The Structure of Overcompensation: Beliefs and Behaviors Regarding Overcompensation of Anti-Gay Bias

by Jin Xun Goh

B.A. in Psychology, Bard College
M.A. in Psychology, Northeastern University

A dissertation submitted to

The Faculty of
the College of Science of
Northeastern University
In partial fulfillment of the requirements
for the degree of Doctor of Philosophy

July 18, 2017

Dissertation directed by

Judith A. Hall
University Distinguished Professor
Acknowledgements

This dissertation would not have been possible without the help of countless individuals. Judith Hall was instrumental to my maturation as a person and as a researcher. Her insights into everything, from the connotation of a single word in shaping a whole paragraph to broader theoretical concerns regarding a whole field, never cease to amaze me. I am extremely privileged and fortunate to have her as my mentor. Every day, Judy challenges and inspires me to be more critical, methodical, and theoretical. To her, I owe my every academic success and happiness in the past five years and in the future to come. Although I am sad to leave the lab, I rejoice in knowing that our friendship will last forever.

My parents sacrificed tremendously for my siblings and me to get the education that they were deprived of when growing up in poverty. My family’s unconditional support is ineffable. I am immensely proud to be a first-generation college student who went on to receive a doctorate. I know that this degree represents not only my own achievement but also my family’s dedication to my education and growth. I am eternally grateful for having them in my life.

In these five years, the strongest friendships were forged within my PhD cohort: Adam Brown, Amanda Dupuis, Tina Gruene, Darrell Penta, Molly Sands, and Ishabel Vicaria. I will always cherish the laughter and the commiseration we shared. Adam and I shared the same office for the last five years, and I could not imagine going through this journey without him. He is the best friend anyone could ask for, and I am a better person because of him. I am only sorry that he had to put up with my horrible musical taste. I hope that our paths will continue to cross.

My sanity was kept mostly intact throughout graduate school because of my friends. They are the best support network. This list is by no means exhaustive: Stefanie Tignor, Rachit Neupane, Patricia Yen, Prabarna Ganguly, Matthew Murry, Mengyao Li, Spencer McLaughlin,
Chien Ser Hong, Bibi Bardril, Veronica Lamarche, Phoebe Hwang, Luke Henry, Jing Yang, Sining Leng, Sharon Hung, and so many more. Their friendships mean the world to me.

I want to acknowledge every past and present member of the Social Interaction Lab. In this lab, I was able to hone my research ideas, presentation skills, and critical thinking. Mollie Ruben was instrumental in helping me with Study 1 of this dissertation. Katja Schlegel and Vanessa Castro are the best and most resourceful postdocs, and I aspire to be like them in my future lab. Kirsten Johnson and Michael Wang had to suffer through my criticism and sarcasm, and I am thankful for their support despite my personality. This dissertation could not be completed without the aid of many incredible research assistants: Adriana Jodoin, Lauren Coritt, Rachel Tenenbaum, Amanda Falcon, Claire Celestin, Samantha Dube, Samara Chafitz, and Lindsay Dougherty. Adriana and Claire were tremendously helpful in designing some of the studies and data collection. I am indebted to their brilliance and dedication.

This dissertation is the accumulation of the guidance and knowledge I have acquired over the years from the brilliant professors at Northeastern University. I would particularly like to thank David DeSteno for his generous mentorship even though I was not his graduate student. I will certainly miss his humor and occasional shouting down the hallway. I also want to thank Heather Brenhouse for being on my committee and providing me with her useful insights.

I also want to acknowledge my previous mentors for their advice that continues to guide me every day. Subha Kuijper believed in me when no one else did, and her patience motivated an unmotivated teenager. Kristin Lane never ceases to provide me with the advice I need to succeed, and I am grateful that she is still willing to advise me five years after college.

Last but not least, I want to thank all of the amazing people at Dunkin’ Donuts for providing me with my daily doses of caffeine. This dissertation ran on Dunkin’.
Abstract of Dissertation

With increasing egalitarianism in today’s society, overt expressions of negativity toward gay people are discouraged. Instead, straight people with strong anti-gay attitudes must regulate or suppress their prejudice. One possible manner in which straight people could regulate their prejudice during social interactions is overcompensation, conceptually defined herein as using positive behaviors to suppress or regulate one’s anti-gay bias. In other words, biased straight individuals attempt to regulate their prejudice by behaving positively toward gay people. Although overcompensation may seem counterintuitive, it has been observed within interracial interactions. However, research examining overcompensation within mixed-sexual orientation interactions is rare and there is very limited evidence. Six studies were conducted to examine straight people’s beliefs and behaviors regarding overcompensation of anti-gay bias, and one final study was conducted to examine gay people’s perception of overcompensation.

In Study 1, straight participants were randomly paired with a gay target person or a straight target person who was ostensibly in another room, and participants recorded videos introducing themselves to the target. Nonverbal coding of the videos found that participants paired with a gay target conveyed more positive impressions than those paired with a straight target. This first study suggested that straight people could potentially overcompensate around gay people by behaving positively.

In Studies 2a and 2b, straight participants were recruited to view excerpts of the videos from Study 1. Participants were tasked with guessing the sexual orientation of the target that Study 1 participants were paired with. Both studies found that participants were significantly inaccurate in judging the target sexual orientation likely because they did not attribute the observed positive behaviors as directed toward gay people.
Study 3 constructed a questionnaire to directly measure straight people’s beliefs about overcompensation, and correlates of these beliefs were surveyed. People with more anti-gay biases were more likely to endorse using positive behaviors to overcompensate.

Study 4a and 4b provided a laboratory examination of overcompensation and its boundary condition. Specifically, anti-gay bias would predict more positivity toward gay targets only when biased individuals possess cognitive resources to monitor their behaviors compared to biased individuals deprived of cognitive resources via cognitive load. Results did not provide evidence for overcompensation or its dependence on cognitive resources. Instead, biased individuals behaved more negatively toward the gay targets relative to the straight targets regardless of load.

Finally, Study 5 examined gay people’s perceptions of overcompensatory behaviors. In general, gay people who were more chronically suspicious of straight people’s motivations were more likely to think that straight people behave positively to overcompensate for their biases.

Even if straight people do not overcompensate, gay people’s beliefs and perceptions of straight people’s behaviors could still shape the dynamics of mixed-sexual orientation interactions, potentially exacerbating intergroup conflicts and misunderstanding. Implications for intergroup relations as well as prejudice reduction are discussed.
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Chapter 1

Introduction

In 2004, Massachusetts issued the first same-sex marriage license in the United States. In 2015, the Supreme Court of the United States made a landmark decision that legalized same-sex marriage in all 50 states. This dramatic shift in gay people’s legal rights over a span of a decade is a testament to current society’s proclivity toward egalitarianism. Indeed, evaluations of gay men and lesbian women are becoming more positive at the societal level: From 2006 to 2013, explicit bias against gay people declined by 26% and implicit anti-gay bias declined by 13.4% (Westgate, Riskind, & Nosek, 2015). This fast-changing attitudinal landscape can create societal mores that discourage any overt expression of prejudice, and it may instead lead to adoption of various strategies that could regulate, control, suppress, or conceal one’s prejudice (for reviews, see Crandall & Eshleman, 2003; Monteith, Lybarger, & Woodcock, 2009; Monteith & Mark, 2005; Plant & Devine, 1998; Richeson & Shelton, 2007). One of these possible strategies is paradoxical: Behaving positively toward minorities to regulate one’s negative biases, which is herein called overcompensation. This dissertation specifically examines overcompensation of anti-gay bias.

Anti-Gay Bias

In this dissertation, the term ‘anti-gay bias’ is referred to as negative attitudes toward gay men and lesbian women, and we use the term ‘gay people’ to broadly refer to individuals who identify as gay or lesbian. Prejudice toward members of the lesbian, gay, bisexual, transgender, and queer (LGBTQ) population is multifaceted: Prejudice toward gay people is not necessarily the same as prejudice toward bisexual or transgender people. Anti-gay bias alone is complex because evaluation of lesbian women is usually more favorable than evaluation of gay men (see

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Herek & McLemore, 2013 for a review). The complexity of prejudice toward LGBTQ members is acknowledged, but the present research is limited to anti-gay bias.

