THE ROLE OF GENDER IDEOLOGY AND ESSENTIALIST BELIEFS IN REDUCING ANTI-TRANSGENDER PREJUDICE

By

MORGAN A. CONWAY

A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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To my friends and family
ACKNOWLEDGMENTS

I thank my family, my friends, and my partner Tessa for their support, generosity, and kindness.
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Abstract of Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

THE ROLE OF GENDER IDEOLOGY AND ESSENTIALIST BELIEFS IN REDUCING ANTI-TRANSGENDER PREJUDICE

By

Morgan A. Conway

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Chair: Kate A. Ratliff
Major: Psychology

Transgender people are generally evaluated more negatively than people whose gender identities align with what they were assigned at birth (i.e. cisgender people; Hill and Willoughby, 2005). Although attitudes toward transgender people are understudied compared to other groups on the Lesbian, Gay, Bisexual and Transgender, Queer (LGBTQ) spectrum, existing research has identified belief in traditional gender roles and gender essentialist beliefs as explanations for anti-transgender prejudice (Nagoshi et al., 2008). Traditional gender role ideology and gender essentialism form the foundation of a broad ideology of prescriptive norms around gender and stigmatizes deviation from those norms (Hill, 2002; Hill & Willoughby, 2005). The current research examined the influence of traditional gender role ideology on attitudes toward transgender people and whether changing traditional gender role beliefs are an effective intervention for reducing anti-transgender prejudice.

Intervention strategies included providing participants with information about how gender norms have changed over time (Studies 1 & 2), asking participants to watch a video on gender (Study 3), a different set of passages about the mutability of gender identity taken from another published study (Study 4), reading a letter written by a transman to his parents (Study 5),
and an imagined contact paradigm where participants imaged interacting with a transgender person (Study 6). Across six studies (total $N = 1,562$), no intervention consistently changed participants’ traditional gender role ideology, attitudes toward transgender people, gender essentialist beliefs, self-reported transphobia, or attitudes toward policies affecting transgender people.
CHAPTER 1
INTRODUCTION

Imagine meeting someone for the first time. They are polite, funny, and charismatic. Now, imagine finding out that this person is transgender. How might this information influence your attitude toward the person? Does the answer to this question depend on your beliefs about gender? The current research in this study covers two aspects. First, an examination was made into whether people’s gender role ideology influences attitudes toward transgender people. Second, an evaluation of whether it is possible to influence traditional gender role ideology to reduce negative attitudes toward transgender people is explored. This issue is timely and important because transgender people, and the issues they face, are becoming increasingly visible (Bockting, Benner & Coleman, 2009). Also, compared to the progress made in understanding race- and sex-based discrimination, little systematic research has examined predictors of prejudice against people whose gender identity differs from the identity they were assigned at birth (Hill & Willoughby, 2005).

Prejudice against Transgender People

While definitive estimates of the number of transgender people currently living in the United States are elusive, population-based data estimates suggest that somewhere between 0.5% to 2% of the U.S. population have strong feelings about being transgender (Conway, 2002). Although this estimated population may seem small, transgender people and others who live outside of the gender binary are at a disproportionately elevated risk for a host of negative life outcomes such as employment discrimination, living in extreme poverty, and self-harm (Grant et al., 2011; Coalition for Lesbian and Gay Rights in Ontario, 1997; Almeida et al., 2013; Hill, 2002). People generally evaluate transgender people negatively, and that negativity is reflected in the negative life outcomes reported by transgender people (Hill, 2002; Nagoshi et al., 2008).
Despite the evidence that transgender people experience negative outcomes, and that these outcomes might be the result of negative attitudes toward transgender people, research on attitudes toward transgender people remains lacking.

**Transphobia and Attitudes toward Transgender People**

In the present research, the primary outcomes of interest are transphobia, attitudes toward transgender people, and gender role beliefs. Transphobia is one of the core constructs related to anti-transgender prejudice, and is defined as an emotional reaction of disgust toward individuals who do not conform to society's gender expectations (Hill, 2002; Hill & Willoughby, 2005; Nagoshi et al., 2008). Transgender people, as well as very masculine women, very feminine men, and cross-dressers would fall under this banner. Transphobia is not just about hatred or fear of transgender people; it refers to a larger belief system about gender identification and traditional gender roles (Hill & Willoughby, 2005; Nagoshi et al., 2008).

Transphobia is closely related to attitudes (summary evaluations of an observed object; Crano & Prislin, 2006). Specific evaluations can be influenced by a combination of situational factors and past experiences (Fazio, 2007). A person may have a history of negative interactions with members of a social group, but may not express that negativity when meeting a new member of that group in a familial context. Attitudes vary in the intensity of the evaluation based on the strength of the association (Fazio, 2007). For example, two different people may both be negative toward the same group of people, but differ in the intensity of their negativity. The goal of the present research was to reduce the intensity of transphobic attitudes via an informational intervention targeting traditional gender role ideology.

**Traditional Gender Role Ideology and Prejudice against Transgender People**

The current research tested the hypothesis that changing traditional gender role ideology will influence transphobia and attitudes toward transgender people. Traditional gender role
ideology is the belief that men and women fall into discrete categories (Kerr & Holden, 1996). Researchers make the argument that traditional gender role ideology does not refer to any specific content (Katz, 1995; Herek, 2002; Hill & Willoughby, 2005; Bandini & Maggi, 2014), but rather to the cognitive framework underlying the belief that male and female are distinct categories (Brown & Gladstone, 2012). For example, believing that women should be good at housework refers to a specific belief that fits into a broader idea that women are alike in certain ways. Even if people have different stereotypes about men and women, gender role ideology is the shared scaffolding that postulates that these differences ought to exist (Brown & Gladstone, 2012).

Anti-transgender prejudice can be understood as part of a three-stage model. First, there is a broader cultural level devaluation of people who live outside of a traditional gender role (Hill, 2002). Transgender people identify with a gender that is different from what they were assigned at birth (Nagoshi et al, 2008). Transphobia is the emotional disgust that follows when a person who holds traditional gender role values reacts to a person who lives outside of or otherwise challenges the validity of that broader worldview (Hill & Willoughby, 2005). If a person does not believe that men and women are distinct categories that dictate how people should behave, then transgender people are not a threat to this person’s worldview and transphobia becomes unnecessary.

**Essentialism and Prejudice against Transgender People**

Because essentialist beliefs are related to gender role ideology, we might expect they would also influence attitudes toward transgender people. Essentialist beliefs refer to a perceived inalterability or naturalness in category membership (e.g., a person cannot change their gender; Gelman, 2003) and are comprised of two core components. First, membership in the category in question is believed to be inalterable. Second, membership in the category must be informative
in that it can be used to make inferences about the person’s thoughts and future behaviors (Rothbart & Taylor, 1992). Gender is typically seen as a highly natural category where a person’s identity as a man or woman is innate and unchangeable (Mahalingam, 2003). Further, being a man or woman is viewed by gender essentialists to have legitimacy in predicting how a person should be expected to behave. Consequently, gender essentialism is related to stereotype endorsement. As a result, stronger beliefs in an essentialist definition of gender is related to stronger endorsements of gender stereotypes (Bastian & Haslam, 2005).

Similarly, in traditional gender role ideology, gender essentialism has also been implicated as an antecedent of transphobia (Santos, Goldstein & Tracey, 2017; Ching & Xu, 2017). Whereas traditional gender role ideology refers to the perception that there should be differences between men and women, gender essentialism refers to the source of those differences (Santos, Goldstein & Tracey, 2017). Gender essentialists see gender roles as fixed and biologically determined (Batian & Haslam, 2006). Transgender people challenge these ideas by living in a gender role that is different than what was assigned to them at birth based on their biology (Nagoshi et al, 2008). Biological essentialist views of gender have been correspondingly associated with anti-transgender prejudice (Tee & Hegarty, 2006; Norton & Herek, 2013)

**Overview of Current Studies**

Changing attitudes toward transgender people might result from providing arguments against existing gender role ideology and gender essentialist beliefs. Due to the nature of gender as a social construct with biological underpinnings, there are several ways to structure potential counter-arguments. One way would be to challenge the biological elements of gender essentialism by highlighting genetic diversity in the human species, such as cases where people are born intersex (a condition wherein a person’s anatomy is not easily categorized as male or female). Another approach could argue that gender is a social construct that has changed over
time. The overall goal of this thesis was to develop a computerized intervention that could easily be administered to people through the internet.

The focus of the present research is to reduce negative attitudes and behavior toward transgender people. Based on the research described above, it is reasonable to believe that one way of doing so might be to reduce traditional gender role ideology and essentialist beliefs. If a person is more accepting of fluid gender identities, then they might also be more accepting of people who identify themselves as outside of the gender binary. The specific hypotheses that will be tested in this research are:

- **Hypothesis 1:** Given that traditional gender role ideology is characterized by the belief in the rigidity of gender, participants who are assigned to read a passage about the fluidity of gender will report less endorsement of traditional gender role ideology than will participants in a control condition. (Study 1)

- **Hypothesis 2:** Given that traditional gender role ideology is characterized by the belief in the rigidity of gender, participants who are assigned to read a passage about the fluidity of gender will report less endorsement of essentialist beliefs than will participants in a control condition. (Study 1)

- **Hypothesis 3:** Given that transphobia is related to gender role ideology, participants who are assigned to read a passage about the fluidity of gender will report a) less transphobia b) less negative attitudes and c) a lesser amount of discriminatory behavior toward transgender people than will participants in a control condition. (Study 1)

- **Hypothesis 4:** The reduction in transphobia specified in Hypothesis 3 will be mediated by a reduction in: (a) traditional gender role beliefs, and (b) essentialist beliefs. (Study 3)

The purpose of Study 1 was to compare several novel approaches to reducing participants’ support for traditional gender role ideology and gender essentialist beliefs. For the first study, the content of the passages was developed to target different gender essentialism and traditional gender role ideology via two different approaches. One passage explains how biological essentialist perceptions of gender do not align with reality. The other passage explains how social roles surrounding gender have changed over time. A third passage will present both arguments to determine whether presenting both a social and biological argument simultaneously
is more effective than presenting either alone. Since both traditional gender role ideology and
gender essentialism 1) contribute to anti-transgender prejudice, and 2) are rooted in the idea that
binary gender categories are meaningful, offering information challenging these ideas should
dissuade participants of traditional gender role advocacy and gender essentialism. Study 2 was a
confirmatory replication of the exploratory results of Study 1. Studies 3, 4, 5, and 6 were also
attempts to establish an intervention paradigm that could reduce traditional gender role ideology
and transphobia in participants.
CHAPTER 2
STUDY 1

Method

Participants

Participants volunteered at the Project Implicit website (https://implicit.harvard.edu; Nosek, 2005), a virtual laboratory for researchers who are focused on implicit social cognition. Four-hundred ninety-three U.S. citizens completed all materials (68.6% women, 70.4% White; see Table 2-1 for more information about the sample). This number was selected after conducting an analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) that indicated a sample of 280 participants would provide 95% power to detect an average-sized between-subjects effect in a study with four conditions (Cohen’s $d = .2$; Faul, Erdfelder, Lang, & Buchner, 2007). More than 280 participants were collected to provide additional power for any additional exploratory analyses beyond those previously mentioned and because the actual size of the effect was unknown and could be smaller than presumed. All participants consented to take part in this research and the appropriate institutional review board approved the research.

Materials

Gender role manipulation

Participants were randomly assigned to read one of five passages. In the Social-Biological Argument Condition, participants read an article explaining how recent research findings have shown that there are no inherent distinctions between a male and female brain and that most people possess a mix of traits that are common in both females and males (Joel et al., 2015). The passage further described these findings, specifically how sex and gender are separate and how there really is no such thing as a “male or female brain.” In addition to discussing
relevant research, the passage discussed historical and contemporary examples of how gender expression has varied over time and between cultures.

In the Biological Argument Condition, participants received only the biological arguments presented in the combined passage. In the Social Argument Condition, participants read only the social-based information presented in the combined passage. In the Essentialism Condition, participants read a passage about how sex and gender are different constructs and how there are certain essential differences between men and women. Participants in the Control Condition read a passage of similar length about an unrelated topic (e.g. the history of chess). Each passage was followed by an attention check question (“What was the passage you just read about?”; chess, gender, car repair). Eight participants (1.6%) did not answer the attention check question correctly or refused to answer the question, and were excluded from the analysis. See Appendix A for full text.

