It seems that every year that there are fewer and fewer truly respectable people, and more and more persons with no morals at all who threaten everyone else.
2. Although it may appear that things are constantly getting more dangerous and chaotic, it really isn't so. Every era has its problems, and a person's chances of living a safe, untroubled life are better today than ever before. (R)
3. If our society keeps degenerating the way it has been lately, it's liable to collapse like a rotten log and everything will be chaos.
4. Our society is not full of immoral and degenerate people who prey on decent people. News reports of such cases are grossly exaggerating and misleading. (R)
5. The "end" is not near. People who think that earthquakes, wars, and famines mean God might be about to destroy the world are being foolish. (R)
6. There are many dangerous people in our society who will attack someone out of pure meanness, for no reason at all.
7. Despite what one hears about "crime in the street," there probably isn't any more now than there ever has been. (R)
8. Any day now, chaos and anarchy could erupt around us. All the signs are pointing to it.
9. If a person takes a few sensible precautions, nothing bad will happen to him. We do not live in a dangerous world. (R)
10. Every day, as our society becomes more lawless and bestial, a person's chances of being robbed, assaulted, and even murdered go up and up.
11. Things are getting so bad, even a decent law-abiding person who takes sensible precautions can still become a victim of violence and crime.
12. Our country is **not** falling apart or rotting from within. (R)

(R) = Reverse-coded

## APPENDIX K

THE INTERNATIONAL POSITIVE AND NEGATIVE AFFECT SCHEDULE SHORT  
FORM (I-PANAS-SF; Thompson, 2007)**Thinking about yourself and how you feel right now, to what extent do you feel:**

I feel nothing like this right now. - I feel somewhat like this right now. - I feel moderately like this right now. - I feel mostly like this right now. - I feel exactly like this right now.

1. Upset
2. Hostile
3. Alert
4. Ashamed
5. Inspired
6. Nervous
7. Determined
8. Attentive
9. Afraid
10. Active

Positive affect items: 3, 5, 7, 8, 10

Negative affect items: 1, 2, 4, 6, 9

## APPENDIX L

## SPECIFIC ATTITUDES TOWARD GROUPS

**When thinking about the following groups, how much do you feel disgust?**

Not at all disgusting   2   3   4   5   6   Very disgusting

**When thinking about the following groups, how harmful do you perceive them to be?**

Not at all harmful   2   3   4   5   6   Very harmful

**When thinking about the following groups, how much do you feel anger?**

Not at all angry   2   3   4   5   6   Very angry

1. Atheists
2. Conservatives
3. First-generation college students
4. Immigrants
5. Liberals
6. Substance abusers
7. Transgender people
8. Evangelical Christians

## APPENDIX M

## MANIPULATION CHECK BLOCK QUESTIONS

What was the scholarship applicant's name?

- Cameryn
- Taylor
- Ashley
- Tracey

What was the gender identity of the scholarship applicant?\*

- Female
- Male
- Transgender female
- Transgender male
- This information was not provided in the scholarship application.

\*Manipulation Check

## APPENDIX N

## RELIGIOUS FUNDAMENTALISM SCALE

**You will probably find that you agree with some of the following statements, and disagree with others, to varying extents. Please indicate your reaction to each statement according to the scale below.**

**Important: You may find that you sometimes have different reactions to different parts of a statement. For example, you might very strongly disagree with one idea in a statement, but slightly agree with another idea in the same item. When this happens, please combine your reactions, and record how you feel on balance (a “strongly disagree” in this case).**

Very strongly disagree – Strongly disagree – Moderately disagree – Slightly disagree – Feel exactly and precisely neutral – Slightly agree – Moderately agree – Strongly agree – Very strongly agree

1. God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed.
2. No single book of religious teachings contains all the intrinsic, fundamental truths about life. (R)
3. The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.
4. It is more important to be a good person than to believe in God and the right religion. (R)
5. There is a particular set of religious teachings in this world that are so true, you can't go any “deeper” because they are the basic, bedrock message that God has given humanity.
6. When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God, and the rest, who will not.
7. Scriptures may contain general truths, but they should not be considered completely, literally true from beginning to end. (R)
8. To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.
9. “Satan” is just the name people give to their own bad impulses. There really is no such thing as a diabolical “Prince of Darkness” who tempts us. (R)
10. Whenever science and sacred scripture conflict, science is probably right. (R)

11. The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.
  12. All of the religions in the world have flaws and wrong teachings. There is no perfectly true, right religion. (R)
- (R) = Reverse-coded



## APPENDIX O

## MORAL FOUNDATIONS QUESTIONNAIRE

**When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking? Please rate each statement using the scale below.**

***Not at all relevant* means that this has nothing to do with your judgments of right and wrong. *Extremely relevant* means that this is one of the most important factors when you judge right and wrong.**