Prejudice can have an explicit and an implicit component (Greenwald & Banaji, 1995; Wilson, Lindsey, & Schooler, 2000). Explicit prejudice regarding a certain social group is typically viewed as negative attitudes endorsed consciously by an individual. It is usually assessed through self-report surveys and questionnaires. However, because society is becoming ever-more egalitarian, there is pressure for individuals to hide and deny their prejudice. Therefore, people often do not report that they hold explicit prejudice toward certain groups, prompting researchers to explore what is known as implicit, or subconscious, prejudice. Implicit prejudice encompasses negative attitudes that an individual is not aware of, cannot control, or unwilling to admit due to social desirability and the motive to maintain a positive self-concept.

The most popular and reliable method of measuring implicit prejudice is the Implicit Association Test (IAT) that relies on rapid association of concepts such as Black/White with Good/Bad, and implicit anti-Black bias is conceptualized as faster association between the Black category with Bad relative to Black with Good (Greenwald, McGhee, & Schwartz, 1998).

While explicit prejudice toward gay people seems to be rapidly changing at the societal level, implicit prejudice is slower and more resistant to change (e.g., Herek & McLemore, 2013; Westgate et al., 2015). Nonetheless, anti-gay prejudice is still real and undeniable but because society is becoming more accepting of LGBTQ populations, straight people may feel compelled to report favorable inclination for gay people simply to suit the demand of society and be “politically correct.” To understand the full extent of anti-gay prejudice, it is not sufficient to simply survey people’s attitudes. Understanding how attitudes at the societal level translate into the interpersonal level and examining actual behavior is particularly crucial as research
concerning the interpersonal processes of how straight people would behave around gay people is lacking. This dissertation addresses this gap.

**Negative Behavioral Expressions of Biases**

Myriad research programs have shown that majority group members’ negative attitudes toward minorities are typically reflected in poorer interaction quality, harsher evaluation, adverse emotional reactions, anxiety, or avoidance (e.g., Dovidio & LaFrance, 2013; Greenwald, Poehlman, Uhlmann, & Banaji, 2009; Herek & McLemore, 2013; Stephan, 2014; Wilson et al., 2000). However, most research in this domain centers on interracial interactions, particularly between White and Black people. Thus, this review of the literature is drawn primarily from research on interracial interactions.

Interacting with a member from the same race, compared to interracial interactions, is generally associated with less anxiety and more friendly nonverbal behavior (for a meta-analytic review, see Toosi, Babbitt, Ambady, & Sommers, 2012). Using implicit measures such as the IAT, researchers were able to demonstrate that White participants’ implicit anti-Black prejudice predicted more negative and anxious nonverbal expressions during interracial interactions relative to same-race interactions (Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001). Additionally, interracial interactions can be anxiety-provoking for White people due to their inexperience with outgroup members (Stephan, 2014), and White people’s physiological responses and nonverbal expressions likewise reflect this anxiety (Trawalter, Adam, Chase-Lansdale, & Richeson, 2012; West, Shelton, & Trail, 2009).

Some researchers argue that certain behaviors are more difficult to control (particularly nonverbal behaviors) and, therefore, they could be indicative of an individual’s attitudes (e.g., Dovidio & LaFrance, 2013; Wilson et al., 2000). However, behavioral expressions during
interracial interactions need not always be negative or uncontrollable. After all, the controllability of nonverbal behaviors has been documented as research has shown that certain behaviors initially thought to be beyond volitional control, such as the Duchenne smile, can actually be produced deliberately (Gunnery & Hall, 2014; Gunnery, Hall, & Ruben, 2013). Recent evidence suggests that people modify their behaviors during intergroup interactions to appear more likeable (Richeson & Shelton, 2007), which is discussed in greater detail below.

**Positive Behavioral Expressions of Biases**

According to a process model of interracial contact by Richeson and Shelton (2007), interacting with minorities can be particularly stressful for White people because they are generally concerned about appearing prejudiced or exposing their prejudice; therefore, White people engage in effortful self-regulatory strategies to control, suppress, or monitor their (potential) biases to appear likeable and non-prejudiced. Richeson and Shelton (2003) found that White participants with more implicit anti-Black bias showed more behavioral control (e.g., less body movement and less looking around) during interracial interactions compared to same-race interactions. After interracial interactions, White participants with strong implicit bias were more cognitively depleted than those with less bias (as measured via reaction time on the Stroop Task), suggesting that these individuals used most of their cognitive effort during the interactions to regulate their biases (Richeson & Shelton, 2003; Richeson & Trawalter, 2005). According to the process model, biased individuals do not always exhibit negativity when interacting with minorities; instead, they engage in effortful self-regulation to avoid being labeled or seen as prejudiced. Several studies highlighted below have additionally found that prejudiced individuals behaved more positively toward racial minorities, with important moderators to consider.
In three experiments, Mendes and Koslov (2013) empirically demonstrated that White participants overcompensated for their anti-Black bias by behaving more positively toward Black people than White people; they further demonstrated that overcompensatory behaviors were effortful and these behaviors were diminished when participants’ cognitive resources were depleted or occupied by other competing tasks. In Study 1, White participants showed more positive nonverbal behavior toward a Black confederate relative to a White confederate, but prejudice was not measured therein so overcompensation was only hinted at. In Study 2, White participants with high implicit anti-Black bias on the IAT selected more Black than White job applicants when they had the cognitive resources to do so (as indexed via cardiovascular challenge state) compared to when they lacked the cognitive resources (as indexed via cardiovascular threat state). In Study 3, White participants’ implicit bias was measured using cortisol reactivity (a neuromarker of stress and proxy measure of intergroup anxiety) when speaking to Black experimenters. Highly biased White participants preferred Black celebrities more than White celebrities in a forced choice task when they had the cognitive resources relative to biased individuals deprived of cognitive resources via cognitive load (as measured using an attention task in which participants had to count the number of specific musical tones). Essentially, the researchers found that White people could regulate their anti-Black bias and behaved more positively toward Black people. But given the cognitive resources needed to control such positive behaviors, these behaviors were diminished when biased participants were placed under cognitive load. The authors concluded that highly biased individuals overcompensated for their biases by behaving positively, but these overcompensatory positive behaviors were fragile and cognitively burdensome for people with negative social attitudes. Part of this dissertation was modelled after Mendes and Koslov (2013).
Another moderator of overcompensation other than cognitive resources is evaluative concern (i.e., concern about being negatively evaluated or judged by others). Vorauer and Turpie (2004) asked participants to make videos introducing themselves, which would then be shown to another person of the same race or different race. When White participants with strong racial bias had low evaluative concerns, they showed less positive nonverbal behaviors in their videos if they were told that the video would be shown to someone of another race compared to someone of the same race. In contrast, when participants had strong racial bias and high evaluative concerns, they behaved more positively toward an individual of a different race compared to someone of the same race. When one’s behavior has the potential to be evaluated or judged by a racial minority (or when anonymity is not ensured), biased individuals behave more positively to overcompensate for their prejudice.

Dupree, Sinclair, and Smith (under review) found that evaluation is also a moderator for implicit bias and helping behavior. When White participants were not being observed, their implicit bias predicted less pro-social behavior toward Black interaction partners within a dictator game in which the participants can offer any amount of money to their partners (within their $1 budget). However, when White participants were told that their behaviors would be observed and reviewed by others, their implicit bias predicted more monetary donations toward Black partners.

Croft and Schmader (2012) conducted two studies that examined the role of external and internal motivation to be non-prejudiced in evaluating racial minorities’ performance. Internal motivation reflects personal internalization of non-prejudicial values, whereas external motivation reflects disingenuous support of egalitarianism due to societal pressure to be politically correct or to follow a non-prejudiced norm (Plant & Devine, 1998). When evaluating mediocre essays written by White and racial minorities (Aboriginal Canadian in Study 1 and
Black person in Study 2), those who were highly externally motivated with low internal motivation (compared to highly internally and externally motivated individuals) were less likely to provide minorities with critical feedback for improvement and more likely to give minorities higher grades. In other words, when individuals were concerned about appearing racist (for external, societal reasons as opposed to personal motivation), they were more likely to demonstrate positivity toward racial minorities by being less critical and offering higher grades.