Outcome variables

Traditional gender role ideology. Traditional gender role ideology was measured using the Gender Role Beliefs Scale (GRBS) short form (Brown & Gladstone, 2012). This 10-item measure is designed to assess beliefs about gender characteristics and differences. An example item is: “Women should have as much sexual freedom as men.” (6-point scale; 1 = very cold; 7 = very warm). Higher scores on this measure indicate stronger beliefs in traditional gender roles. Responses were combined to create a composite score (α = .81). See Appendix B for full text.

Essentialist beliefs. Essentialist beliefs were measured using the Essentialist Beliefs Scale developed by Bastian & Haslam (2006). This scale consists of three subscales: discreteness, informativeness, and biological basis. Each of these three domains are used to measure a different dimension of essentialist beliefs. Biological basis items include, “The kind of person someone is can be largely attributed to their genetic inheritance,” and, “A person’s traits
are never determined by their biology” (reversed). An example item from the discreteness subscale is, “People can behave in ways that seem ambiguous, but the central aspects of their character are clear-cut.” The informativeness subscale includes items such as, “There are different ‘types’ of people and it is possible to know what ‘type’ of person someone is relatively quickly” (6-point scale; 1 = very cold; 7 = very warm). Responses were combined to create a composite score (α = .81). See Appendix C for full text.

**Attitudes toward transgender people.** Participants’ provided an overall evaluation of transgender people (“Please rate how warm or cold you feel towards transgender people?”; 7-point scale; 1 = very cold; 7 = very warm).

**Argument quality.** Argument quality was measured using a seven-item measure. Items included, “This passage is important,” “This passage is interesting,” “This passage is based in science,” and, “This passage held my attention.”; 7-point scale; 1 = strongly disagree; 7 = strongly agree. Responses were combined to create a composite score (α = .80). Argument quality was included as a secondary outcome measure to judge whether the experimental conditions were approximately equivalent in quality. Should there be a large enough discrepancy, the passages could be reworded in future studies. Even though there is substantial literature that suggests participants tend to process information more fully when they attend to it more deeply (Petty & Cacioppo, 1986), the moderating influence of perceived argument quality was not examined. Rather, argument quality was only used as a metric to compare the exploratory wording of the passages in each condition.

**Procedure**

Following informed consent, participants were randomly assigned to one of the four traditional gender role ideology conditions: Biological Argument, Social Argument, Social-Biological Argument, Essentialism, or Control. After reading their assigned passage, participants
responded to the manipulation check and completed the attention quality questionnaire. Participants who failed to correctly identify what the passage that they read was about were excluded from the analysis. Following the manipulation check and argument quality questionnaire, participants completed the traditional gender role ideology scale and essentialist belief items (counterbalanced). After completing all study materials, participants were debriefed.

**Results**

The primary test of each hypothesis was a one-way between-subjects’ ANOVA comparing all five study conditions. In this study and all future studies, all available data was used. See Table 2-2 for overall descriptive statistics by study condition. See Table 2-3 for a list of correlations among study variables.

**Traditional gender role ideology.** There was no significant overall difference between study conditions on traditional gender role ideology, $F(4, 477) = 0.57, p = .69, \eta_{p}^{2} = .01, 95\% \text{ CI } \eta_{p}^{2} = [0.00, 0.01]$.

**Essentialist beliefs.** There was no significant overall difference between study conditions on essentialist beliefs, $F(4, 477) = 1.90, p = .11, \eta_{p}^{2} = .02, 95\% \text{ CI } \eta_{p}^{2} = [0.00, 0.04]$.

**Attitudes toward transgender people.** There was no significant overall difference between study conditions on attitudes toward transgender people, $F(4, 476) = 0.47, p = .76, \eta_{p}^{2} = .003, 95\% \text{ CI } \eta_{p}^{2} = [0.00, 0.01]$.

**Argument quality.** There was a significant overall difference between study conditions on argument quality, $F(4, 480) = 8.72, p < .001, \eta_{p}^{2} = .07, 95\% \text{ CI } \eta_{p}^{2} = [0.3, 0.11]$. A Bonferroni-adjusted post-hoc analysis showed that there was a significant difference between the Control Condition ($M = 4.59, SD = 1.04$) and the Social Argument Condition ($M = 5.24, SD = 0.97$), $p = .001$, Cohen’s $d = 0.64, 95\% \text{ CI } = [0.35, 0.93]$, the Biological Argument Condition ($M = 5.04, SD = 1.05$), $p = .02$, Cohen’s $d = 0.43, 95\% \text{ CI } = [0.15, 0.70]$, and the Social-Biological
Argument Condition ($M = 5.35$, $SD = 1.07$), $p < .001$, Cohen’s $d = 0.72$, 95% CI = [0.43, 1.00].

As a result, the participants found these experimental conditions more interesting than the control. There was not a significant difference between the Control Condition and the Essentialism passage, $p = .99$. There was, however, a significant difference between the Social Argument Condition ($M = 5.24$, $SD = 0.97$) and the Essentialism Condition ($M = 4.79$, $SD = 1.12$), $p = .045$, Cohen’s $d = 0.43$, 95% CI = [0.13, 0.72]. Participants in these two conditions found the Social Argument Condition more interesting than the Essentialism passage.

**Discussion**

The results of Study 1 did not support the hypothesis that reading socially based arguments about the flexibility of gender, biologically based arguments about the flexibility of gender, or a combination of the two would reduce essentialist beliefs, reduce advocacy for traditional gender role ideology, or improve attitudes toward transgender people. One reason for this null finding might be that the content of the information was not worded effectively enough to change attitudes. I also found that asking participants to read information supporting an essentialist perspective did not increase any of the constructs of interest. Because the essentialism condition failed to increase these constructs of interest and that the goal of this research is to decrease transphobia, this condition was excluded from subsequent studies.

The most robust finding in this study was that participants found the Control Condition less interesting than the Biological Argument, Social Argument, and Social-Biological Argument Conditions. The argument quality items were included as a means of measuring the perceived quality of the arguments in this study. Participants that found the arguments of higher quality may have also found them more persuasive and shown higher levels of attitude change. Hence, it was important that the experimental passages be as similar as possible in quality. Reassuringly, participants generally found the experimental conditions of approximately the same quality.
Further, the differences between the Control Condition and the three aforementioned experimental conditions should have exacerbated the persuasiveness of the experimental passages if they were effective at changing attitudes.

In Study 2, I adjusted the formatting of the biological argument passage to be closer to the social argument to determine whether it would still result in a null effect. It is also possible that the measures may have been improperly suited to what we were trying to measure. For example, the measure of essentialism we selected catered to measuring essentialism more generally and not specifically gender essentialism. Our measure of traditional gender role ideology also included items such as, “It is ridiculous for a woman to run a train and a man to sew clothes.” This type of language may have seemed anachronistic to our participants. In Study 2, we replaced both measures with different scales of the same constructs.
### Table 2-1. Demographic Distributions for Each Study

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Study 1</th>
<th>Study 2</th>
<th>Study 3</th>
<th>Study 4</th>
<th>Study 5</th>
<th>Study 6</th>
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<td></td>
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<td>Mean (years)</td>
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<td>33.9</td>
<td>19.5</td>
<td>35.5</td>
<td>33.1</td>
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<td>SD</td>
<td>14.8</td>
<td>15.2</td>
<td>1.14</td>
<td>15.8</td>
<td>15.1</td>
<td>13.8</td>
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<td>% Women</td>
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<td>65.8</td>
<td>23.5</td>
<td>62.7</td>
<td>73.9</td>
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<td>% Men</td>
<td>31.4</td>
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<td>76.5</td>
<td>36.9</td>
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<tr>
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<td>0.0</td>
<td>0.4</td>
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<td>25.0</td>
<td>7.2</td>
<td>11.1</td>
<td>19.8</td>
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<td>6.8</td>
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<td>70.6</td>
<td>78.3</td>
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<td>2.0</td>
<td>0.5</td>
<td>.5</td>
</tr>
<tr>
<td>% Multi-racial (Other)</td>
<td>5.3</td>
<td>4.7</td>
<td>2.9</td>
<td>4.4</td>
<td>3.5</td>
<td>7.0</td>
</tr>
<tr>
<td>% Unknown</td>
<td>5.3</td>
<td>3.7</td>
<td>2.9</td>
<td>3.2</td>
<td>4.5</td>
<td>8.6</td>
</tr>
<tr>
<td>% Missing</td>
<td>0.8</td>
<td>1.3</td>
<td>0.0</td>
<td>1.2</td>
<td>1.0</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Political Identification</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Strongly Conservative</td>
<td>2.8</td>
<td>2.3</td>
<td>14.8</td>
<td>4.4</td>
<td>2.0</td>
<td>1.1</td>
</tr>
<tr>
<td>% Moderately Conservative</td>
<td>8.1</td>
<td>9.1</td>
<td>28.1</td>
<td>12.9</td>
<td>8.5</td>
<td>5.3</td>
</tr>
<tr>
<td>% Slightly Conservative</td>
<td>6.5</td>
<td>8.1</td>
<td>9.6</td>
<td>9.2</td>
<td>4.0</td>
<td>4.8</td>
</tr>
<tr>
<td>% Moderate/neutral</td>
<td>26.4</td>
<td>20.1</td>
<td>23.0</td>
<td>23.7</td>
<td>26.1</td>
<td>28.9</td>
</tr>
<tr>
<td>% Slightly liberal</td>
<td>11.4</td>
<td>6.4</td>
<td>6.7</td>
<td>6.8</td>
<td>9.0</td>
<td>11.8</td>
</tr>
<tr>
<td>% Moderately liberal</td>
<td>26.8</td>
<td>28.2</td>
<td>14.1</td>
<td>22.9</td>
<td>29.6</td>
<td>28.9</td>
</tr>
<tr>
<td>% Strongly liberal</td>
<td>15.2</td>
<td>19.5</td>
<td>3.7</td>
<td>15.3</td>
<td>16.1</td>
<td>15.5</td>
</tr>
<tr>
<td>% Missing</td>
<td>2.8</td>
<td>6.4</td>
<td>0.0</td>
<td>4.8</td>
<td>4.5</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Total N: 493 298 136 249 199 187

*Note.* Percentages for race, gender, political identification, and ethnicity may not sum to 100 due to rounding error.
Table 2-2. Means and (Standard Deviations) for Measured Variables by Condition in Study 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>Biological</th>
<th>Social</th>
<th>Combined</th>
<th>Essentialism</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>2.45</td>
<td>2.35</td>
<td>2.55</td>
<td>2.54</td>
<td>2.49</td>
</tr>
<tr>
<td></td>
<td>(0.93)</td>
<td>(0.96)</td>
<td>(1.04)</td>
<td>(0.91)</td>
<td>(1.16)</td>
</tr>
<tr>
<td></td>
<td>N = 102</td>
<td>N = 91</td>
<td>N = 97</td>
<td>N = 89</td>
<td>N = 103</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>3.7</td>
<td>3.66</td>
<td>3.81</td>
<td>3.84</td>
<td>3.68</td>
</tr>
<tr>
<td></td>
<td>(0.53)</td>
<td>(0.46)</td>
<td>(0.59)</td>
<td>(0.59)</td>
<td>(0.63)</td>
</tr>
<tr>
<td></td>
<td>N = 102</td>
<td>N = 91</td>
<td>N = 97</td>
<td>N = 89</td>
<td>N = 103</td>
</tr>
<tr>
<td>3. Attitudes … Transgender People</td>
<td>4.6</td>
<td>4.78</td>
<td>4.46</td>
<td>4.57</td>
<td>4.61</td>
</tr>
<tr>
<td></td>
<td>(1.56)</td>
<td>(1.58)</td>
<td>(1.68)</td>
<td>(1.64)</td>
<td>(1.68)</td>
</tr>
<tr>
<td></td>
<td>N = 102</td>
<td>N = 91</td>
<td>N = 96</td>
<td>N = 89</td>
<td>N = 103</td>
</tr>
<tr>
<td>4. Argument Quality</td>
<td>5.04a</td>
<td>5.24a</td>
<td>5.35ab</td>
<td>4.79b</td>
<td>4.59a</td>
</tr>
<tr>
<td></td>
<td>(1.05)</td>
<td>(0.97)</td>
<td>(1.07)</td>
<td>(1.12)</td>
<td>(1.04)</td>
</tr>
<tr>
<td></td>
<td>N = 103</td>
<td>N = 92</td>
<td>N = 97</td>
<td>N = 89</td>
<td>N = 104</td>
</tr>
</tbody>
</table>