Not at all relevant - Not very relevant - Slightly relevant - Somewhat relevant - Very relevant -  
Extremely relevant

1. Whether or not someone suffered emotionally
2. Whether or not some people were treated differently than others
3. Whether or not someone's action showed love for his or her country
4. Whether or not someone showed a lack of respect for authority
5. Whether or not someone violated standards of purity and decency
6. Whether or not someone was good at math\*
7. Whether or not someone cared for someone weak or vulnerable
8. Whether or not someone acted unfairly
9. Whether or not someone did something to betray his or her group
10. Whether or not someone conformed to the traditions of society
11. Whether or not someone did something disgusting
12. Whether or not someone was cruel
13. Whether or not someone was denied his or her rights
14. Whether or not someone showed a lack of loyalty
15. Whether or not an action caused chaos or disorder
16. Whether or not someone acted in a way that God would approve of

**Please read the following sentences and indicate your agreement or disagreement.**

Strongly disagree - Moderately disagree - Slightly disagree - Slightly agree - Moderately agree -  
Strongly agree

17. Compassion for those who are suffering is the most crucial virtue.
18. When the government makes laws, the number one principle should be ensuring that everyone is treated fairly.
19. I am proud of my country's history.
20. Respect for authority is something all children need to learn.
21. People should not do things that are disgusting, even if no one is harmed.

22. It is better to do good than to do bad.\*
23. One of the worst things a person could do is hurt a defenseless animal.
24. Justice is the most important requirement for a society.
25. People should be loyal to their family members, even when they have done something wrong.
26. Men and women each have different roles to play in society.
27. I would call some acts wrong on the grounds that they are unnatural.
28. It can never be right to kill a human being.
29. I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing.
30. It is more important to be a team player than to express oneself.
31. If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty.
32. Chastity is an important and valuable virtue.

Harm items: 1, 7, 12, 17, 23, 28

Fairness items: 2, 8, 13, 18, 24, 29

Ingroup items: 3, 9, 14, 19, 25, 30

Authority items: 4, 10, 15, 20, 26, 31

Purity items: 5, 11, 16, 21, 27, 32

\* = Not used in analysis based on author instruction

## APPENDIX P

## TRANSGENDER ATTITUDES AND BELIEFS SCALE

**Please indicate the extent to which you agree or disagree with the following statements. (A transgender person is one whose sex assigned at birth does not align with their gender identity.)**

**For example, someone who identifies as male but was assigned female at birth would be considered transgender.**

Strongly disagree - Moderately disagree - Slightly disagree - Neutral - Slightly agree - Moderately agree - Strongly agree

*Interpersonal Comfort Subscale*

1. I would feel comfortable having a transgender person in my home for a meal.
2. I would be comfortable being in a group of transgender individuals.
3. I would be uncomfortable if my boss was transgender. (R)
4. I would feel uncomfortable working closely with a transgender person in my workplace. (R)
5. If I knew someone was transgender, I would still be open to forming a friendship with that person.
6. I would feel comfortable if my next-door neighbor was transgender.
7. If my child brought home a transgender friend, I would be comfortable having that person into my home.
8. I would be upset if someone I'd known for a long time revealed that they used to be another gender. (R)
9. If I knew someone was transgender, I would tend to avoid that person. (R)
10. If a transgender person asked to be my housemate, I would want to decline. (R)
11. I would feel uncomfortable finding out that I was alone with a transgender person. (R)
12. I would be comfortable working for a company that welcomes transgender individuals.
13. If someone I knew revealed to me that they were transgender, I would probably no longer be as close to that person. (R)
14. If I found out my doctor was transgender, I would want to seek another doctor. (R)

*Sex/Gender Beliefs Subscale*

1. A person who is not sure about being male or female is mentally ill. (R)
2. Whether a person is male or female depends on whether they feel male or female.
3. If you are born male, nothing you do will change that. (R)

4. Whether a person is male or female depends strictly on their external sex-parts. (R)
5. Humanity is only male or female; there is nothing in between. (R)
6. If a transgender person identifies as female, she should have the right to marry a man.
7. Although most of humanity is male or female, there are also identities in between.
8. All adults should identify as either male or female. (R)
9. A child born with ambiguous sex-parts should be assigned to either male or female. (R)
10. A person does not have to be clearly male or female to be normal and healthy.

(R) = Reverse-coded

APPENDIX Q  
DEMOGRAPHICS

What is your gender identity?

- Male (1)
- Female (2)
- Agender (9)
- Gender nonbinary (3)
- Genderfluid (10)
- Genderqueer (8)
- Prefer not to answer (6)
- Not listed: (7) \_\_\_\_\_

Do you consider yourself transgender?

- Yes (1)
- No (2)

What is your age? (Drop down menu)

Please specify your race/ethnicity. Check all that apply.