Most research on behavioral expressions of attitudes during intergroup interactions focuses on racial dynamics, and as a consequence, generalizability to other social groups is unclear, especially those concerning sexual orientation (Callender, 2015). In one of the few studies on this topic, Dasgupta and Rivera (2006) examined the effect of straight people’s implicit anti-gay prejudice, traditional beliefs about gender roles and identity (e.g., “It’s important that men appear masculine and that women appear feminine”), and beliefs about behavioral control (e.g., “While talking to another person, I’m conscious of what I communicate silently with my body language”) when interacting with a gay male confederate. In two experiments, the authors found that for individuals with strong traditional gender beliefs along with strong implicit anti-gay prejudice, low behavioral control was associated with less positive behavior (e.g., less smiling, eye contract, appearing comfortable and friendly) toward gay men. In other words, strongly biased individuals (in terms of attitudes concerning gender roles and homosexuality) showed less positive behaviors toward gay people if they also believed that they cannot control their nonverbal behavior. Interestingly, in their Study 1 using college samples, the authors found that strongly biased men who had high behavioral control actually showed increased positive behaviors toward gay men; this amplified positive behavior can be attributed to biased individuals successfully overcompensating for their biases by controlling their behavior.
to be more positive, similar to biased individuals in interracial interactions (e.g., Dupree et al., under review; Mendes & Koslov, 2013; Vorauer & Turpie, 2004).

**Unanswered Questions on Overcompensation**

In the opening introduction of this dissertation, overcompensation is conceptualized as positive behaviors enacted to suppress or regulate one’s negative anti-gay bias. Therefore, overcompensation as defined herein is predicated on two components: positive behaviors and negative attitudes. Previous research has indeed provided evidence to suggest that given the right context and condition, biased individuals can control their behavior to appear more positive toward social minorities (e.g., Dupree et al., under review; Mendes & Koslov, 2013; Vorauer & Turpie, 2004). Furthermore, interacting with minorities can be cognitively taxing for biased individuals because they engage in effortful self-regulatory strategies to appear non-prejudiced (Richeson & Shelton, 2003, 2007; Richeson & Trawalter, 2005), and disruption of cognitive resources via cognitive load can diminish overcompensatory behavior (Mendes & Koslov, 2013).

This body of evidence for overcompensation is however limited in three manners: generalizability, predictors, and ambiguity. Firstly, all of the studies mentioned were largely based on interracial interactions with the majority focusing on anti-Black bias. The first study conducted by Dasgupta and Rivera (2006) did offer a hint for overcompensation of anti-gay bias among college students’ nonverbal behaviors, but the effect was not observed in a replication with a broader community sample. In order to understand the multifaceted nature of prejudice, it is important to examine if overcompensatory effects can be found in attitudes and behaviors toward other social groups. This dissertation addresses this gap by focusing on anti-gay bias.

Secondly, the literature covered thus far used a variety of prejudice-related measures to predict positivity toward minorities. Mendes and Koslov (2013) measured biases using the IAT
in one study and cortisol reactivity in another study. Vorauer and Turpie (2004) found overcompensation using an explicit bias measure, while Dupree and colleagues (under review) used the IAT. Croft and Schmader (2012) found overcompensation in those high on external motivation and low on internal motivation to respond without prejudice. Perry, Murphy, and Dovidio (2015) found that White people who were more aware of their potential implicit anti-Black bias (using the Bias Awareness Scale) were more receptive to feedback concerning their biases, more willing to engage in diversity activities, and more attuned to subtle discriminatory behaviors. Monteith and Mark (2005) argued that prejudice-regulation requires awareness and concerns about one’s prejudice; therefore, bias awareness represent yet another possible predictor of overcompensation. Consequently, it is unclear which attitudinal measures can adequately predict beliefs or behaviors regarding overcompensation. This dissertation attempts to clarify this by including multiple individual differences measures as predictors.

Thirdly, overcompensation remains ambiguous in its theory, measurement, definition, origin, and even purpose. Stephan (2014) argued that overcompensation as observed in Mendes and Koslov (2013) could be due to regulation of intergroup anxiety. Although intergroup anxiety could stem from prejudice, it could also stem from general personality traits, world views, or contact experience (Stephan, 2014). For this dissertation, overcompensation was broadly defined as positive behaviors used to regulate or suppress prejudice. This perspective may not be shared by other researchers, and the current studies are limited in that they did not test for alternative explanations. This limitation is addressed more fully in the General Discussion.

Overview of Research

This dissertation addressed some of the gaps and unanswered questions in previous research by examining the structure underlying overcompensation of anti-gay bias. Seven studies
were conducted to systemically investigate straight and gay people’s beliefs and behaviors associated with overcompensation.

In Study 1, straight participants were paired with a gay or a straight target, and their nonverbal behaviors were coded. This first study established the foundation of all subsequent studies by demonstrating that straight participants behaved more positively toward a gay relative to a straight target person, suggesting that there was a possibility of overcompensatory behaviors within mixed-sexual orientation interactions.

Studies 2a and 2b tested indirect knowledge of overcompensatory behaviors by tasking naïve perceivers with categorizing target sexual orientation from videos of Study 1 participants. Attitude toward and contact experience with gay people were examined as possible individual difference predictors of this indirect knowledge.

Study 3 developed questionnaires that directly examined straight people’s beliefs regarding overcompensation. Multiple measures of attitudes toward gay people were included to identify potential individual difference correlates in these beliefs about overcompensation.

Study 4a and 4b examined the boundary condition of overcompensation in that anti-gay bias would predict more positivity toward gay targets only when biased individuals possess the cognitive resources to do (compared to biased individuals deprived of cognitive resources).

Finally, Study 5 examined gay people’s perceptions of overcompensation and how these perceptions relate to individual differences in beliefs and experiences with straight people.

In all studies, participants indicated their sexual orientation by selecting one of five options: Straight, Mostly Straight, Bisexual, Gay/Lesbian, or Other. In Studies 1 to 4, straight participants were those who self-identified as “Straight” and “Mostly Straight.” In Study 5, gay participants were those who self-identified as “Gay/Lesbian.”
Chapter 2

Study 1: Behavioral Expressions toward Gay vs. Straight Targets

The first study of this dissertation examined nonverbal expressions toward gay and straight people. While it was originally predicted that participants would be more negative in their nonverbal expressions toward the gay compared to the straight student, there was a possibility that the opposite pattern may emerge such that participants would behave friendlier toward the gay compared to the straight student based on previous work on overcompensation during interracial interactions (Mendes & Koslov, 2013; Vorauer & Turpie, 2004).

Method

Participants. Participants were 171 straight undergraduate students (50% female; \(M_{\text{age}} = 19.11\)) from Northeastern University who received partial course credit. These did not include 29 students who were excluded for failing manipulation check, failure to follow directions, camera malfunctions, being underage at the time of experiment without parental consent, not reporting gender, expressing discomfort, and identifying as a LGBTQ member. Because the results included participant gender as a moderator and the interest of the current study was primarily concerned with how straight people behaved toward gay people, participants who did not report their gender or did not identify as straight were excluded from analysis.

Procedure. Participants came to the laboratory individually for a study on first impressions. After consenting, a female experimenter informed the participants that there was another student in the other room who would be doing the study alongside them. Unbeknownst to the participants, this other student was not real. Participants were told they would rate their first impressions based on limited information. First, participants were told that they would write a short autobiography which would supposedly be exchanged with the fake student to make
impression ratings. Second, they would make a video of themselves which would also be exchanged for viewing. Finally, participants were told that they would interact with the fake student face-to-face. This set-up allowed us to manipulate the fake student’s gender and sexual orientation (see Vorauer & Turpie, 2004, for similar procedure).

Participants were first given 5 min to write a short autobiography with the prompt that they could discuss their upbringing, hometown, path to college, possible majors and career paths, and any current romantic relationships. Afterwards, the experimenter ostensibly exchanged the autobiographies and the participants received a hand-written autobiography that disclosed the fake student’s gender (Mike or Emily) and sexual orientation (has a boyfriend or girlfriend). Participants then completed questions concerning their first impression of the fake student. They then made a short video recording, introducing themselves to the fake student for 5 min. They were instructed to talk about themselves and respond to any information from the fake student’s autobiography. Participants were allowed to stop at any point before the 5-min cutoff. After 5 min, the experimenter re-entered the room and took the camera away. Participants completed an anti-gay bias scale and distractor measures about their own personality while the experimenter supposedly uploaded both students’ videos for playback. Finally, participants were debriefed and signed waiver to release their videos for behavioral coding and future research.

Anti-gay bias was measured using the Attitudes toward Lesbians and Gay Men scale (ATLG; Herek, 1988). However, given the floor effect of observed anti-gay bias ($M = 1.88; SD = 1.03; range = 1.00-6.05$) on a 7-point scale, the measure was not included in further analyses.