Note. Standard deviations are presented in parenthesis under each mean. Conditions marked with the same subscript in the same row reflect a significant difference between means by condition, p < .05.
Table 2-3. Correlations among Measured Variables in Study 1

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>-</td>
<td>(0.35, 0.50)</td>
<td>(-0.56, -0.42)</td>
<td>(-0.31, -0.14)</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>0.43</td>
<td>-</td>
<td>(-0.30, -0.13)</td>
<td>(-0.07, -0.24)</td>
</tr>
<tr>
<td>3. Attitudes … Transgender People</td>
<td>-0.50</td>
<td>-0.22</td>
<td>-</td>
<td>(0.25, 0.08)</td>
</tr>
<tr>
<td>4. Argument Quality</td>
<td>-0.22</td>
<td>-0.15</td>
<td>0.16</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. 95% confidence intervals for each correlation are presented in the corresponding diagonal. All correlations are significant, p < .05.
CHAPTER 3
STUDY 2

Method

Participants

Participants volunteered at the Project Implicit website (https://implicit.harvard.edu; Nosek, 2005). Two-hundred and ninety-eight U.S citizens completed all materials (see Table 3-1(1) for more information about the sample). This number was selected after conducting an analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) that indicated a sample of 280 participants would provide 95% power to detect an average-sized between-subjects effect ($f = .25$; Faul, Erdfelder, Lang, & Buchner, 2007). Slightly more participants than necessary were recruited to account for participants who failed the manipulation check and needed to be excluded from the analysis. All participants consented to take part in this research and the appropriate institutional review board approved the research.

Materials

Gender role manipulation

Participants were randomly assigned to read one of four passages. In the Biological Argument Condition, participants read an article explaining how recent research findings have shown that there is greater biological diversity than accounted for by a male/female dichotomy, leaving some people outside of a clearly binary identity (Ainsworth, 2015; Olson et al., 2015). In addition to discussing relevant research, the passage discussed historical and contemporary examples of how gender expression has varied over time and between cultures. The Social Argument Condition, Social-Biological Combined Condition, and Control Condition were worded exactly as in Study 1.
A new manipulation check item was added to focus more on the content of the passage and better detect inattentive participants given very low rates of failure in Study 1. Participants in the Biological Argument Condition were asked “According to the passage, biological sex...” with the response options “is assigned at birth,” “has two categories with no exceptions,” “has much greater diversity than most people realize.” In the Social Argument and Social-Biological Argument Conditions, participants were asked, “According to the passage, gender expression...” with the options “has strict rules that must always be followed,” “varies across cultures and time,” and “has not changed over time.” Participants in the control condition were asked the exact same question as in Study 1. Thirty-five participants (11.7%) failed the manipulation check question and were excluded from the analysis. See Appendix D for full text.

Outcome variables

Traditional gender role ideology. Traditional gender role ideology was measured using the Social Roles Questionnaire (SRQ; Baber & Tucker, 2006). This 13-item measure assesses beliefs about gender characteristics and differences. Responses were combined to create a composite score (7-point scale; 1 = Strongly Disagree; 7 = Strongly Agree; α = .75) where higher scores on this measure indicated stronger beliefs in traditional gender roles. Full text is in Appendix E.

Essentialist beliefs. Essentialist beliefs were measured using the Gender Determinism Scale developed by Tinsley, Howell & Amanatullah (2014). This scale consists of four items. Responses were combined to create a composite score (7-point scale; 1 = Strongly Disagree; 7 = Strongly Agree; α = .76). See Appendix F for full-text.

Attitudes toward transgender people. Attitudes toward transgender people were measured exactly as in Study 1 (α = .76).
**Argument quality.** Argument quality was measured using an abridged selection of the items. In Study 2, only the items, “This passage is important,” “This passage is interesting,” “This passage held my attention,” and “This passage was a waste of my time” were included. (α = .76).

**Procedure**

The procedure was the same as in Study 1.

**Results**

The primary test of each hypothesis was a one-way between-subjects ANOVA to compare each condition. See Table 2 for descriptive statistics by student condition. See Table 3 for a list of correlations among study variables.

**Traditional gender role ideology.** There was no significant overall difference between study conditions on traditional gender role ideology, $F(3, 258) = 2.44, p = .07$, $\eta^2_p = .03$, 95% CI $\eta^2_p = [0.00, 0.07]$.

**Essentialist beliefs.** There was no significant overall difference between study conditions on traditional gender role ideology, $F(3, 256) = 1.73, p = .16$, $\eta^2_p = .01$, 95% CI $\eta^2_p = [0.00, 0.06]$.

**Attitudes toward transgender people.** There was no significant overall difference between study conditions on traditional gender role ideology, $F(3, 256) = 1.05, p = .37$, $\eta^2_p = .01$, 95% CI $\eta^2_p = [0.00, 0.04]$.

**Argument Quality.** There was no significant overall difference between study conditions on traditional gender role ideology, $F(3, 259) = 17.16, p < .001$, $\eta^2_p = .17$, 95% CI $\eta^2_p = [0.00, 0.24]$. A Bonferroni adjusted post-hoc analysis showed that there was a significant difference between the Control Condition ($M = 4.42, SD = 1.30$) and the Social Argument Condition ($M = 5.52, SD = 1.04$), $p < .001$, Cohen’s $d = 0.13$, 95% CI = [0.58, 1.32], the Biological Argument
Condition ($M = 5.64, SD = 1.24$), $p < .001$, Cohen’s $d = 0.95$, 95% CI = [0.58, 1.32], and the Social-Biological Argument Condition ($M = 5.56, SD = 1.20$), $p < .001$, Cohen’s $d = 0.91$, 95% CI = [0.56, 1.24]. The results indicated that participants found these experimental conditions more interesting than the control.

**Discussion**

The results of Study 2 also failed to support the hypothesis that providing participants with written information would cause a reduction in traditional gender role beliefs. Although there was some sign of initial promise in showing a reduction in traditional gender role ideology, those findings failed to replicate in this subsequent study. Moreover, the same intervention materials failed to produce changes in other important constructs. Between Studies 1 & 2, as well as the replication of Study 2, the hypotheses was that providing written information to participants would be an intervention capable of producing measurable attitude change. Moreover, the model proposed by Norton & Hereck (2013) suggests that the theorized effect of the intervention on transphobia in Study 3 should be mediated by the effect of the intervention of traditional gender role ideology and transphobia. Because the current intervention strategy has failed to show any influence on these proposed mediators, a different intervention format was used in Study 3.

In Study 3, focus shifted from written information and instead participants learned the information through a video lecture format. After testing two studies and finding null results in shifting participants’ gender role attitudes, one possible issue was that the current wording of the passages or the format of the content was not engaging enough to induce attitude change. A video format could be more engaging. A measure of transphobia and attitudes toward transgender people was added. This different measure of gender essentialism that more directly
asked participants about their belief in the mutability of gender identity, added a measure of desired closeness with transgender people.

Previous studies failed to see an effect of the intervention on participants’ self-reported attitudes toward transgender people. The desired closeness with transgender people item was included to provide a measure of a person’s desire to associate with transgender people apart from their general evaluation of them. The self-reported attitudes of transgender people item was also replaced with a short scale of three items designed to measure the same construct.
Table 3-1. Means and (Standard Deviations) for Measured Variables by Condition in Study 2

<table>
<thead>
<tr>
<th></th>
<th>Biological</th>
<th>Social</th>
<th>Combined</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>1.91</td>
<td>2.10</td>
<td>2.21</td>
<td>2.27</td>
</tr>
<tr>
<td></td>
<td>(0.63)</td>
<td>(0.75)</td>
<td>(0.82)</td>
<td>(0.85)</td>
</tr>
<tr>
<td></td>
<td>N = 61</td>
<td>N = 73</td>
<td>N = 73</td>
<td>N = 86</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>2.39</td>
<td>2.36</td>
<td>2.80</td>
<td>2.43</td>
</tr>
<tr>
<td></td>
<td>(1.07)</td>
<td>(1.23)</td>
<td>(1.19)</td>
<td>(1.37)</td>
</tr>
<tr>
<td></td>
<td>N = 60</td>
<td>N = 73</td>
<td>N = 72</td>
<td>N = 87</td>
</tr>
<tr>
<td>3. Attitudes…Transgender People</td>
<td>5.33</td>
<td>4.98</td>
<td>4.83</td>
<td>4.90</td>
</tr>
<tr>
<td></td>
<td>(1.33)</td>
<td>(1.72)</td>
<td>(1.61)</td>
<td>(1.59)</td>
</tr>
<tr>
<td></td>
<td>N = 60</td>
<td>N = 72</td>
<td>N = 72</td>
<td>N = 85</td>
</tr>
<tr>
<td>4. Argument Quality</td>
<td>5.64</td>
<td>5.52</td>
<td>5.56</td>
<td>4.42</td>
</tr>
<tr>
<td></td>
<td>(1.24)</td>
<td>(1.04)</td>
<td>(1.20)</td>
<td>(1.30)</td>
</tr>
<tr>
<td></td>
<td>N = 61</td>
<td>N = 71</td>
<td>N = 73</td>
<td>N = 86</td>
</tr>
</tbody>
</table>

Note. Standard deviations are presented in parenthesis under each mean.
Table 3-2. Correlations among Measured Variables in Study 2

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>-</td>
<td>(0.32, 0.52)</td>
<td>(-0.53, -0.33)</td>
<td>(-0.37, -0.15)</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>0.43</td>
<td>-</td>
<td>(-0.35, -0.12)</td>
<td>(-0.15, 0.09)</td>
</tr>
<tr>
<td>3. Attitudes...Transgender People</td>
<td>-0.43</td>
<td>-0.23</td>
<td>-</td>
<td>(0.18, 0.40)</td>
</tr>
<tr>
<td>4. Argument Quality</td>
<td>-0.26</td>
<td>-0.03</td>
<td>0.30</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. 95% confidence intervals for each correlation are presented in the corresponding diagonal. All correlations are significant, p < .05.
CHAPTER 4
STUDY 3

Method

Participants

One-hundred and thirty-six students at the University of Florida completed all materials (see Table 4-1 for more information about the sample). The initial targeted sample consisted of 200 participants. This number was arrived at after conducting an analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) that indicated a sample of 200 participants would provide 95% power to detect an average-sized between-subjects effect between two cells (Cohen’s $d = .2$). However, the size of the participant pool limited the number of available participants. All participants consented to take part in this research and the appropriate institutional review board approved the research.

Materials

Gender role manipulation

Participants were randomly assigned to watch one of two TED talks. TED talks are informative talks themed loosely around technology, engineering, or design. In the gender-centric video condition, participants were asked to watch a video presentation by Alice Dreger titled, “Is anatomy destiny?” In her talk, the speaker discusses how the traditional binary understanding of sex does not perfectly capture the experience of all people. She further challenges the idea that biological anatomy is problematic and questionable. Participants in the control condition watched a presentation by Rebecca Brachman titled, “Could a drug prevent depression and PTSD?” This video was selected due to its comparable length and lack of relevance to gender. In addition to discussing relevant research, the passage discussed historical
and contemporary examples of how gender expression has varied over time and between cultures.

**Outcome variables**

**Traditional gender role ideology.** Traditional gender role ideology was measured using the same procedure as Study 2 (α = .80).

**Essentialist beliefs.** Essentialist beliefs were measured using the five-item Gender Essentialist Beliefs scale (7-point scale; 1 = Strongly Disagree; 7 = Strongly Agree; α = .69; Hettinger, 2014). This measure was designed to specifically measure beliefs about the mutability of gender identity. Full text is in Appendix G.