- American Indian/Native American (1)
- Alaska Native (2)
- Asian or Asian American (3)
- Black or African American (4)
- Hispanic or Latino (10)
- Pacific Islander (6)
- White or Caucasian (7)
- Prefer not to answer (8)
- Not listed: (9) \_\_\_\_\_

With which political party do you identify, if any?

- Democrat (1)
- Republican (2)
- Independent (3)
- No Affiliation (4)
- Not listed: (5) \_\_\_\_\_

How would you describe your...

	Very Conservative (1)	Conservative (2)	Moderate (3)	Liberal (4)	Very Liberal (5)
Political Orientation? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Views on current social issues? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
View on foreign policy? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Views on economics? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Which of the following would you say is your sexual orientation?

- Heterosexual ("straight") (1)
- Lesbian (2)
- Gay (3)
- Bisexual (4)
- Prefer not to say (5)
- Not listed: (6) \_\_\_\_\_

What year were you born?

\_\_\_\_\_

What is the highest degree or level of school you have completed? If currently enrolled, mark the previous grade or highest degree received. (**mTurk ONLY**)

- Less than high school (1)
- High School (2)
- Associate's degree (3)
- Bachelor's degree (4)
- Graduate degree (5)
- Not listed: (6) \_\_\_\_\_

What is your year in school? (**College students ONLY**)

- Freshman (1)
- Sophomore (2)
- Junior (3)
- Senior (4)

Not listed: (5) \_\_\_\_\_

What is your major or field of study? Check all that apply. (**College students ONLY**)

- Education (1)
- Humanities and Arts (e.g., Music, Literature, Philosophy) (2)
- Natural Sciences (e.g., Mathematics, Chemistry, Biology) (3)
- Social Sciences (e.g., Psychology, Sociology, Criminology) (4)
- Business (e.g., Accounting, Finance, Management) (5)
- Not listed: (6) \_\_\_\_\_

Do you know any people who are transgender? Check all that apply.

- A transgender person is a member of my family. (1)
- A transgender person is a friend of mine. (2)
- A transgender person in an acquaintance of mine. (3)
- I am transgender. (5)
- I don't know any transgender people. (4)

Do you know any people who are gay, lesbian, bisexual, pansexual, or another sexual orientation besides heterosexual? Check all that apply.

- A member of my family (1)
- A friend of mine (2)
- An acquaintance of mine (3)
- I identify with a sexual orientation that is not heterosexual. (5)
- I don't know any people who are not heterosexual. (4)

With which of the following do you identify, if any?

- Agnostic (1)
- Atheist (2)
- Buddhist (3)
- Christian (Catholic) (4)
- Christian (Protestant--Baptist, Lutheran, Methodist, etc.) (5)
- Christian (nondenominational) (6)
- Christian (Other--Jehovah's Witness, Mormon, etc.) (7)
- Hindu (8)
- Jewish (9)
- Muslim (10)
- Shinto (11)
- Not listed: (12) \_\_\_\_\_
- None of these (13)

Which of the following terms describe your religious identity, if any? Please select all that apply.

- Bible-believing (1)
- Born-Again (4)
- Charismatic (5)
- Evangelical (6)
- Fundamentalist (7)
- Mainline Christian (8)
- New Age (2)
- Pentecostal (3)
- Seeker (9)
- Spiritual (10)
- Theologically conservative (11)
- Theologically liberal (12)
- Traditional (13)
- None of these (14)



APPENDIX R  
OPEN-ENDED AND END-OF-STUDY QUESTIONS

How do you feel about transgender people?

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How honest were you when answering all questions? You will get paid regardless of your response.

- Not at all honest (2)
- Somewhat honest (3)
- Mostly honest (4)
- Very honest (5)

Do you have any comments for the researcher?

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Is there any reason we should not use your data? Please explain.

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What do you think the study was about?

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APPENDIX S  
DEBRIEFING FORMS

**mTurk Debriefing Form**

What is your worker ID number?

\*This will be deleted after you have been compensated.

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Please read through this and click "next" arrow at the end.

Thank you for participating in the study entitled "Scholarship Applicant Evaluation." Our main interest in this study was to examine moral motivations for negative attitudes toward first-generation college students, atheists, and transgender people. More specifically, we are interested in uncovering any automatic negative reactions to the aforementioned groups. We all experience automatic negative reactions toward others; however, these reactions may or may not influence our attitudes toward these groups.

Although initially you were informed that you were participating in two parts of one study, you were actually participating in one collective study. We were unable to be fully transparent with you because we wanted you provide honest responses, rather than selecting specific answers to achieve perceived social desirability. This study contained four conditions: two that included a scholarship essay from a transgender person (one condition was a transgender female, one was a transgender male), one scholarship essay from an atheist, and a comparison which included a scholarship essay from a first-generation college student.