**Autobiography.** Undergraduate students not in the current study were recruited to write an autobiography about themselves. These were used to generate a controlled autobiography in which gender and sexual orientation were manipulated. A male and a female research assistant
hand-wrote the autobiographies of the fake male and female student (both gay and straight), respectively. Below is the autobiography with the manipulation shown in bold:

Hi, my name is [Mike or Emily]. I’m currently a freshman of Northeastern University. I’m originally from California and had lived there my entire life prior to college. I attended a high school which had a high demand for academics. This and support from my parents got me here today. I was unsure about coming to Northeastern, as I had another college in mind, but now that I am here, I am certain that I made the right decision. I’m undecided about my major but I’m liking all of my classes so far. My roommate and I are friendly and get along quite well. I was afraid that I wouldn’t like my roommate but so far so good. I met my [girlfriend or boyfriend] in my junior year of high school. [She or he] is still in California attending UCLA. The distance has been hard, but we’ve been able to see each other a couple of times over break. Plus, we Skype, so that helps. I can’t think of anything else to write.

Nonverbal coding. All 171 videos were shortened to the first 30 s for uniform coding across videos (Ambady, Hallahan, & Conner, 1999). All videos were muted to ensure that only visible nonverbal cues were being coded and that the coders were not influenced by the gender and sexual orientation conditions (in case the participants mentioned either of these). Three trained female research assistants individually coded all of the video excerpts, and only variables with inter-coder reliability of at least .60 (Cronbach’s alpha) were included for analysis.

Coders rated their overall, global impressions of the participants’ nonverbal behaviors (positive/friendly, engaged/interested, relaxed/comfortable, and assertive/dominant) on 7-point scales. Inter-coder reliabilities for each of these four impressions were acceptable (alphas = .60-.84). As these four items correlated positively with one another ($r > .21, ps < .01$), they were
averaged to form one *global positivity* score (alpha = .79). Global impression ratings were used as the primary coding procedure because research on lie detection (Hartwig & Bond, 2011), physical pain (Ruben & Hall, 2016), and interracial interactions (Dovidio & LaFrance, 2013) have shown that global impressions are better predictors of actual intentions and feelings than more specific nonverbal cues. These impressions were selected based on previous research on behavioral outcomes during intergroup interactions, and these nonverbal behaviors have been successfully used in prior research as indicators of positive nonverbal behaviors during intergroup interactions (e.g., Dasgupta & Rivera, 2006; Dovidio et al., 2002; Goh & Hall, 2015; McConnell & Leibold, 2001; Mendes & Koslov, 2013).

One research assistant also recorded how long each participant spoke within the 5 min video making task.

Initially, several additional nonverbal cues were coded (i.e., smile, self-touch, looking away, fidgeting, pauses, and speech dysfluency). Because these did not yield any effect relating to sexual orientation of the fake student, these are not discussed further to conserve space but the descriptive statistics are provided in Table 1.

**Results**

**Manipulation check.** Participants who failed to identify the fake student’s gender and sexual orientation correctly were excluded from analysis. To be conservative, participants who said the fake student was bisexual as opposed to gay were excluded. Inclusion of these participants did not change the results, so the following analyses excluded three participants who said the fake student was bisexual. A research assistant also watched all of the videos to examine if participants appeared to take the task seriously and if they completed it. All participants
completed the video-making task and did not question whether the other student was real or fake in their videos or afterwards.

**Nonverbal coding.** In a 2 (participant gender) x 2 (Mike or Emily) x 2 (gay or straight) between-subject factorial ANOVA, speaking time and global positivity were entered separately as the dependent variables. First, global positivity yielded a main effect of sexual orientation condition, $F(1, 163) = 10.75, p = .001, \eta_p^2 = .06$. Participants conveyed a more positive nonverbal impression when speaking to the gay student ($M = 4.62; SD = .82$) relative to participants who were speaking to the straight student ($M = 4.26; SD = .65$), $d = .49$. There were no other main effects or interactions, $Fs < 2.28, ps > .13$.

There was a significant gender condition by sexual orientation interaction for speaking time, $F(1, 162) = 4.74, p = .031, \eta_p^2 = .03$. Simple effects separated by gender showed that people talked longer to gay Mike ($M = 198.46 s; SD = 94.65 s$) than straight Mike ($M = 153.26 s; SD = 79.54 s$), $t(85.44) = 2.43, p = .017, d = .52$. The difference for straight ($M = 182.91 s; SD = 90.45 s$) and gay Emily ($M = 168.08 s; SD = 85.23 s$) was not significant, $t(80) = .76, p = .449, d = .17$.

**Discussion**

The results of Study 1 found that participants displayed more positive nonverbal behaviors (i.e., appeared more relaxed, positive, engaged, and assertive) toward the gay student than the straight student. Furthermore, there was an interaction of gender and sexual orientation for speaking time such that participants spoke longer to gay Mike than straight Mike, but this difference in speaking time was not significantly different between lesbian and straight Emily. It is probably unsurprising that on a liberal university campus and city, attitudes toward gay people are favorable, or students are pressured to disguise their behavior even when they have anti-gay
attitudes. The video making task potentially heightened evaluative concern as participants were
told that the fake student would view their videos, and there was opportunity for participants to
control their behavior when speaking to a camera as opposed to actual spontaneous interactions.
Given these features of the situation, participants could behave more positively toward the gay
student despite theories and findings suggesting that nonverbal behavior are more difficult to
control and less vulnerable to social desirability compared to self-report scales.

The results from Study 1 are largely consistent with research findings on
overcompensating biases via positive behaviors during interracial interactions (e.g., Mendes &
Koslov, 2013). However, it is important to note that Study 1 only hints at overcompensation
because participants’ actual attitudes were not properly measured. An explicit anti-gay measure
(ATLG) was used in this study but it could not capture meaningful variation in participants’
attitudes due to a floor effect. The measure includes items such as “Lesbians are sick” and “Male
homosexuality is a perversion.” These items could trigger reactance in participants, and the
direct and explicit nature of ATLG makes the measurement questionable in practice, especially
among liberal college students in today’s society. Therefore, more subtle questionnaires and
implicit measures need to be adopted or developed in future studies.

Study 1 provided an important foundation for subsequent studies as it established the
possibility that one could potentially regulate anti-gay attitudes via positive behaviors. The
behavioral differences observed in this study provided an interesting avenue to test people’s lay
understanding of mixed-sexual orientation interactions. Videos from Study 1 were used for the
following two studies to investigate if people could accurately determine if the observed positive
behaviors were directed toward gay people instead of straight people.
Chapter 3

Studies 2a and 2b: Inaccuracy in Categorization of Gay vs. Straight Targets

Studies 2a and 2b examined the detectability of behavioral differences directed toward gay versus straight people. If there are differences in behavior toward gay versus straight people, naïve viewers of these behaviors could then detect the subtle differences. Inferences regarding these behavioral differences could then be made to attribute the sexual orientation of the behavior’s recipients; these inferences offer an insight into people’s beliefs regarding behavioral expressions during mixed-sexual orientation interactions.

Using videos obtained from Study 1, new participants watched these videos and guessed whether the person in the video (speaker) was talking to a gay or straight student. Accuracy in detecting the sexual orientation of the fake student that the speaker thought they were talking to in such a case would rely entirely on the behavioral expressions of the speakers in the video. If accuracy can be observed, then it can be concluded that participants relied on the speakers’ behavioral cues and then applied a correct lay theory or belief system to decide whether the speakers were addressing the gay or the straight student. This procedure indirectly measured participants’ beliefs regarding straight people’s behavioral expressions toward gay individuals.

Stimulus Selection

Of the original 171 participants in Study 1, 137 participants consented to release their videos for future studies. Participants in this available collection of 137 videos are henceforth called speakers. Forty videos of male speakers and 40 videos of female speakers were randomly selected from the collection with equal distribution of the fake student’s gender and sexual orientation. In other words, the 40 videos of male speakers consisted of 10 talking to straight
Mike, 10 talking to gay Mike, 10 talking to straight Emily, and 10 talking to gay Emily. The same procedure was done for female speakers.

Behavioral Coding

The first 5 s of each video was discarded because speakers often mentioned their names and the gender or sexual orientation of the fake student at the beginning. The following 15 s were extracted for use in Studies 2a and 2b. Because these video excerpts were shorter than the originally coded videos in Study 1 and only a subset of videos were used, new behavioral coding was conducted. Two independent coders rated each 15 s video clip muted (nonverbal channel) and another two independent coders rated the videos unmuted (full channel); all coders were blind to the targets’ supposed sexual orientation. All ratings were based on five global impressions using 7-point scales similar to Study 1: smile a lot, positive/friendly, engaged/interested, relaxed/comfortable, and dominant/assertive. The five ratings were averaged to form a global positivity score for nonverbal channel ($\alpha = .90$) and full channel ($\alpha = .89$).