**Attitudes toward transgender people.** Attitudes toward transgender people were measured using a three-item scale: (a) *In my opinion, Transgender people are: bad–good*; (b) *In my opinion, Transgender people are: unlikeable–likeable*; and (c) *How much do you like Transgender people?: dislike very much –like very much.* Participants’ responses were averaged to create a composite score of desired closeness (7-point scale; 1 = Very Negative; 7 = Very Positive; α = .92).

**Transphobia.** Transphobia was measured using the 9-item Transphobia scale (7-point scale; 1 = Strongly Disagree; 7 = Strongly Agree; α = .91, Nagoshi et al., 2008). Items included the statement, “I think there is something wrong with a person who says that they are neither a man nor a woman.” Full text is in Appendix H.

**Desired closeness.** Desired closeness was measured using a three-item scale: (a) *I would like to have a transgender person as a close friend*; (b) *I would like to meet and interact with a transgender person*; and (c) *I feel like I am personally similar to transgender people.* Participants’ responses were averaged to create a composite score of desired closeness (7-point scale; 1 = Strongly Disagree; 7 = Strongly Agree; α = .73).
Self-reported attitudes toward policies affecting transgender people. Participants rated their agreement or disagreement (7-point scale; 1 = Strongly Disagree; 7 = Strongly Agree, $\alpha = .89$) with five transgender policy issues presented in randomized order: (a) Transgender people should be able to use the bathroom of the gender they most closely identify with; (b) Transgender people should be able to adopt children; (c) Health insurance should cover services needed by transgender people (hormones, surgery, etc.); (d) Transgender people working in offices with dress codes should be able to dress as the gender they most closely identify with; (e) Transgender people should be able to easily obtain new official documents (driver's license, passports, etc.) after deciding to transition. Participants’ responses were averaged to create a composite score of desired closeness ($\alpha = .89$).

Cissexism. Cissexism, prejudice against transgendersed people, was measured using an adjusted version of Wright, Adams & Bernat’s (1999) homophobia scale. Each of the twenty-five items on this measure were rated using 7-point scales. Responses were combined to create a composite score (7-point scale; 1 = Strongly Disagree; 7 = Strongly Agree; $\alpha = .97$). Full text is in Appendix I.

Procedure

The experimenter greeted participants at the University of Florida and seated them at a computer. Prior to each participant’s arrival, the experimenter opened a link to the study on a computer. Consent was obtained as part of the computerized study. Following consent, participants were randomly assigned to one of the video conditions. An experimenter was present during the video portion of the study to ensure that participants watched the video to completion. Following the video, the experimenter exited the room and allowed each participant to complete the demographics questionnaire and outcome measures in randomized order.
Results

Separate independent samples t-tests were used to examine whether there was an effect of condition assignment on any of the dependent measures in this study. See Table 4-2 for overall descriptive statistics by student condition. See Table 4-3 for a list of correlations among study variables.

**Traditional gender role ideology.** Participants in the intervention condition \((M = 2.39, SD = 0.85)\) did not report significantly different endorsement of traditional gender role ideology compared to participants in the control condition \((M = 2.26, SD = 0.70), t_{134} = 1.01 p = .32, \) Cohen’s \(d = 0.17, 95\% \text{ CI} = [-0.17, 0.51]\).

**Essentialist beliefs.** Participants in the intervention condition \((M = 3.18, SD = 1.18)\) did not report significantly different essentialist beliefs compared to participants in the control condition \((M = 3.14, SD = 1.15), t_{134} = 0.20, p = .84, \) Cohen’s \(d = 0.03, 95\% \text{ CI} = [-0.30, 0.37]\).

**Attitudes toward transgender people.** Participants in the intervention condition \((M = 4.76, SD = 1.15)\) did not report significantly different attitudes toward transgender people compared to participants in the control condition \((M = 4.89, SD = 0.98), t_{134} = -0.73, p = .47, \) Cohen’s \(d = -0.13, 95\% \text{ CI} = [-0.47, 0.21]\).

**Transphobia.** Participants in the intervention condition \((M = 3.38, SD = 1.41)\) did not report significantly different levels of transphobia compared to participants in the control condition \((M = 3.25, SD = 1.41), t_{134} = 0.53, p = .60, \) Cohen’s \(d = 0.09, 95\% \text{ CI} = [-0.25, 0.43]\).

**Desired closeness with transgender people.** Participants in the intervention condition \((M = 4.02, SD = 1.39)\) did not report significantly different desired closeness with transgender people compared to participants in the control condition \((M = 4.25, SD = 1.22), t_{134} = -1.03, p = .30, \) Cohen’s \(d = 0.18, 95\% \text{ CI} = [-0.16, 0.52]\).
Policy advocacy. Participants in the intervention condition ($M = 5.49$, $SD = 1.51$) did not report significantly different advocacy for pro-transgender policies compared to participants in the control condition ($M = 5.70$, $SD = 1.31$) $t_{134} = -0.87$, $p = .39$, Cohen’s $d = 0.15$, 95% CI = [-0.19, 0.49].

Cissexism. Participants in the intervention condition ($M = 1.86$, $SD = 0.92$) did not report significantly different levels of cissexism compared to participants in the control condition ($M = 1.72$, $SD = 0.75$), $t_{134} = 0.97$, $p = .34$, Cohen’s $d = 0.17$, 95% CI = [-0.51, 0.17].

Discussion

As in Studies and 1 and 2, the results of Study 3 did not support my hypothesis that presenting an argument about there being greater biological diversity in gender and sex than typically discussed would reduce participants endorsement of traditional gender role ideology, cissexism, transphobia, and attitudes toward transgender people relative to participants who watched a video unrelated to gender. Even though it was initially hypothesized that the effect of the intervention on transphobia would be mediated by traditional gender role ideology, the lack of an effect of the intervention on traditional role ideology made it impossible to verify.

Studies 1, 2 and 3, were novel interventions created based on a review of the literature. However, none of these intervention conditions produced the expected effect. Because the main focus of this research was to test the connection between traditional gender role ideology and transphobia, having a successful intervention was essential. Rather than continuing to try to generate and test novel intervention strategies, another possibility was to use interventions from the published literature that had already been shown to influence similar constructs. Study 4 returned to written passage interventions, directly replicating a published intervention by Kray, Howland, Russell & Jackman (2017).
<table>
<thead>
<tr>
<th>Measure</th>
<th>Intervention N = 60</th>
<th>Control N = 76</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>2.39 (0.85)</td>
<td>2.26 (0.70)</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>3.18 (1.18)</td>
<td>3.14 (1.15)</td>
</tr>
<tr>
<td>3. Attitudes…Transgender People</td>
<td>4.76 (1.15)</td>
<td>4.89 (0.98)</td>
</tr>
<tr>
<td>4. Transphobia</td>
<td>3.38 (1.41)</td>
<td>3.25 (1.41)</td>
</tr>
<tr>
<td>5. Desired Closeness</td>
<td>4.02 (1.39)</td>
<td>4.25 (1.23)</td>
</tr>
<tr>
<td>6. Attitudes toward Policies</td>
<td>5.49 (1.51)</td>
<td>5.70 (1.31)</td>
</tr>
<tr>
<td>7. Cissexism</td>
<td>1.86 (0.92)</td>
<td>1.72 (0.75)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are presented in parenthesis under each mean.
Table 4-2. Correlations among Measured Variables in Study 3

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>-</td>
<td>(0.48, 0.70)</td>
<td>(0.60, 0.77)</td>
<td>(-0.70, -0.49)</td>
<td>(-0.71, -0.49)</td>
<td>(0.63, 0.80)</td>
<td>(0.64, 0.80)</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>0.60</td>
<td>-</td>
<td>(-0.63, -0.38)</td>
<td>(0.52, 0.72)</td>
<td>(-0.65, -0.40)</td>
<td>(0.45, 0.68)</td>
<td>(0.45, 0.68)</td>
</tr>
<tr>
<td>3. Attitudes…Transgender People</td>
<td>-0.64</td>
<td>-0.51</td>
<td>-</td>
<td>(-0.77, -0.59)</td>
<td>(0.54, 0.74)</td>
<td>(0.52, 0.73)</td>
<td>(-0.80, -0.64)</td>
</tr>
<tr>
<td>4. Transphobia</td>
<td>0.69</td>
<td>0.63</td>
<td>-0.69</td>
<td>-</td>
<td>(-0.80, -0.64)</td>
<td>(-0.83, -0.70)</td>
<td>(0.76, 0.87)</td>
</tr>
<tr>
<td>5. Desired Closeness</td>
<td>-0.61</td>
<td>-0.54</td>
<td>0.65</td>
<td>-0.73</td>
<td>-</td>
<td>(0.55, 0.75)</td>
<td>(-0.77, -0.59)</td>
</tr>
<tr>
<td>6. Attitudes toward Policies</td>
<td>-0.61</td>
<td>-0.52</td>
<td>0.64</td>
<td>-0.77</td>
<td>0.66</td>
<td>-</td>
<td>(-0.90, -0.82)</td>
</tr>
<tr>
<td>7. Cissexism</td>
<td>0.73</td>
<td>0.57</td>
<td>-0.73</td>
<td>0.83</td>
<td>-0.69</td>
<td>-0.87</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. 95% confidence intervals for each correlation are presented in the corresponding diagonal. All correlations are significant, p < .05
Participants

Participants volunteered at the Project Implicit website (https://implicit.harvard.edu; Nosek, 2005), a non-profit organization and international virtual laboratory for researchers who are focused on implicit social cognition. Two-hundred and forty-nine U.S citizens completed all materials (see Table 4-1 for more information about the sample). This number was selected after conducting an analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) that indicated a sample of 280 participants would provide 95% power to detect an average-sized between-subjects effect (d = .2; Faul, Erdfelder, Lang, & Buchner, 2007). All participants consented to take part in this research and the appropriate institutional review board approved the research.

Materials

Gender role manipulation

Participants were randomly assigned to read one of two essays about the malleability of gender roles taken from Kray, Howland, Russell & Jackman (2017). In the incremental condition, participants read an essay titled “Social Gender Roles Are Changeable.” In the entity condition, participants read an essay titled “Societal Gender Roles, Like Plaster, Are Pretty Stable Over Time.” In both essays, participants read arguments attributed to fictional researchers explaining how gender roles are either contextually determined and subject to change or immutable. Full text for each passage is available in Appendix J.

Outcome variables

Traditional gender role ideology. Traditional gender role ideology was measured using the same procedure as in Study 2 (α = .81).
**Essentialist beliefs.** Essentialist beliefs were measured exactly as in Study 1 ($\alpha = .72$).

**Attitudes toward transgender people.** Attitudes toward transgender people were measured exactly as in Study 1 ($\alpha = .90$).

**Desired closeness.** Desired closeness was measured exactly as in Study 3 ($\alpha = .75$).

**Self-reported attitudes toward policies affecting transgender people.** Self-Reported Attitudes toward Policies Affecting Transgender People were measured exactly as in Study 3 ($\alpha = .87$).

**Cissexism.** Cissexism was measured exactly as in Study 3 ($\alpha = .96$).

**Procedure**

The procedure was the same as in Study 1.

**Results**

Separate independent samples t-tests were used to examine whether there was an effect of condition assignment on any of the dependent measures in this study. See Table 5-1 for overall descriptive statistics by student condition. See Table 5-2 for a list of correlations among study variables.

**Traditional gender role ideology.** Participants in the entity condition ($M = 2.26, SD = 0.92$) did not report significantly different endorsements of traditional gender role ideology compared to participants in the incremental condition ($M = 2.29, SD = 0.84$), $t_{246} = -0.22, p = .83$, Cohen’s $d = 0.03$, 95% CI = [-0.22, 0.28].

**Essentialist beliefs.** Participants in the entity condition ($M = 2.96, SD = 1.27$) did not report significantly different essentialist beliefs compared to participants in the incremental condition ($M = 2.95, SD = 1.26$), $t_{246} = 0.05, p = .96$, Cohen’s $d = 0.01$, 95% CI = [-0.24, 0.26].

**Attitudes toward transgender people.** Participants in the entity condition ($M = 4.88, SD = 1.16$) did not report significantly different attitudes toward transgender people compared to
participants in the incremental condition \((M = 5.03, SD = 1.00), t_{220} = -1.03, p = .30, \text{Cohen’s } d = 0.14, 95\% \text{ CI} = [-0.13, 0.40] \).