Please do not share the true purpose of our study with anyone. If you are asked what this study is about, please respond that you participated in two parts of a study, where you read a scholarship essay and answered questions about your personality and attitudes toward a variety of issues.

If you have any questions about the research protocol, theory, or results, you may contact the Primary Researcher, Hailey Hatch, at [hatchh@uni.edu](mailto:hatchh@uni.edu).

Also, if you feel that you have experienced psychological harm due to this study, please seek counselling services.

Once more, thank you for your participation.

If you object to your data being used in this study, please type the following in the box below "I object to my data being used in this study."

---

**Please select the "next" arrow below to access the secret code.**

### **UNI Debriefing Form**

Please read through this and click "next" arrow at the end.

Thank you for participating in the study entitled "Scholarship Applicant Evaluation." Our main interest in this study was to examine moral motivations for negative attitudes toward first-generation college students, atheists, and transgender people. More specifically, we are interested in uncovering any automatic negative reactions to the aforementioned groups. We all experience automatic negative reactions toward others; however, these reactions may or may not influence our attitudes toward these groups.

Although initially you were informed that you were participating in two parts of one study, you were actually participating in one collective study. We were unable to be fully transparent with you because we wanted you provide honest responses, rather than selecting specific answers to achieve perceived social desirability. This study contained four conditions: two that included a scholarship essay from a transgender person (one condition was a transgender female, one was a transgender male), one scholarship essay from an atheist, and a comparison which included a scholarship essay from a first-generation college student.

Please do not share the true purpose of our study with anyone. If you are asked what this study is about, please respond that you participated in two parts of a study, where you read a scholarship essay and answered questions about your personality and attitudes toward a variety of issues.

If you have any questions about the research protocol, theory, or results, you may contact the Primary Researcher, Hailey Hatch, at [hatchh@uni.edu](mailto:hatchh@uni.edu).

Also, if you feel that you have experienced psychological harm due to this study, please contact the Counseling Center at the University of Northern Iowa. The number to their services is (319) 273-2676.

Once more, thank you for your participation.

If you object to your data being used in this study, please type the following in the box below "I object to my data being used in this study."

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Please select "next arrow" to end the survey and access the Google form.

On this Google form, you will be asked to provide your name to ensure that you are granted credit for participation in this study. The information given **will not** be linked to your data.

### **VSU Debriefing Form**

Please read through this and click "next" arrow at the end.

Thank you for participating in the study entitled “Scholarship Applicant Evaluation.” Our main interest in this study was to examine moral motivations for negative attitudes toward first-generation college students, substance abusers, and transgender people. More specifically, we are interested in uncovering any automatic negative reactions to the aforementioned groups. We all experience automatic negative reactions toward others; however, these reactions may or may not influence our attitudes toward these groups.

Although initially you were informed that you were participating in two parts of one study, you were actually participating in one collective study. We were unable to be fully transparent with you because we wanted you provide honest responses, rather than selecting specific answers to achieve perceived social desirability. This study contained four conditions: two that included a scholarship essay from a transgender person (one condition was a transgender female, one was a transgender male), one scholarship essay from an atheist, and a comparison which included a scholarship essay from a first-generation college student.

Please do not share the true purpose of our study with anyone. If you are asked what this study is about, please respond that you participated in two parts of a study, where you read a scholarship essay and answered questions about your personality and attitudes toward a variety of issues.

If you have any questions about the research protocol, theory, or results, you may contact the Primary Researcher, Hailey Hatch, at [hatchh@uni.edu](mailto:hatchh@uni.edu). Also, if you feel that you have experienced psychological harm due to this study, please contact the Counseling

Center at the Valdosta State University. The number to their services is (229) 333-5940.

Once more, thank you for your participation.

If you object to your data being used in this study, please type the following in the box below "I object to my data being used in this study."

---

Please select "next arrow" to end the survey and access the Google form.

On this Google form, you will be asked to give information related to your class to receive extra credit (pending your professor), as well as enter to win a \$25 Amazon gift card. The information given **will not** be linked to your data.

APPENDIX T  
CORRELATIONS BETWEEN DISGUST, HARM, AND ANGER

Table T1

*Correlations between Disgust, Harm, and Anger for Groups*

Groups	Perceived Harm (with Disgust)	Elicited Anger (with Disgust)	Perceived Harm (with Anger)
First-generation college students	.62	.69	.68
Atheists	.70	.79	.66
Evangelical Christians	.77	.82	.81
Conservatives	.76	.77	.79
Liberals	.72	.78	.72
Immigrants	.69	.75	.70
Substance abusers	.62	.70	.62
Transgender people	.61	.77	.63

*Note.* All correlations are significant at  $p < .01$  level.