The previously coded nonverbal positivity in Study 1 (using longer excerpts of 30 s) was strongly correlated with both nonverbal ($r = .63, p < .001$) and full channel positivity ($r = .69, p < .001$). Nonverbal and full channel positivity correlated strongly, $r = .75, p < .001$.

Results

In a 2 (speaker gender: male or female) x 2 (fake student gender: male or female) x 2 (fake student sexual orientation: gay or straight) ANOVA, nonverbal positivity was entered as the first dependent variable. There was a main effect of fake students’ sexual orientation, $F(1, 72) = 4.66, p = .034, \eta^2_p = .06$, such that speakers behaved more positively toward the gay fake student ($M = 4.56, SD = 1.43$) relative to the straight student ($M = 3.86, SD = 1.52$), $d = .48$. There was also a main effect of speaker gender, $F(1, 72) = 5.42, p = .023, \eta^2_p = .07$, such that
female speakers \((M = 4.58, SD = 1.40)\) appeared more positive than male speakers \((M = 3.83, SD = 1.53)\), \(d = .52\). All other effects or interactions were not significant, \(Fs < 2.14, ps > .15\).

Using positivity score based on full channel as the dependent variable, there was also a main effect of fake students’ sexual orientation, \(F(1, 72) = 4.26, p = .043, \eta^2_p = .06\), such that speakers behaved more positively toward the gay fake student \((M = 4.41, SD = 1.20)\) relative to the straight student \((M = 3.80, SD = 1.39)\), \(d = .48\), consistent with their nonverbal positivity. All other effects or interactions were not significant, \(Fs < 1.52, ps > .22\).

Thus, videos of speakers paired with a fake gay student received more global positivity ratings (both nonverbal and full channel) from the trained coders than those paired with a fake straight student. There could be a variety of reasons as to why the supposedly gay student was addressed more positively than the straight student. Such reasons could include genuine positive attitudes about sexual orientation on the part of students in a liberal city, overcompensation for negativity or anxiety, or concerns about how the as-yet unmet gay student would evaluate them. However, for purposes of Study 2a and 2b, it is not necessary to know why speakers were more positive to the gay unseen target. What matters is that the behavior of speakers was documented, leaving perceivers’ lay theory as the only operative factor to understand the pattern of accuracy.

**Study 2a**

Study 2a examined accuracy in judging the fake student’s sexual orientation as well as potential individual differences in accuracy. An anti-gay bias measure was included to examine whether accuracy could be affected by participants’ attitudes regarding homosexuality because previous research has found that holding more anti-gay bias was associated with less accurate judgment of a person’s sexual orientation (Rule et al., 2015). Understandably, it may be more difficult to accurately judge a person’s sexual orientation through the behavior of another person
than a direct judgment as in Rule et al. (2015), but holding less anti-gay bias may nonetheless boost accuracy in this study, providing evidence of individual differences in indirect beliefs concerning behaviors during mixed-sexual orientation interactions.

**Method**

**Participants.** Fifty-seven straight undergraduate students from Northeastern University (77% female; $M_{\text{age}} = 19.17$) participated for partial course credit.

**Procedures.** Participants (perceivers) participated in groups of one to four and each group was randomly assigned to watch videos of male or female speakers. Perceivers watched the videos with the sound on (full channel). The experimenter explained the procedure of the stimuli-generation phase, including the fact that the people in the videos (speakers) were introducing themselves to a fake student who was said to be male or female and gay or straight. Perceivers’ task was to guess the gender and sexual orientation of the fake student from watching each speaker’s video clip. If perceivers knew a particular speaker, they were asked not to make a rating. After rating all videos, perceivers completed an anti-gay bias scale and demographic information, and they were debriefed.

**Anti-gay bias scale.** The Motivation to Avoid Sexual Orientation Disclosure (MASD; Rule et al., 2015) scale was used to replace the ATLG in Study 1 because the MASD contained more indirect questions that would ideally produce more variance in scores. The original items on the MASD were edited to include gay women and not just gay men as in the original scale. Example items include “I do not like to talk about issues related to sexual orientation” and “I think gay men and women should not announce their sexual identity in public.” All items were rated on a 5-point scale (1 = Not at all true of me; 5 = Very true of me). MASD showed good
internal reliability (alpha = .76; M = 1.89, SD = .79; range = 1.00-4.60), and previous research showed that it correlated significantly with various anti-gay bias measures (Rule et al., 2015).

**Calculation of accuracy scores.** Each perceiver watched 40 videos of male speakers or 40 videos of female speakers, and each perceiver judged the target’s gender (male or female) and sexual orientation (straight or gay/lesbian) after watching each video. Judgments of target gender are not discussed further because they are not pertinent to the questions at hand.

Accuracy for judging sexual orientation was scored as 1 for correctly identifying gay or straight and 0 for incorrect guesses. Averaging across all videos, each perceiver’s mean accuracy score could range continuously from 0 to 1, with .50 as chance or the guessing level.

After Study 2a was completed, it was discovered that one of the female speakers (talking to gay Emily) failed the manipulation check (i.e., indicated Emily was bisexual instead of gay). For this reason, ratings of this particular speaker were excluded, and all accuracy scores for the female speaker video condition were based on 39 videos rather than 40 videos.

**Results**

Accuracy was tested against chance (.50) with a one-sample *t*-test. Perceivers’ overall accuracy (M = .49; SD = .07) did not differ from chance, *t*(56) = .99, *p* = .326, *d* = .13. However, accuracy differed marginally between those watching male versus female speakers, *t*(55) = 1.94, *p* = .058, *d* = .52, such that perceivers watching male speakers (M = .48, SD = .07) were less accurate in judging targets’ sexual orientation than those watching female speakers (M = .51, SD = .06). In fact, the mean accuracy of .48 for perceivers in the male speaker condition was marginally significantly worse than chance, *t*(29) = 2.03, *p* = .051, *d* = .38. Perceivers’ accuracy for female speakers did not differ significantly from chance, *t*(26) = .72, *p* = .476, *d* = .14.
Perceivers’ explicit anti-gay bias score on the MASD and speaker gender were entered into a regression model as predictors with their accuracy as the dependent variable (see Table 2, top panel). MASD did not significantly predict accuracy ($\beta = -.17, p = .191$), but the effect was in the expected direction. Speaker gender significantly predicted accuracy ($\beta = .26, p = .050$), corresponding to the independent $t$-test results reported above that perceivers were more accurate in judging female than male speakers.

**Discussion**

Study 2a examined accuracy in detecting the sexual orientation of the recipient of a communication based on short excerpts of the speaker’s behavior. Perceivers were significantly below chance in judging the fake student’s sexual orientation when the speaker was male. This showed that perceivers thought the speaker was addressing a gay student when it was actually a straight student, and vice versa. Although perceivers were able to detect behavioral differences toward gay and straight targets, they made the wrong inference regarding the sexual orientation of the target. This provided an indirect test of perceivers’ knowledge regarding behavioral expressions during mixed-sexual orientation interactions, which indicated that perceivers tend to assume that men behaved positively toward straight relative to gay people and perceivers may not be aware that people could behave positively toward gay people.

There were potential individual differences in this indirect knowledge. Anti-gay prejudice did not significantly predict accuracy, but the magnitude of the relationship ($\beta = -.17$) was similar to that found in a meta-analysis on the relationship between anti-gay prejudice and categorization of sexual orientation using static photographs (Rule et al., 2015), a small effect that was not detectable within individual studies alone. In direction, the effect in the present study showed that people with less anti-gay prejudice were more accurate in guessing the fake
student’s sexual orientation than people with more anti-gay prejudice, suggesting that individuals with less anti-gay bias may possess some indirect understanding of the behavioral intricacies within mixed-sexual orientation interactions.

**Study 2b**

The goal of Study 2b was very similar to Study 2a but added corrective advice to perceivers, to see if their lay theory or understanding of what differences in positive behavior mean could change, leading to an increased level of accuracy. Specifically, perceivers were informed that people sometimes overcompensate for negative feelings by behaving more positively and then they did the same judgment task as in Study 2a.