**Desired closeness with transgender people.** Participants in the intervention condition \((M = 4.34, SD = 1.36)\) did not report significantly different desired closeness with transgender people compared to participants in the control condition \((M = 4.31, SD = 1.61), t_{243} = 0.14, p = .89, \text{Cohen’s } d = 0.02, 95\% \text{ CI} = [-0.23, 0.27] \).

**Policy advocacy.** Participants in the intervention condition \((M = 5.61, SD = 1.55)\) did not report significantly different advocacy for pro-transgender policies compared to participants in the control condition \((M = 5.41, SD = 1.58), t_{244} = 0.99, p = .32, \text{Cohen’s } d = 0.13, 95\% \text{ CI} = [-0.12, 0.38] \).

**Cissexism.** Participants in the intervention condition \((M = 1.75, SD = 0.79)\) did not report significantly different levels of cissexism compared to participants in the control condition \((M = 1.83, SD = 0.83), t_{244} = -0.80, p = .42, \text{Cohen’s } d = 0.10, 95\% \text{ CI} = [-0.15, 0.35] \).

**Discussion**

The same manipulation used by Kray, Howland, Russell & Jackman (2017) to influence traditional gender role attitudes failed to show the same effect in Study 4. Even though the manipulations in both studies were identical, participants assigned to read about the fluidity of gender roles reported less support for traditional gender roles than participants assigned to read about a rigid structure of gender. Further, even though the authors of the original manuscript did find an effect on a similar measure, the intervention failed to replicate in this sample.

Studies 1, 2, 3, and 4 each focused on providing participants with informational arguments about sex and gender as a way of changing attitudes. In all four studies, this approach was ineffective. Another route might be to make a more personalized appeal to participants as a means of changing attitudes. Whereas the prior strategies were detached and didactic in nature,
an emotionally charged appeal may be more effective. Case & Stewart (2013) were able to use an emotional intervention where participants read a letter from a trans-person identifying his struggles. In Study 5, this same type of intervention strategy was used.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Incremental Condition</th>
<th>Entity Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 131</td>
<td>N = 118</td>
<td></td>
</tr>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>2.29 (0.84)</td>
<td>2.26 (0.92)</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>2.95 (1.26)</td>
<td>2.96 (1.27)</td>
</tr>
<tr>
<td>3. Attitudes…Transgender People</td>
<td>5.03 (1.00)</td>
<td>4.88 (1.16)</td>
</tr>
<tr>
<td>4. Desired Closeness</td>
<td>4.31 (1.61)</td>
<td>4.34 (1.36)</td>
</tr>
<tr>
<td>5. Attitudes toward Policies</td>
<td>5.41 (1.58)</td>
<td>5.61 (1.55)</td>
</tr>
<tr>
<td>6. Cissexism</td>
<td>1.83 (0.83)</td>
<td>1.75 (0.79)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are presented in parenthesis under each mean.
Table 5-2. Correlations among Measured Variables in Study 4

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>-</td>
<td>(0.53-0.69)</td>
<td>(-0.62, -0.42)</td>
<td>(-0.59, -0.40)</td>
<td>(-0.72, -0.57)</td>
<td>(0.64-0.77)</td>
</tr>
<tr>
<td>2. Essentialist Beliefs</td>
<td>0.62</td>
<td>-</td>
<td>(-0.56, -0.36)</td>
<td>(-0.52, -0.31)</td>
<td>(-0.64, -0.46)</td>
<td>(0.51, 0.67)</td>
</tr>
<tr>
<td>3. Attitudes…Transgender People</td>
<td>-0.53</td>
<td>-0.47</td>
<td>-</td>
<td>(0.51, 0.68)</td>
<td>(0.61, 0.75)</td>
<td>(-0.79, -0.67)</td>
</tr>
<tr>
<td>4. Desired Closeness</td>
<td>-0.50</td>
<td>-0.42</td>
<td>0.60</td>
<td>-</td>
<td>(0.54, 0.69)</td>
<td>(-0.72, -0.57)</td>
</tr>
<tr>
<td>5. Attitudes toward Policies</td>
<td>-0.65</td>
<td>-0.55</td>
<td>0.68</td>
<td>0.62</td>
<td>-</td>
<td>(-0.90, -0.84)</td>
</tr>
<tr>
<td>6. Cissexism</td>
<td>0.71</td>
<td>0.60</td>
<td>-0.74</td>
<td>-0.65</td>
<td>-0.87</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. 95% confidence intervals for each correlation are presented in the corresponding diagonal. All correlations are significant, p < .05.
CHAPTER 6
STUDY 5

Method

Participants

Participants volunteered at the Project Implicit website (https://implicit.harvard.edu; Nosek, 2005), a non-profit organization and international virtual laboratory for researchers who are focused on implicit social cognition. One-hundred and ninety-nine U.S citizens completed all materials (64.5% women, 59.2% White). This number was selected after conducting an analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) that indicated a sample of 200 participants would provide 90% power to detect a small effect between-subjects effect (Cohen’s d = .03; Faul, Erdfelder, Lang, & Buchner, 2007; Cohen, 1988). All participants consented to take part in this research and the appropriate institutional review board approved the research.

Materials

Gender role manipulation

Participants were randomly assigned to read one of two letters written to a person’s parents. In the experimental condition, participants read an excerpt from the book True Selves: Understanding Transsexualism—For Families, Friends, Coworkers, and Helping Professionals (Brown, 1996). The letter they read was an actual coming out letter written from a transgender woman to his parents. In the control condition, participants read an adjusted version of the letter where the author explains to his parents that he no longer wants to go to law school. See Appendix K for full-text.

Outcome variables

Traditional gender role ideology. Traditional gender role ideology was measured using the same procedure as in Study 2 (α = .81).
Attitudes toward transgender people. Attitudes toward transgender people were measured exactly as in Study 1 ($\alpha = .91$).

Desired closeness. Desired closeness was measured exactly as in Study 3 ($\alpha = .74$).

Self-Reported Attitudes toward Policies Affecting Transgender People. Self-Reported Attitudes toward Policies Affecting Transgender People were measured exactly as in Study 3 ($\alpha = .90$).

Cissexism. Cissexism was measured exactly as in Study 3 ($\alpha = .96$).

Procedure

The procedure was identical to the procedure in Study 4.

Results

Separate independent samples t-tests were used to examine whether there was an effect of condition assignment on any of the dependent measures in this study. See Table 6-1 for overall descriptive statistics by student condition. See Table 6-2 for a list of correlations among study variables.

Traditional gender role ideology. Participants in the entity condition ($M = 2.20$, $SD = 0.74$) did not report significantly different endorsement of traditional gender role ideology compared to participants in the incremental condition ($M = 2.24$, $SD = 0.80$), $t_{193} = -0.35$, $p = .73$, Cohen’s $d = 0.05$, 95% CI = [-0.23, 0.33].

Attitudes toward transgender people. Participants in the entity condition ($M = 5.14$, $SD = 1.08$) did not report significantly different attitudes toward transgender people compared to participants in the incremental condition ($M = 5.21$, $SD = 0.89$), $t_{178} = -0.51$, $p = .61$, Cohen’s $d = 0.08$, 95% CI = [-0.22, 0.37].

Desired closeness with transgender people. Participants in the intervention condition ($M = 4.40$, $SD = 1.38$) did not report significantly different desired closeness with transgender
people compared to participants in the control condition ($M = 4.55$, $SD = 1.29$), $t_{191} = -0.80$, $p = .42$, Cohen’s $d = 0.12$, 95% CI = [-0.17, 0.40].

**Policy advocacy.** Participants in the intervention condition ($M = 5.85$, $SD = 1.46$) did not report significantly different advocacy for pro-transgender policies compared to participants in the control condition ($M = 5.68$, $SD = 1.49$), $t_{192} = 0.94$, $p = .40$, Cohen’s $d = 0.12$, 95% CI = [-0.16, 0.40].

**Cissexism.** Participants in the intervention condition ($M = 1.57$, $SD = 0.67$) did not report significantly different levels of cissexism compared to participants in the control condition ($M = 1.69$, $SD = 0.74$), $t_{190} = -1.10$, $p = .27$, Cohen’s $d = 0.16$, 95% CI = [-0.13, 0.44].

**Discussion**

Again, the results of Study 5 suggest that having participants read an emotional appeal designed to improve their attitudes toward transgender people did not influence their traditional gender role ideology, attitudes toward transgender people, or any of the other measures. As in the prior four studies, the lack of a direct effect of the intervention also precludes testing the hypothesized mediation of the effect of the intervention on transphobia by traditional gender role ideology.

All the prior studies had focused on providing some kind of information to participants to challenge their ideas. However, it might be possible that providing information to participants is not the best route to induce attitude change and that asking participants to engage in an activity may be more effective. Study 6 attempted to use imagined contact paradigm (see Milles & Crisp, 2014) to see if imagining a positive interaction with a transgender person might influence my outcome measures.
Table 6-1. Means and (Standard Deviations) for Measured Variables by Condition in Study 5

<table>
<thead>
<tr>
<th>Measure</th>
<th>Emotional Condition</th>
<th>Control Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 104</td>
<td>N = 94</td>
</tr>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>2.25</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td>(0.80)</td>
<td>(0.75)</td>
</tr>
<tr>
<td>3. Attitudes…Transgender People</td>
<td>5.20</td>
<td>5.14</td>
</tr>
<tr>
<td></td>
<td>(0.89)</td>
<td>(1.08)</td>
</tr>
<tr>
<td>4. Desired Closeness</td>
<td>4.56</td>
<td>4.40</td>
</tr>
<tr>
<td></td>
<td>(1.30)</td>
<td>(1.38)</td>
</tr>
<tr>
<td>5. Attitudes toward Policies</td>
<td>5.66</td>
<td>5.85</td>
</tr>
<tr>
<td></td>
<td>(1.49)</td>
<td>(1.46)</td>
</tr>
<tr>
<td>6. Cissexism</td>
<td>1.69</td>
<td>1.57</td>
</tr>
<tr>
<td></td>
<td>(0.74)</td>
<td>(0.67)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are presented in parenthesis under each mean.
Table 6-2. Correlations among Measured Variables in Study 5

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2 (95% CI)</th>
<th>3 (95% CI)</th>
<th>4 (95% CI)</th>
<th>5 (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>-</td>
<td>(-0.55, -0.31)</td>
<td>(-0.56, -0.34)</td>
<td>(-0.72, -0.55)</td>
<td>(0.57, 0.73)</td>
</tr>
<tr>
<td>3. Attitudes...Transgender People</td>
<td>-0.44</td>
<td>-</td>
<td>(0.46, 0.66)</td>
<td>(0.47, 0.67)</td>
<td>(-0.70, -0.52)</td>
</tr>
<tr>
<td>4. Desired Closeness</td>
<td>-0.46</td>
<td>0.57</td>
<td>-</td>
<td>(0.53, 0.71)</td>
<td>(-0.69, -0.51)</td>
</tr>
<tr>
<td>5. Attitudes toward Policies</td>
<td>-0.64</td>
<td>0.58</td>
<td>0.63</td>
<td>-</td>
<td>(-0.91, -0.85)</td>
</tr>
<tr>
<td>6. Cissexism</td>
<td>0.66</td>
<td>-0.62</td>
<td>-0.61</td>
<td>-0.88</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. 95% confidence intervals for each correlation are presented in the corresponding diagonal. All correlations are significant, p < .05.
CHAPTER 7  
STUDY 6  

Method  

Participants  

Participants volunteered at the Project Implicit website (https://implicit.harvard.edu; Nosek, 2005), a non-profit organization and international virtual laboratory for researchers who are focused on implicit social cognition. One-hundred and ninety-seven U.S. citizens completed all materials (64.5% women, 59.2% White). This number was selected after conducting an analysis with G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) that indicated a sample of 200 participants would provide 90% power to detect a small between-subjects effect (Cohen’s d = .03; Faul, Erdfelder, Lang, & Buchner, 2007; Cohen, 1988). All participants consented to take part in this research and the appropriate institutional review board approved the research. Ten participants failed to complete a manipulation check and were excluded from analysis.  

Materials  

Traditional Gender Role Ideology Manipulation. Participants were randomly assigned to imagine either (a) walking through nature (i.e., the control condition), or (b) imagining a positive social interaction with a transgender person (i.e., the experimental condition). In both conditions, the manipulation was timed and lasted one minute. Full text of instructions to participants is in Appendix L.  

Outcome Variables  

Traditional gender role ideology. Traditional gender role ideologies were measured exactly as in Study 2 (α = .74).  

Cissexism. Transphobia was measured exactly as in Study 3 (α = .96).
**Attitudes toward transgender people.** Attitudes toward transgender people were measured exactly as in Study 3 ($\alpha = .91$).

**Desired closeness with transgender people.** Desired closeness with transgender people was measured exactly as in Study 3 ($\alpha = .80$).

**Policy advocacy.** Policy advocacy was measured exactly as in Study 3 ($\alpha = .88$).

### Results

A separate independent samples t-tests was used to examine whether there was an effect of condition assignment on any of the dependent measures in this study. See Table 7-1 for overall descriptive statistics by student condition. See Table 7-2 for a list of correlations among study variables.

**Traditional gender role ideology.** Participants in the imagined contact condition ($M = 2.15, SD = 0.75$) did report significantly lower endorsement of traditional gender role ideology compared to participants in the control condition ($M = 2.39, SD = 0.83$), $t_{183} = 2.08, p = .04$, Cohen’s $d = 0.30$, 95% CI= [0.02, 0.60].

**Attitudes toward transgender people.** Participants in the imagined contact condition ($M = 5.16, SD = 0.99$) did not report significantly different attitudes toward transgender people compared to participants in the control condition ($M = 5.17, SD = 0.98$), $t_{173} = 0.10, p = .92$, Cohen’s $d = 0.02$, 95% CI = [-0.28, 0.31].

**Desired closeness with transgender people.** Participants in the imagined contact condition ($M = 4.51, SD = 1.39$) did not report significantly different desired closeness with

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1 Due to the relevant difference between the experimental and control conditions, I conducted a replication ($N = 197$). In the replication, there was no difference between the experimental condition ($M = 2.19, SD = 0.78$) and the control condition ($M = 2.39, SD = 0.83$), $t(192)= 1.79, p = .08$, Cohen’s $d = 0.13$, 95% CI = [-0.01, 0.27].
transgender people compared to participants in the control condition \((M = 4.67, SD = 1.58), t_{183} = -0.73, p = .46, \text{Cohen’s } d = 0.11, 95\% \text{ CI } = [-0.18, 0.40].\)

**Policy advocacy.** Participants in the imagined contact condition \((M = 5.85, SD = 1.37)\) did not report significantly different advocacy for pro-transgender policies compared to participants in the control condition \((M = 5.75, SD = 1.49), t_{184} = 0.46, p = .65, \text{Cohen’s } d = 0.04, 95\% \text{ CI } = [-0.25, 0.32].\)

**Cissexism.** Participants in the imagined contact condition \((M = 1.61, SD = 0.80)\) did not report significantly different levels of transphobia compared to participants in the control condition \((M = 1.59, SD = 0.68), b = -0.02, t_{184} = -0.25, p = .80, \text{Cohen’s } d = 0.07, 95\% \text{ CI } = [-0.22, 0.36].\)

**Discussion**

As in the prior five studies, my imagined contact paradigm failed to produce an effect on outcome measures. While congruent with my previous attempts at establishing an effective intervention, other researchers have been able to shift attitudes toward marginalized people using similar paradigms (Stathi & Crisp, 2008; Turner & Crisp, 2010; West, Hotchin & Wood. 2017). However, despite using intervention materials similar to West, Hotchin & Wood (2017), I failed to find a similar effect.
Table 7-1. Means and (Standard Deviations) for Measured Variables by Condition in Study 6

<table>
<thead>
<tr>
<th>Measure</th>
<th>Imagined Contact Condition</th>
<th>Control Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$N = 89$</td>
<td>$N = 98$</td>
</tr>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>2.15</td>
<td>2.39</td>
</tr>
<tr>
<td></td>
<td>(0.75)*</td>
<td>(0.83)*</td>
</tr>
<tr>
<td>2. Attitudes…Transgender People</td>
<td>5.16</td>
<td>5.17</td>
</tr>
<tr>
<td></td>
<td>(0.99)</td>
<td>(0.98)</td>
</tr>
<tr>
<td>3. Desired Closeness</td>
<td>4.67</td>
<td>4.51</td>
</tr>
<tr>
<td></td>
<td>(1.58)</td>
<td>(1.39)</td>
</tr>
<tr>
<td>4. Attitudes toward Policies</td>
<td>5.75</td>
<td>5.85</td>
</tr>
<tr>
<td></td>
<td>(1.49)</td>
<td>(1.37)</td>
</tr>
<tr>
<td>5. Cissexism</td>
<td>1.61</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
<td>(0.80)</td>
<td>(0.68)</td>
</tr>
</tbody>
</table>

Note. Standard deviations are presented in parenthesis under each mean. *p<.05.
Table 7-2. Correlations among Measured Variables in Study 6

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Traditional Gender Role Ideology</td>
<td>-</td>
<td>(-0.59, -0.36)</td>
<td>(-0.49, -0.23)</td>
<td>(-0.54, -0.30)</td>
<td>(0.40, 0.61)</td>
</tr>
<tr>
<td>2. Attitudes…Transgender People</td>
<td>-0.48</td>
<td>-</td>
<td>(0.48, 0.67)</td>
<td>(0.49, 0.68)</td>
<td>(-0.76, -0.60)</td>
</tr>
<tr>
<td>3. Desired Closeness</td>
<td>-0.37</td>
<td>0.58</td>
<td>-</td>
<td>(0.42, 0.63)</td>
<td>(-0.70, -0.52)</td>
</tr>
<tr>
<td>4. Attitudes toward Policies</td>
<td>-0.43</td>
<td>0.59</td>
<td>0.53</td>
<td>-</td>
<td>(-0.89, -0.81)</td>
</tr>
<tr>
<td>5. Cissexism</td>
<td>0.51</td>
<td>-0.69</td>
<td>-0.62</td>
<td>-0.85</td>
<td>-</td>
</tr>
</tbody>
</table>

Note. 95% confidence intervals for each correlation are presented in the corresponding diagonal. All correlations are significant, \( p < .05 \).
CHAPTER 8
DISCUSSION AND CONCLUSIONS

Discussion

The overarching goal of this project was to develop an intervention for reducing transphobia that could be easily administered to large groups of people in an efficient manner. Each of the six interventions targeted traditional gender role attitudes following the Hill and Willoughby (2005) model, wherein belief in the validity and essential nature of traditional gender roles stigmatize transgender identities. In accordance with this model, the extent to which a person believes that men and women are immutable identity categories would also explain a person’s response to those who do not identify within – or who transition between – categories. Consequently, changing a person’s perceptions of gender to be less rigid should also result in a person being more accepting of transgender people. Despite the intention to develop an intervention founded on this model, the present research does not support the intervention approach that was hypothesized to influence these attitudes.

Six studies (total $N = 1,527$) tested whether a range of intervention strategies would be effective at shifting participants traditional gender role attitudes and gender essentialist beliefs. Each intervention fell into one of two general approaches. The first four studies attempted to change traditional gender role attitudes by providing information about the biological and historical underpinnings of gender identity. As these studies did not produce the hypothesized effect, the final two studies shifted to an emotional appeal strategy where people considered the individual experience of a single person: a specific trans man in Study 5 and an imagined trans person in Study 6. Both educational and emotional appeals were unable to robustly demonstrate shifts in people’s gender role attitudes.
Insights into effectiveness. Despite the pattern of null findings, these results are informative. Each study was preceded by an a priori power analysis and was adequately powered for the desired effects. Thus, it is unlikely that the lack of change in people’s traditional gender role attitudes was due to insufficient power. Further, it is also unlikely that the intervention’s observed ineffectiveness is due to chance as the consistency of the results bolsters confidence. Having confidence in each study also makes for meaningful inferences into why each study found what it did and how future studies could be improved.

Despite differences between the approach in each study, substantial overlap exists that might explain the consistency of the findings. For example, each of the intervention strategies works in a computerized format and within a brief modality. Even the longest intervention (the video shown in Study 3) was only eighteen minutes long. It may be that each of the interventions were too fleeting or informal and that these types of approaches are not optimally suited to produce meaningful change in traditional gender role attitudes.

Lai et al. (2014) tested a collection of similarly structured computerized interventions to compare their effectiveness at reducing bias. Across seventeen interventions targeting implicit and explicit bias, none of the interventions were able to change people’s attitudes for more than 24 hours. Comparably, each of the studies here was aimed at producing enduring change in how participants saw transgender people.

While Lai and colleagues targeted racial attitudes, both their work and the present research measured deeply ingrained prejudices that people were willing to self-report. For example, participants who reported being more transphobic agreed with items such as, for example, being asked if they would end a friendship solely because they found out the friend was transgender. It may be the case that the intervention strategies implemented here are ill-
suited for changing these types of overtly negative attitudes and would have been effective at changing less overtly transphobic attitudes.

Personal involvement in attitude change is another potential factor highlighted by Lai and colleagues (2014). Of the interventions they tested, the most effective strategies asked participants to imagine themselves in vividly counter-stereotypical scenarios. Study 6 asked people to imagine having a pleasant interaction with a transgender person, but not an explicitly counter-stereotypical interaction. Moreover, none of the studies included a measure of attitudes toward transgender people or traditional gender roles prior to an intervention. Key, Hotchin, and Wood (2017) found that people who began the study with more negative attitudes toward transgender people were more responsive to the intervention when compared to participants who began the study with more positive attitudes. Thus, it is possible that the interventions under the current study might have been more effective if conducted using samples with greater existing negativity.

One obstacle to developing interventions using counter-stereotypical information is the difficulty in knowing the actual stereotype content that people may hold for transgender people. Estimates suggest that half of one percent of U.S. adults identify as transgender (Gates, 2011) and only about 22% of people report personally knowing or working with a transgender person (Halloran, 2015). Therefore, both the actual prevalence of and reported contact with transgender people is quite low. These statistics are particularly problematic for the imagined contact condition in Study 6. It is possible, even probable, that people in that study may have imagined contact with a transgender person despite never having met or interacted with a transgender person.
A high-profile study conducted by Broockman and Kalla (2016) demonstrated that it is possible to develop an intervention strategy that durably improves attitudes toward transgender people and support for policies affecting them. In their approach, people spoke with canvassers about the experiences of transgender people and legal efforts to protect transgender people from discrimination for approximately ten minutes. Observed changes in attitudes persisted for 3 months following this intervention. The success of this approach also illuminates another factor that could explain the present findings. Rather than attempting to change participants’ traditional gender role attitudes, their intervention approach directly targeted attitudes toward transgender people.

Broockman and Kalla’s (2016) intervention strategy also involved directly contacting participants in their homes. Despite the brevity of the intervention, Lai et al (2014) suggested that personal involvement was an important aspect of effective intervention strategy. Meeting people in their homes is a highly personalized approach that departs heavily from the computerized approach implemented in the current research. However, broadly administering a person-to-person intervention strategy would be costly and time-consuming – hence the aim of the present research to develop an intervention that could be easily administered to large audiences. However, the findings of Broockman and Kalla’s (2016) work, as well as the successful techniques reported by Lai and colleagues (2014), help explain how an emphasis on personal connection between the participant and transgender people might improve the effectiveness of the present research.

Commentary on failed replication attempts. Importantly, Studies 4, 5, and 6 were also conceptual replications of published studies that were able to change people’s gender role attitudes. The replications were adequately powered and the samples in Studies 5 and 6 exceeded
the sample size of the original study. However, none of the replications found the same effect, despite using the same materials as the original studies. While the difference is striking, a failure to find the same effect does not necessarily suggest that the original studies were flawed or that their results were overstated. Rather, each of these studies represents a new data point in an overall narrative on the relationship between transphobia and traditional gender role attitudes. Failure to find the same effect in a different sample represents an opportunity to explore boundary conditions that may moderate the effectiveness of a manipulation.