In Study 2b, half of the perceivers were told that people could potentially overcompensate for by behaving more positively around social minorities. An intergroup contact measure was also included to replace the anti-gay bias measure in Study 2a. Even when people have positive LGBTQ attitudes, they do not necessarily have frequent exposure to gay people. Because contact with gay people is one of the most potent methods for reducing anti-gay bias (Herek & McLemore, 2013; Pettigrew & Tropp, 2006) and for improving accurate categorization of gay and straight faces (Brambilla, Riva, & Rule, 2013), positive and negative intergroup contact scales were included to explore whether the quality of previous contact can influence perceivers’ accuracy in guessing the target’s sexual orientation. If perceivers have had more positive exposure and interaction with gay people, they may be more aware of the subtleties in straight people’s and their own behavior toward gay people, which may include knowledge of overcompensation. Therefore, positive intergroup contact may increase accuracy in judging sexual orientation of the recipient of a communication because one’s lay theory is more accurate. On the other hand, negative experience with gay people may discourage understanding and
awareness of one’s own and others’ behaviors during mixed-sexual orientation interactions. Negative experiences could also be associated with fewer encounters with overcompensatory behaviors. Therefore, straight people with more negative contact experience with gay people would be less accurate.

Method

Participants. Eighty-eight straight undergraduate students from Northeastern University (75% female; $M_{age} = 18.45$) participated for partial course credit.

Procedures. Participants (perceivers) were run in groups of one to four, and each group was randomly assigned to watch videos of male speakers or female speakers, as in Study 2a. Half of the groups were randomly assigned to receive additional instructions that served as the manipulation: “Recent research has shown that people can be uncomfortable and anxious when interacting with someone from a social minority group, but they may sometimes overcompensate or hide these feelings by behaving nicer and more positive.” The control groups were not given any additional information. With the exception of the instruction manipulation, all procedures were the same as Study 2a.

After rating all of the videos, perceivers completed the intergroup contact scales and demographic information, and they were debriefed.

Videos. In the female speaker videos, one new female speaker was selected to replace the speaker who failed the manipulation check (see Study 2a). Male speaker videos remained the same as in Study 2a. The substitution of this new female speaker video did not change the positivity results observed in the stimulus-generation phase.

Quality of intergroup contact scale. Intergroup contact scales were adopted from Barlow et al. (2012). Positive intergroup contact was measured with three items ($\alpha = .93$):
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"How often do you have [FRIENDLY, PLEASANT, or POSITIVE/GOOD] interactions with gay men and women?" Negative intergroup contact was measured with three items (alpha = .78), using the same format but replaced with UNFRIENDLY, UNPLEASANT, and NEGATIVE/BAD. All items used a 7-point scale (1 = Never; 7 = Extremely frequently).

**Results**

Accuracy scores were calculated in the same manner as in Study 2a. Overall, perceivers (M = .48; SD = .07) were significantly worse than chance in judging the sexual orientation of the fake student, t(87) = 2.06, p = .043, d = .22. In a 2 (male vs. female speakers) x 2 (instruction manipulation vs. control) ANOVA, there was a main effect of speaker gender, F(1, 84) = 4.91, p = .029, η² = .06, such that perceivers again had greater difficulty in judging the fake student’s sexual orientation when watching male speakers (M = .47, SD = .07) compared to female speakers (M = .50, SD = .08), d = .49. Notably, the manipulation intended to alter the lay theory of perceivers, to make them more likely to infer that positive behavior was directed to the gay target, had no impact (instruction main effect and interaction, Fs < 1, ps > .698).

As in Study 2a, accuracy was tested against chance separately for male and female speakers. Perceivers in the male speaker condition (M = .47, SD = .07) were significantly inaccurate, t(44) = 3.30, p = .002, d = .50. Perceivers’ accuracy in the female speaker condition (M = .50, SD = .08) did not differ from chance, t(42) = .13, p = .900, d = .02.

Perceivers’ positive intergroup contact, negative intergroup contact, speaker gender condition, and instruction condition were entered into a regression model as predictors with accuracy in judging sexual orientation as the dependent variable (see Table 2, bottom panel). Speaker gender was a significant predictor (β = .22, p = .037), confirming the ANOVA. Positive
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intergroup contact predicted accuracy ($\beta = .21$, $p = .051$), such that perceivers with more positive experiences with gay people were more accurate in judging the fake student’s sexual orientation.

**Discussion**

Study 2b sought to increase accuracy through a manipulation of the instruction that reminded perceivers that sometimes people act very positively even when they hold negative attitudes or anxiety toward certain social groups. This, however, did not increase accuracy. As in Study 2a, there was significant inaccuracy in judging sexual orientation of the fake student when observing male speakers’ verbal and nonverbal behavior. Indeed, mean accuracy scores in both Studies 2a and 2b were of similar magnitude.

Positive intergroup contact positively predicted greater accuracy. As explained above, those perceivers who had experienced more pleasant interactions with gay people in the past may have developed a more refined knowledge regarding mixed-sexual orientation interactions (whether from their own interactions with gay people, from watching interactions of other straight people with gay people, or hearing gay friends talk about how straight people treat them), thus boosting accuracy in detecting the target’s sexual orientation.

**Lens Models of Positive Behaviors and Accuracy**

To better visualize the roots of the inaccuracy observed in Studies 2a and 2b, the results were placed within lens models (Brunswik, 1956), the elements of which are described in the following paragraph. Figures 1 and 2 show correlations in lens models separately for male and female speakers.

The first element, on the far left, is the criterion: whether the fake student was actually straight or gay. The second element, in the middle of the lens, is the assessed cues, which in this case was targets’ overall positivity toward the fake student on two dimensions (nonverbal global
positivity and full channel global positivity). The third element, on the far right, was perceivers’ collective guesses about each target’s sexual orientation, which was calculated by combining the perceiver data from Studies 2a and 2b by averaging across all perceivers after coding their responses so that the value of 1 indicated they judged the target to be gay and 0 indicated they judged the target to be straight. The mean is therefore the proportion of perceivers who guessed “gay.” Perceivers agreed well with each other on these judgments: Cronbach’s alpha for male speakers was .90 (75 perceivers) and Cronbach’s alpha for female speakers was .73 (70 perceivers). The strong internal reliability across perceivers suggests that perceivers in general tend to hold the same beliefs regarding the behaviors they saw.

Correlations between the sexual orientation of the fake student (0 = straight; 1 = gay) and the global positivity ratings made by the independent coders represent cue validity in lens model terminology. In other words, cue validity shows what behavioral cues were exhibited when speakers addressed the gay student relative to the straight student. Figures 1 and 2 show that for both nonverbal and full channel, male speakers were more positive toward the gay compared to the straight student ($p < .10$), confirming Study 1 which had more videos with longer nonverbal coding; the correlations were also positive for female speakers but somewhat weaker and non-significant. Correlations between speakers’ global positivity and perceivers’ sexual orientation judgments represent cue utilization in lens model terminology, in other words how perceivers used the cues in making their judgments. This correlation was significant based on full channel coding for the male speakers, indicating that perceivers were less likely to think that men were talking to a gay person if they behaved more positively. With female speakers, perceivers were much less likely to use this erroneous cue utilization. Finally, the correlations at the bottom of Figures 1 and 2 represent perceivers’ accuracy, which is negative as reported in the preceding
section. As can be seen, inaccuracy for male speakers was in the negative direction \((r = -.29)\), while accuracy for female speakers was not different from chance. Note, these correlations represent accuracy based on aggregated perceivers’ ratings within speakers and not individual perceivers’ judgments as reported in Studies 2a and 2b (i.e., the unit of analysis was speakers rather than perceivers), and therefore the effects in the lens models show marginal significance.

Studies 2a and 2b both found significant inaccuracy when perceivers’ judgments were based on male (but not female) speakers’ verbal and nonverbal behavior. Although speaker gender did not moderate positive nonverbal expressions in the stimuli, men generally hold more anti-gay prejudice than women (Herek & McLemore, 2013) and perceivers may have used knowledge of this fact to assume that male speakers in the stimuli would be conflicted (uncomfortable, or even hostile) when introducing themselves to a gay student and that these men would exhibit more negative behaviors toward the gay student as a result. Given that Study 1 actually found more positive behaviors toward the gay than straight student, such a belief would have led perceivers to apply a lay theory to make their judgments of male speakers that was incorrect given the stimuli they were judging. The belief that men’s positive behaviors are reserved for straight targets would mislead perceivers. Therefore, because speakers (regardless of gender) actually behaved more positively toward the fake gay student in the stimuli, perceivers’ lay theory was incorrect thus leading to inaccuracy.

Although people may behave more positively toward a gay person, naïve perceivers appear not to expect this; instead, two separate samples of perceivers inaccurately thought men’s positive behavioral expressions were directed toward a straight person. Studies 2a and b demonstrate that in general, people may not have an indirect understanding that straight people could actually behave positively toward gay people. Nonetheless, there were individual
differences such that those with less negative attitudes toward gay people and those with more positive contact experience with gay people were more accurate in their judgments.

Studies 2a and 2b found that straight people in general did not attribute positive behaviors as directed toward gay people, but this procedure was indirect and difficult. Perceivers were only shown 15 s of behaviors and had to attribute from these short glimpses of behaviors whether the speaker was talking to a gay or straight person. In real life, perceivers would have access to more information and longer excerpts of behaviors to guide their judgment. The next study used a more direct procedure to probe people’s perception of positivity toward gay people, and it specifically tested the core of this dissertation by defining this positivity as overcompensation and originating from anti-gay bias. Study 3 built on Study 2b which attempted to change perceivers’ accuracy by informing them that overcompensation exists. It is likely that the instruction manipulation was too weak as it was only provided in one sentence at the very beginning of the study. Study 3 tested straight people’s beliefs about overcompensation more directly by defining the concept for the participants.
Chapter 4

Study 3: Straight People’s Beliefs about Overcompensation

Studies 2a and 2b indirectly measured participants’ beliefs concerning behaviors during mixed-sexual orientation interactions by examining if participants could detect that straight people behaved positively toward a gay target, and results indicated that participants may not be aware that people actually behaved more positively toward gay than straight targets, even after a direct instructional manipulation. Nonetheless, there were individual differences such as the role of anti-gay bias and contact experience in predicting accuracy (albeit weakly). Because of this indirect procedure, it was unclear if perceivers actually possessed lay understanding of potential overcompensation as well as the degree to which they believed overcompensation exists. Study 3 was conducted with a larger sample size and broader demographic, and it directly measured participants’ beliefs about overcompensation of anti-gay bias. Study 3 provided a clearer demonstration of overcompensation than the previous studies which only hinted at overcompensation because the observed positive nonverbal behaviors in Study 1 could have stemmed from actual positive attitudes. By defining overcompensation as positive behaviors resulting from concealment or regulation of one’s anti-gay bias, Study 3 provided stronger and more concrete evidence for the concept. Furthermore, a variety of anti-gay bias measures were included to examine the correlates of these beliefs regarding overcompensation. It was predicted that more biased individuals would be more likely to endorse overcompensation.

Two scales were created to measure individual differences in overcompensation beliefs: The first scale measured beliefs about straight people’s overcompensatory behaviors in general and the second scale measured beliefs regarding their own overcompensatory behaviors. The two scales were modeled after the External Motivation to Respond without Prejudice Scale (Plant &
OVERCOMPENSATING FOR ANTI-GAY BIAS

Devine, 1998) and a measure of (nonverbal) behavioral control developed by Dasgupta and Rivera (2006). An example from the general beliefs scale is: “People sometimes act extra nice toward gay people so they can compensate for any prejudice they might have.” For the scale measuring participants’ own behavior, third-person references were changed to first-person: “I would act extra nice toward gay people so I can compensate for any prejudice I might have.” The conditional phrasing of “I would” was used to avoid assuming that all participants have anti-gay bias and to prevent any reactance from participants. See Table 3 for all items on these scales.

Method

Participants and procedures. Participants were 184 straight Amazon Mechanical Turk workers (51.1% female; M_age = 36.13) from the United States who were paid $1.50. Questionnaires were completed online and presented in randomized order, with the exception of the general overcompensation beliefs scale being always presented before the personal scale. Participants were debriefed at the end of study.

All measures used a 7-point scale.

General Overcompensation Beliefs. As described above, six items were created to measure general beliefs that people overcompensate. Higher scores reflected stronger beliefs that people behave positively to overcompensate for anti-gay biases. See Items 1 to 6 in Table 3.

Personal Overcompensation Beliefs. As mentioned before, the wordings from the general scale were altered into the first-person pronoun. Higher scores reflected stronger personal beliefs that they themselves would overcompensate. See Items 7 to 12 in Table 3.

Attitudes toward Lesbians and Gay Men Scale (Herek, 1988). This was a shortened version of the scale with four items measuring attitudes toward lesbian women and four items measuring attitudes toward gay men. Example items include: “Lesbians are sick,” “Female
homosexuality is a sin,” and “Male homosexuality is a perversion.” All eight items were averaged to form a single scale, with higher scores indicating more explicit anti-gay bias.

**Bias Awareness Scale (Perry et al., 2015).** This four-item scale measures participants’ awareness of their (potential) implicit anti-gay bias, with higher scores reflecting more awareness. Examples include: “Even though I know it’s not appropriate, I sometimes feel that I hold unconscious negative attitudes toward gay people” and “When talking to gay people, I sometimes worry that I am unintentionally acting in a prejudiced way.”

**Internal Motivation to Respond without Prejudice Scale (IMS; Plant & Devine, 1998).** Higher scores on the IMS indicated that a participant is more internally and personally motivated to behave without prejudice toward gay people. Examples from the five-item scale include: “I am personally motivated by my beliefs to be non-prejudiced toward gay people” and “Being non-prejudiced toward gay people is important to my self-concept.”

**External Motivation to Respond without Prejudice Scale (EMS; Plant & Devine, 1998).** Higher scores on the EMS indicated that a participant is more driven by external, societal pressure when behaving without prejudice. Examples from the five-item scale include: “Because of today's PC (politically correct) standards, I try to appear non-prejudiced toward gay people” and “I try to act non-prejudiced toward gay people because of pressure from others.”

**Comfort with Homosexuality Scale.** A 10-item scale was created to measure how comfortable participants would be in various situations relating to homosexuality. Participants were asked to imagine themselves in various scenarios such as seeing a gay couple kiss in public, a gay person touching and flirting with them, attending a gay wedding, and seeing a gay sex scene on TV. On the questionnaire, higher scores reflected more comfort, but scoring was reversed to be consistent in valence with the other bias measures.
Social Distance Scale (Orosz, Bánki, Bőthe, Tóth-Király, & Tropp, 2016). Participants’ willingness to accept a gay person was measured using five categories: a co-worker, neighbor, close-friend, roommate, and relative. On the questionnaire, higher scores reflected more willingness, but the scale was reversed to be consistent with other bias measures.

Self-Monitoring Scale (Lennox & Wolfe, 1984). In order to distinguish overcompensation from general behavioral control, the seven-item Ability to Modify Self-Presentation Subscale was included for discriminant validity. Examples are: “In social situations, I have the ability to alter my behavior if I feel that something else is called for” and “I have found that I can adjust my behavior to meet the requirements of any situation I find myself in.” Higher scores indicated firmer beliefs in one’s ability to monitor and alter own behaviors.

Self-Consciousness Scale (Scheier & Carver, 1985). The seven-item Public Self-Consciousness Subscale was included to distinguish overcompensation from general self-consciousness. Examples are: “I'm usually aware of my appearance” and “I'm concerned about what other people think of me.” Higher scores indicated more self-consciousness.

Results

Cronbach’s alpha and descriptive statistics for all of the scales are presented in Table 4.

Psychometric properties of the overcompensation beliefs scales. A principal components analysis with varimax rotation was conducted on all 12 items from the two overcompensation beliefs scales, which confirmed that there were indeed two factors (see Table 3). Factor 1 accounted for 35.97% of variance in the rotation sums of squared loadings, and it consisted of all the personal items. Factor 2 accounted for 31.04% of variance in the rotation sums of squared loadings. This second factor consisted of all the items on the general scale. The two scales also correlated significantly, but not redundantly, with one another, \( r = .36, p < .001. \)
These two scales could be directly compared because they were virtually identical except for the subject (other people versus self). Participants were less likely to believe that they themselves \((M = 2.88, SD = 1.47)\) would overcompensate relative to other people in general \((M = 4.26, SD = 1.18)\), paired sample \(t(183) = 12.36, p < .001, d_z = .91\). Men \((M_{\text{general}} = 4.36; M_{\text{personal}} = 2.85)\) did not show more overcompensatory beliefs than women \((M_{\text{general}} = 4.15; M_{\text{personal}} = 2.89), ts < 1.19, ps > .237\).