**Future directions.** Although the evaluated interventions did not demonstrate the hypothesized effect, there may still be an important connection between gender role ideology and attitudes toward transgender people. Changing traditional gender role attitudes may still be a potential path toward reducing transphobia. Based on the results of these studies, there are several issues that need to be considered before continuing this research. First, randomly assigning between conditions may have been an insufficient way of accounting for baseline attitudes toward transgender people. In future studies, a pre-post design, where participants are asked to report their feeling toward transgender people both before and after the intervention, could substantially benefit this research. It may be the case that the effectiveness of these types of interventions depends on the baseline attitudes a person has toward transgender people or whether they have had existing contact with a transgender person.

Future interventions should also encourage active engagement with the content of the intervention. The instructions in Study 6 were intentionally left vague, but a revision of the study could add more scaffolding to the experience by adding emotional details. A revised scenario about a positive experience with a transgender person explaining how their gender identity had caused their parents to stop talking to them or a description from a transgender person that has
lost their job due to lacking protections for transgender people may be one way of adding more engaging details to the intervention. The addition of such details moves the prompt from being simply a positive interaction to a specific interaction relating to transphobic prejudice and discrimination.

**Limitations.** The biggest limitation of the present research is the lack of pretest measures to examine potential moderators. It may be that some participant-level variables influenced the effect of the interventions so that some participants might have been more responsive than others. For example, having had past contact with a transgender person or being motivated to care about issues affecting transgender people may have given some participants a greater desire to change their attitudes. With the present data, it is not possible to determine whether any of these interventions would have been more effective depending on pre-test performance.

Five of the six studies were collected from the Project Implicit research pool. Participants in the Project Implicit organization are volunteers who participate in research studies in exchange for feedback on their biases. They are not paid for their time or given course credit like a student in an undergraduate research pool. It is possible that these volunteer participants may differ in other ways as well. For example, these people are already self-selecting to participate in research and visit the website because they have some interest in their personal biases. In general, participants in these studies showed low overall levels of transphobia and skewed to the liberal end of our measure of political orientation. Research has identified political identification as a correlate of anti-transgender prejudice so that more liberal people tend to be less transphobic. Even though Study 3 was conducted in a laboratory at the University of Florida, people in that study also reported similarly low levels of transphobia. People in these studies may be too low in existing bias to be influenced by these interventions.
Conclusion

Belief in traditional gender roles devalues identities that exist outside of a male/female dichotomy. As a consequence, transgender people are disproportionately at risk for a plethora of negative life outcomes, making change of attitudes toward transgender people a crucial step in improving their lives. The six studies in this research program attempted to test intervention strategies aimed at changing participants’ understanding of gender as a means of improving attitudes toward transgender people. None of the measured interventions were able to change people’s traditional gender role advocacy, gender essentialism, attitudes toward transgender people, transphobia, or support for policies affecting transgender people. However, the lack of effectiveness of these interventions to change attitudes does contribute to greater understanding of boundary conditions that could make subsequent intervention strategies more successful.
APPENDIX A
STUDY 1 MANIPULATION

Biological Argument Condition

Although the idea that one's sex is a "biological reality" is a popular idea, many researchers believe it is based on a misunderstanding of biology and anatomy. In reality the distinction between males and females is not so cut and dry. Those who claim that sex is determined by chromosomes do not realize that sex is assigned at birth not by chromosomes, but by external genitals. In fact, the vast majority of us never learn what our sex chromosomes are. So sex isn't something we're actually born with, it's something that doctors or our parents assign us at birth.

When genetics are taken into consideration, the boundary between the sexes becomes even more blurred. New technologies in DNA sequencing and cell biology show that almost everyone is a patchwork of genetically distinct cells, some with a sex that might not match that of the rest of their body. "I think there's much greater diversity within male or female, and there is certainly an area of overlap where some people can't easily define themselves within the binary structure," says John Achermann, who studies sex development and endocrinology at University College London's Institute of Child Health.

"The main problem with a strong dichotomy is that there are intermediate cases that push the limits and ask us to figure out exactly where the dividing line is between males and females," says Arthur Arnold at the University of California, Los Angeles, who studies biological sex differences. "And that's often a very difficult problem, because sex can be defined a number of ways."

Social Argument Condition

A recent, large-scale study examined evidence that there are strong gender differences in social domains. These researchers looked at diverse attributes, including sexual attitudes and behavior, desired mate characteristics, interest in and ease of learning science, and intimacy, empathy, social support and caregiving in relationships. Across the analyses spanning 122 attributes from more than 13,000 individuals, one conclusion stood out: instead of dividing into two groups, men and women overlapped considerably on attributes like the frequency of science-related activities, interest in casual sex, or the allure of a potential mate's virginity. Even stereotypical traits, like assertiveness or valuing close friendships, fell along a continuum. In other words, they found little or no evidence of categorical distinctions based on sex.

Gender expression is the ways we present ourselves, and what those things stand for. The interpretations of gender expression vary from culture to culture, because what gender means in our culture means something completely different in another. We often think of gender expression as being on a scale from masculine to feminine, but really it's two scales, and a measurement on each of them. While it might seem natural for some things to be "masculine"
and others to be "feminine," gender expression has changed considerably over time. For example, in the United States, it used to be normal for infant boys to be dressed in pink and infant girls to be dressed in blue. It was also normal for young boys and girls to wear skirts. Even a young Franklin Delano Roosevelt was photographed wearing a dress. Similarly, cheerleading used to be an activity restricted only to men and did not become female-dominated until the 1960's; on the career front, secretaries used to be mostly men and computer programming was at one point considered to be "women's work."

Social-Biological Argument Condition

When discussing gender in the United States, it is important to understand that sex and gender are two different things. Sex is determined by a person’s biology. Gender refers to how a person sees themselves. Male and female refer to a person’s sex while man and woman refer to a person’s gender. They are not the same thing. How we think about gender (how men and women should behave), is mostly a social idea and not a biological one. In fact, many of the ideas of how men and women should behave and act have changed over time.

- In the United States, it used to be normal for infant boys to be dressed in pink and infant girls to be dressed in blue. It was not until the 1940’s that pink and blue became associated with girls and boys respectively.
- It was normal for young boys and girls to wear skirts. Even a young Franklin Delano Roosevelt was photographed wearing a dress.
- Cheerleading used to be an activity restricted only to men and did not become female-dominated until the 1960’s.
- On the career front, secretaries used to be mostly men and computer programming was at one point considered to be women’s work.

The differences between the brains of men and women are also frequently overstated. Scientists have analyzed thousands of brains from different men and women and have shown that no person has a perfectly “male” or “female” brain.

- New technologies in DNA sequencing and cell biology show that almost everyone is a patchwork of genetically distinct cells, some with a sex that might not match that of the rest of their body.
- Those who claim that sex is determined by chromosomes do not realize that sex is assigned at birth, not by chromosomes, but by external genitals. In fact, the vast majority of us never learn what our sex chromosomes are. So, sex isn’t something we’re actually born with, it’s something that doctors or our parents assign us at birth.
- Even though biology can affect the way the brain develops, many other factors influence how a person’s brain develops.
- Because every brain is unique, there are as many ways to be a man or woman as there are people in the world.
Essentialism Condition

When discussing gender in the United States, it is important to understand that sex and gender are two different things. Sex is determined by a person’s biology. Gender refers to how a person sees themselves. Some differences between men and women emerge very early in life. In some cases, boys and girls show differences before their first birthday. These differences suggest that there are inherent biological influences on gender identity.

- Even before 1 year of age, boys and girls prefer to play with different kinds of toys. Boys tend to prefer balls and trucks while girls prefer dolls and stuffed animals.
- Even infants as young as three months show preference for gender-consistent toys.
- Even non-human primates show the same pattern of toy preferences with boy monkeys preferring balls and trucks and girl monkeys preferring to play with dolls.
- Children as young as three years old prefer to play with other children of the same gender. This shows that children naturally feel that they fit better in the company of one gender than another.

Control Condition

Chess is a game with a long and storied history. Different versions of chess have emerged over time as the game has traveled between cultures.

- Precursors to chess originated in India during the Gupta Empire.
- Chess was introduced to Persia from India and became a part of the princely or courtly education of Persian nobility.
- In Sassanid Persia players started calling "Shah!" (Persian for "King!") when attacking the opponent’s king, and "Shah Mat!" (Persian for "the king is helpless") when the king was attacked and could not escape from attack.

Buddhist pilgrims, Silk Road traders and others carried it to the Far East where it was transformed and assimilated into a game often played on the intersection of the lines of the board rather than within the squares. Arabian empire. Muslims carried chess to North Africa, Sicily, and Iberia by the 10th century.

The game was developed extensively in Europe. By the late 15th century, it had survived a series of prohibitions and Christian Church sanctions to almost take the shape of the modern game.
APPENDIX B
GENDER ROLE BELIEFS SCALE: SHORT FORM (USED IN STUDY 1)

1. It is disrespectful to swear in the presence of a lady.
2. The initiative in courtship should usually come from the man.
3. Women should have as much sexual freedom as men.
4. Women with children should not work outside the home if they don’t have to, financially.
5. The husband should be regarded as the legal representative of the family group in all matters of law.
6. Except perhaps in very special circumstances, a man should never allow a woman to pay for the taxi, buy the tickets, or pay the check.
7. Men should continue to show courtesies to women such as holding open the door or helping them on with their coats.
8. It is ridiculous for a woman to run a train and a man to sew clothes.
9. Women should be concerned with their duties of childbearing and house-tending, rather than with the desires for professional and business careers.
10. Swearing and obscenity is more repulsive in the speech of a woman than a man.
APPENDIX C
ESSENTIALIST BELIEFS SCALE (USED IN STUDY 1)

Biological Basis Subscale

1. The kind of person someone is can be largely attributed to their genetic inheritance.
2. Very few traits that people exhibit can be traced back to their biology (reversed).
3. I think that genetic predispositions have little influence on the kind of person someone is (reversed).
4. Whether someone is one kind of person or another is determined by their biological make-up.
5. There are different types of people, and with enough scientific knowledge, these different “types” can be traced back to genetic causes.
6. A person’s attributes are something that can’t be attributed to their biology” (reversed).
7. With enough scientific knowledge, the basic qualities that a person has could be traced back to, and explained by, their biological make-up.
8. A person’s traits are never determined by their genes (reversed).

Discreteness

1. The kind of person someone is, is Herarly defined; they either are a certain kind of person or they are not.
2. People can behave in ways that seem ambiguous, but the central aspects of their character are clear-cut.
3. A person’s basic qualities exist in varying degrees, and are never easily categorized (reversed).
4. Everyone is either a certain type of person or they are not.
5. A person’s basic character is never easily defined (reversed).
6. A person either has a certain attribute or they do not.
7. No matter what qualities a person has, those qualities are always identified and difficult to define (reversed).
8. People can have many attributes and are never completely defined by a particular one (reversed).

Informativeness

1. When getting to know a person, it is possible to get a picture of the kind of person they are very quickly.
2. It is possible to know about many aspects of a person once you become familiar with a few of their basic traits.
3. A person’s behavior in a select number of contexts can never tell you a lot about the kind of person they are (reversed).
4. Although a person may have some basic identifiable traits, it is never easy to make accurate judgments about how they will behave in different situations (reversed).
5. Generally speaking, once you know someone in one or two contexts it is possible to predict how they will behave in most other contexts.
6. It is never possible to judge how someone will react in new social situations (reversed).
7. There are different “types” of people and it is possible to know what “type” of person someone is relatively quickly.
Biological Argument Condition

Although the idea that one's sex is a "biological reality" is a popular idea, many researchers believe it is based on a misunderstanding of biology and anatomy, and in reality, the distinction between males and females is not so cut and dry. Those who claim that sex is determined by chromosomes do not realize that sex is assigned at birth, not by chromosomes, but by external genitals. In fact, the vast majority of us never learn what our sex chromosomes are. So, sex isn't something we're actually born with; it's something that doctors or our parents assign us at birth.

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"The main problem with a strong dichotomy is that there are intermediate cases that push the limits and ask us to figure out exactly where the dividing line is between males and females," says Arthur Arnold at the University of California, Los Angeles, who studies biological sex differences. "And that's often a very difficult problem, because sex can be defined a number of ways."
APPENDIX E
SOCIAL ROLES QUESTIONNAIRE (USED IN STUDIES 2, 3, 4, AND 6)

1. People can be both aggressive and nurturing regardless of sex. R
2. People should be treated the same regardless of their sex. R
3. The freedom that children are given should be determined by their age and maturity level and not by their sex. R
4. Tasks around the house should not be assigned by sex. R
5. We should stop thinking about whether people are male or female and focus on other characteristics. R
6. A father’s major responsibility is to provide financially for his children.
7. Men are more sexual than women.
8. Some types of work are just not appropriate for women.
9. Mothers should make most decisions about how children are brought up.
10. Mothers should work only if necessary.
11. Girls should be protected and watched over more than boys.
12. Only some types of work are appropriate for both men and women.
13. For many important jobs, it is better to choose men instead of women.
APPENDIX F

GENDER DETERMINISM SCALE (USED IN STUDY 2)

1. A person’s gender is something basic about them that determines how they will act.
2. Gender basically determines an individual’s behaviors.
3. There is not much people can do to really change how they will act because of their gender.
4. Gender basically determines an individual’s attributes.
APPENDIX G
GENDER ESSENTIALISM SCALE (USED IN STUDY 3)

1. Just knowing whether someone is male or female can tell you a lot about that person.
2. Under the surface, people are essentially very similar to others of their own gender.
3. Masculinity and femininity are mutually exclusive categories, and each person either belongs to one or the other.
4. Masculinity and femininity are concepts that have endured in basically the same form over time and across cultures.
5. Personality differences between men and women cannot be changed, because they are caused by biological factors such as genes and hormones.
APPENDIX H
TRANSPHOBIA SCALE (NAGOSHI ET AL., 2008; USED IN STUDY 3)

1. I don’t like it when someone is flirting with me, and I can’t tell if they are a man or a woman.
2. I think there is something wrong with a person who says that they are neither a man nor a woman.
3. I would be upset, if someone I’d known a long time revealed to me that they used to be another gender.
4. I avoid people on the street whose gender is unclear to me.
5. When I meet someone, it is important for me to be able to identify them as a man or a woman.
6. I believe that the male/female dichotomy is natural.
7. I am uncomfortable around people who don’t conform to traditional gender roles, e.g., aggressive women or emotional men.
8. I believe that a person can never change their gender.
9. A person’s genitalia define what gender they are, e.g., a penis defines a person as being a man; a vagina defines a person as being a woman.
APPENDIX I
CISSEXISM SCALE (USED IN STUDIES 3, 4, AND 6)

1. I would look for a new place to live if I found out my roommate was transgender.
2. I do not really find the thought of transgenderism disgusting.
3. If I discovered a friend was transgender, I would end the friendship.
4. It does not matter to me whether my friends are transgender or cisgender.
5. The thought of a transgender person being romantically involved bothers me.
6. Transgender people contribute positively to society.
7. Transgender people have it as good as they should expect to.
8. Transgender people are getting too demanding in their push for equal rights.
9. Transgender people should stop complaining about the way they are treated in society, and simply get on with their lives.
10. I see the transgender movement as a positive thing.
11. Transgenderism should be against the law.
12. The thought of transgender people having the same rights as cisgender people bothers me.
13. I believe that transgender people should have the same rights as cisgender people.
14. Transgender people should have all the same parenting rights as cisgender people do (for example, adoption, fostering, and access to fertility services).
15. Transgender people should be legally permitted to marry, just as cisgender people are.
16. The idea of a transgender person getting married seems somewhat silly to me.
17. Transgender people are just plain sick.
18. Transgender people should undergo therapy to change their gender identity.
19. All gender identities are natural expressions of human activity.
20. No one gender identity is better than any other gender identity.
21. Transgenderism endangers the institution of the family.
22. Transgender people are a danger to our young people.
23. Transgender people are just as moral as cisgender people.
24. The growing number of transgender people indicates a decline in American morals.
25. Transgenderism poses a threat to many of our basic social institutions.
Societal Gender Roles Are Changeable

Social roles refer to the expectations, responsibilities, and behaviors we adopt in certain situations. Given the importance of social roles to everyday life, it is perhaps not surprising that a great deal of research has been conducted to identify the key determinants of the roles adopted by women and men within and across societies. While it used to be believed that sex-typed gender roles were a fixed feature of societies, experts in the field comparing various cultures across the globe now believe that how society divides labor between the sexes is a dynamic feature of societies that can change over time and across contexts.

In a recent paper (Smith & Wilson, 2011) summarized a wide range of longitudinal studies that address this question. It was determined that the vast majority of a society’s division of labor between the sexes is due to environmental factors that can change over time. For example, geopolitical conditions, educational opportunities, access to healthcare, and institutional policies were determined to account for up to 88% of a society’s division of labor between the sexes. About 10% of gender role divisions seem to be influenced by idiosyncratic preferences within families. This means that only about 2% of a society’s division of labor between the sexes can be traced to stable gender characteristics.

Consistent with this view is a presentation given in July, 2012 at the International Gender Research Forum (IGRF) in Washington D.C. by Dr. Terry Batter, a Harvard Business School professor specializing in gender role research in the workplace. In his talk, Dr. Batter argued that “no society’s gender role division is hard like a rock that cannot be changed. Only for some, greater effort and determination are needed to effect changes.” He reported numerous large longitudinal studies showing that societies can mature and change how women and men divide up labor in the home and the workplace. He also reported research findings showing that even the gender roles of mature societies can be changed with enough effort. For example, in a recent study of senior-level government officials from societies around the world who engaged in intensive diversity training, 95% of their respective societies increased their flexibility in social role assignments between women and men by a noticeable amount in the 2-year period following the training. The bottom line is that a voluminous body of evidence indicates that the manner in which societies divide labor between the sexes is changeable.

Entity Condition

Societal Gender Roles, Like Plaster, Are Pretty Stable Over Time

Social roles refer to the expectations, responsibilities, and behaviors we adopt in certain situations. Given the importance of social roles to everyday life, it is perhaps not surprising that a great deal of research has been conducted to identify the key determinants of the roles adopted by women and men within and across societies. While it used to be believed that how society divided labor between the sexes was a bundle of potentialities, each of which could be developed
and customized, experts in the field now believe that societies possess a finite set of rather fixed sex-typed social role divisions.

In a recent paper (Smith & Wilson, 2011) summarizing a wide range of longitudinal studies that address this question it was determined that the vast majority of a society’s division of labor between the sexes is due to personal factors that remain stable over time. For example, gender differences in intelligence, internal motivation, and preferences were shown to account for up to 88% of a society’s gender roles. About 10% of gender role divisions seem to be determined by patterns of interactions set early in life with one’s family. This means that the division of labor between the sexes may be increased or decreased by only about 2% per generation.

Consistent with this view is a presentation given in July, 2012 at the International Gender Research Forum (IGRF) in Washington D.C. by Dr. Terry Batter, a Harvard Business School professor specializing in gender role research in the workplace. In his talk, Dr. Batter argued that “in most societies, gender roles are set like plaster early in its founding and will never soften again.” He reported numerous large longitudinal studies which show that societies “gain experience and develop, but they do so on the foundation of enduring divisions of labor between the sexes.” For example, in a recent study of senior-level government officials from societies around the world who engaged in diversity training, 95% failed to modify social role assignments between women and men by a noticeable amount in the 2-year period following the training. The bottom line is that a voluminous body of evidence indicates that the manner in which societies assign roles to men and women is not changeable.
APPENDIX K
SCENARIOS USED IN STUDY 5

Experimental Condition

Dear Mom and Dad,

I have something very important to tell you about myself. You might not approve of it, but please try to keep an open mind as I try to explain this. Also, please understand that what I’m about to tell you is not your fault. So, whatever you do, please don’t blame yourselves. I know you’ve wondered why I never had a boyfriend. You might have noticed that all of my guy friends are more like my “buddies.” Well, I’m not a lesbian, but I am very much attracted to the ladies. You see, my body doesn’t match the way I think and feel. Mom and Dad, I feel that I am a man. My body might tell you the opposite, but I know I am male. It’s what comes naturally to me. I have felt this way for as long as I can remember. I know you thought I was just a tomboy, but it went much deeper than that.

At the age of four, I remember thinking that I was a boy. Then I learned that boys have a penis. So I waited for mine to grow. Obviously, it never did. So, every night I asked God to please change my body into a male body. It hasn’t happened yet.

Up until age twelve, things were just OK. I had some really good times with my buddies, but I was still very sad and lonely. Then in junior high and high school, things got a lot worse. There were so many things I wanted to do but couldn’t. There were girls that I really liked and cared about, but I had to keep my feelings locked up deep inside. I always had to pretend to be someone I wasn’t. I couldn’t just be myself. You have no idea how hard it was for me to try to act like a girl. It was extremely humiliating for me! To this day, it really tears me up inside! At one time, I came close to committing suicide, but I just couldn’t do it. I didn’t want to die. I just wanted out of this body!

Every day is a struggle for me because I know I have to play a role I’m not comfortable in. It stresses me out so much! I’m sick and tired of the whole charade! At work, I present a cheerful image. So they expect me to be all feminine and happy. They’re used to seeing me with a smile on my face all the time. If only they knew the pain and torture I’m going through!

Well, Mom and Dad, what I’m trying to say is that I am going to have a sex change. Now you don’t have to understand me, but please try to accept me. But I can’t be who you want me to be. I’ve got to do what I know is right for me—not what anyone else might think is right.

Mom and Dad, you’ve been so good to me. I just want to thank you for all you’ve done for me. I feel truly blessed to have parents like you. I love you. Please don’t ever forget that, no matter what.

With love,

Alice (soon to be known as Adam)
Dear Mom and Dad,

I have something very important to tell you about myself. You might not approve of it, but please try to keep an open mind as I try to explain this. Also, please understand that what I’m about to tell you is not your fault. So whatever you do, please don’t blame yourselves.

I know you’ve wondered why I never seemed excited about my career. You might have noticed that I never seemed excited when I walked for my undergraduate degree or when I was admitted into law school. You see, all those things were just things that I did to make you happy. Mom and Dad, I am very unhappy right now. I may be doing well in school, but it feels really empty to me. Just because you are good at something doesn’t mean it has to make you happy. I have felt this way for as long as I can remember. I’ve always been trying to make you happy and not taking enough care of myself.

At the age of four, I remember telling you both that I wanted to be a baker when I grew up. I remember the look you gave me before you said that I would grow out of it. Instead of supporting me or trying to help me, you pushed me to go to law school and not to do what I wanted to do. Eventually, I learned to stop asking and just go with the flow. Since moving away to start law school, I’ve had a lot of time to look back and reflect on everything. I don’t want to keep doing this for the rest of my life. I have to do things that are going to make me happy even if it upsets the people that are important to me. I’ve even had to seek out counseling services here at school to help cope with all this.

Every day is a struggle for me because I know I have to play a role I’m not comfortable in. It stresses me out so much! I’m sick and tired of the whole charade! At school, I present a cheerful image. So, they expect me to be all cheerful and happy. They’re used to seeing me with a smile on my face all the time. If only they knew how little I enjoy the things I have to get done every day in law school.

Well, Mom and Dad, what I’m trying to say is that I am going to drop out of law school. Now you don’t have to understand me, but please try to accept me. But I can’t be who you want me to be. I’ve got to do what I know is right for me—not what anyone else might think is right.

Mom and Dad, you’ve been so good to me. I just want to thank you for all you’ve done for me. I feel truly blessed to have parents like you. I love you. Please don’t ever forget that, no matter what.

With love,

Adam
APPENDIX L
SCENARIOS USED IN STUDY 6

**Imagined Contact Condition**

We would like you to take a minute to imagine taking part in a research study. Imagine that in this new study you are asked to engage in a conversation with a transgender person that you do not know. Imagine that the interaction is relaxed, positive, and comfortable. Imagine three specific things that you learn about the life and experiences of Transgender people from your conversation partner.

**Control Condition**

We would like you to take a minute to imagine you are walking in the outdoors. Imagine three specific things that you experience in the scene.


BIOGRAPHICAL SKETCH

Morgan’s major was psychology. She worked with Dr. Kate Ratliff and was affiliated with the Attitudes and Social Cognition Lab as well as the Attitudes and Political Cognition Lab at the University of Florida. She received her doctorate in the spring of 2018.