**Correlations with attitudinal measures.** Correlations between overcompensation beliefs and measures of attitudes toward gay people are shown in Table 5. Participants with stronger general and personal beliefs that people overcompensate had more explicit anti-gay bias; they were also more aware of their potential implicit biases, more concerned about appearing prejudiced for external reasons, more uncomfortable in situations involving homosexuality, and more unwilling to accept a gay person into their social circles. Stronger overcompensation beliefs were also associated with less internal motivation to be non-prejudiced. Given the strong negative correlations between internal motivation and other anti-gay bias measures, internal motivation scale can serve as a proxy for measuring attitudes.

Although the directions and magnitudes of the correlations were largely similar for general and personal beliefs, there were two notable exceptions. Personal overcompensation beliefs were stronger in magnitude than general beliefs in correlating with bias awareness and external motivation to be non-prejudiced. In other words, participants who stated that they would overcompensate for their bias were also more aware of their potential implicit biases and more pressured by others’ opinions of their prejudicial behaviors.
Correlations with non-attitudinal measures. Overcompensation beliefs were unrelated to the self-monitoring scale, suggesting that one’s general ability to modify behavior is a separate construct from overcompensation beliefs.

Participants who were more self-conscious were more likely to indicate that they personally would overcompensate \((r = .25, p = .001)\), but the relationship was weaker for the general scale \((r = .13, p = .083)\).

Psychometric properties of the Comfort with Homosexuality Scale. Although the construction of the Comfort with Homosexuality Scale was not a central component of this dissertation, it was created in part due to a need in the field for an explicit measure of anti-gay bias that is not easily susceptible to social desirability bias and skewness.

In this sample, participants used the entire possible range of the 7-point scale \((M = 3.52, SD = 1.72; \text{range} = 1.00-7.00)\) and the mean was closer to the midpoint of the scale compared to the other attitudinal scales (see Table 4). The scale demonstrated strong internal reliability \((\alpha = .95)\). Furthermore, a principal components analysis with varimax rotation was conducted on all 10 items, which returned a single factor that explained 69.93% of variance in the rotation sums of squared loadings (see Table 6). Men \((M = 2.36, SD = 1.37)\) expressed more discomfort than women \((M = 1.82, SD = 1.28), t(181) = 2.72, p = .007, d = .40\).

As shown in Table 5, Comfort with Homosexuality correlated significantly and strongly with ATLG \((r = .73)\), suggesting that Comfort with Homosexuality measured explicit anti-gay bias and it could be potentially useful for other researchers seeking alternative explicit measures.

Discussion

Unlike Studies 2a and 2b, Study 3 directly examined straight people’s understanding of overcompensation as well as correlates of their beliefs. Overall, these patterns of correlations
suggest that people with more anti-gay biases were more likely to believe that people in general and they personally would behave positively to overcompensate for their biases. Furthermore, these beliefs about overcompensation were related to individuals’ concerns and awareness about their own appearance (self-consciousness), their own potential implicit bias (bias awareness), and how others might perceive them if they did not behave according to egalitarian mores (external motivation).

Study 3 provided the first concrete evidence in this dissertation that certain individuals believed that positivity toward gay people can stem from regulation of anti-gay bias, particularly among biased individuals. The next study built on Study 3 by using a more behavioral measure to test overcompensation as opposed to self-reported beliefs. Additionally, Study 4 examined individual differences in overcompensatory behavior using correlates identified in Study 3. The chief individual differences of interest were anti-gay bias, concern about one’s anti-gay bias (i.e., bias awareness and external motivation), and internal motivation to be non-prejudiced.
Chapter 5

Studies 4a and 4b: Boundary Condition of Overcompensation

Study 3 was limited in its reliance on self-reported data. Therefore, a more behavioral measure was designed to examine straight people’s positive behavior toward a gay target. Straight participants were shown biographical information of five students (one gay, four straight men) and indicated if they would prefer to befriend (Study 4a) or be roommates with (Study 4b) a gay student compared to a straight student in a forced choice fashion. To concretely test for overcompensation and its two predicated components (i.e., positive behavior and negative bias), it was predicted that straight participants’ anti-gay bias would predict more outgroup preference for the gay student over the straight student.

Studies 4a and 4b further examined a boundary condition of overcompensation, particularly its reliance on cognitive resources. Previous research demonstrated that regulation of prejudice requires cognitive effort (e.g., Mendes & Koslov, 2013; Richeson & Shelton, 2007; Richeson & Trawalter, 2005). If participants require cognitive resources to behave positively in order to overcompensate for their biases, then this overcompensation should be dampened when participants are deprived of cognitive resources by having to do another cognitively demanding task simultaneously (i.e., cognitive load). The ability to perform a task (e.g., behaving positively to regulate one’s biases) becomes more difficult under cognitive load because limited cognitive resources have been occupied by another competing task. Therefore, it was predicted that highly biased individuals would behave more positively when they have the cognitive resources to do so (control condition), thus demonstrating overcompensation. However, under cognitive load, highly biased individuals would behave less positively toward a gay target. For low-biased individuals, the effect of cognitive load manipulation should not influence their behavior.
To examine anti-gay bias, Studies 4a and 4b used the Implicit Association Test (IAT) for various reasons. Firstly, implicit bias as measured via the IAT has been used in previous research that has documented overcompensatory effects (Dasgupta & Rivera, 2006; Dupree et al., under review; Mendes & Koslov, 2013). Secondly, as noted in Study 1, explicit anti-gay bias measurement is not ideal in capturing college students’ attitudes toward gay people. Thirdly, evidence suggests that people may actually be aware of their implicit bias as measured by the IAT and they are accurate in predicting their IAT performance (Hahn, Judd, Kirsch, & Blair, 2014). As such, implicit bias as measured by the IAT is not necessarily outside of one’s consciousness, but using the IAT does allow researchers to bypass social desirability bias in participants’ responses and provides an adequate test of overcompensation.

Studies 4a and 4b included three other individual difference measures: bias awareness, internal motivation to respond without prejudice, and external motivation to respond without prejudice. All three measures correlated with the general and personal overcompensation beliefs in Study 3, and they are predictive of prejudice (e.g., Perry et al., 2015; Ratcliff, Lassiter, Markman, & Snyder, 2006). Specifically, bias awareness is typically associated with more explicit anti-Black bias, and bias awareness has not been tested in other domains such as anti-gay bias. Internal motivation is generally associated with less anti-gay bias and external motivation is generally associated with more biases (Ratcliff et al., 2006). Correlations in Study 3 also confirmed these associations with explicit anti-gay bias measurements such as ATLG, Comfort with Homosexuality, and Social Distance (see Table 5). Although these measures can serve as additional proxies for anti-gay bias, conclusions must be drawn with caution.

Study 4a

Method
Participants. Ninety-one straight Northeastern University undergraduates (57% female; \(M_{\text{age}} = 19.29\)) participated in the study.

Procedure. Participants were told that this was a study on how people make first impressions using limited written information, and they were randomly assigned to be in the cognitive load condition or the control group. Participants in the cognitive load condition were told that we were also interested in how working memory plays a role in first impression formation so they had to memorize eight digits while doing the task; participants in the control condition were not given this instruction.

All participants saw five biographical profiles (self-descriptions) that were supposedly written by male Northeastern University students (see Figures 3 and 4). These profiles included demographic information (e.g., age, gender, sexual orientation) and answers to innocuous questions that served as distractors from the true purpose of the experiment (e.g., what’s your favorite food, where are you from, do you have any pets). Importantly, the sexual orientation was manipulated such that there were four profiles ostensibly written by straight male students and one profile of a gay male student. In the first phase, participants saw each student-profile individually to familiarize themselves with each student’s information and then rated how much they would like to befriend the student (e.g., “I would like to get to know this person more”) on a 7-point scale. In the critical testing phase, participants saw the same student-profiles as before but two profiles were now paired side-by-side on the screen. Participants were asked to select which of the two students they would prefer to befriend in a forced choice fashion. This side-by-side comparison was done in a round-robin style such that each student was compared against all other students once (10 total comparisons). The critical trials were the four choices between a gay and one of the four straight profiles. The dependent variable was calculated by dividing the
number of trials on which the participants selected the gay student over the straight student by the total number of possible critical trials (four), forming an overall preference score that ranges from 0 to 1 with .50 indicating equal preference for both gay and straight profiles; thus, higher scores would indicate more preference for gay over straight students. This dependent variable is henceforth called outgroup preference.

Afterwards, participants completed the IAT to measure their implicit bias. Finally, participants completed other individual difference measures and were debriefed.

**Cognitive load.** Participants in the cognitive load condition were asked to memorize a string of eight digits during the initial familiarization phase and reported back the digits after rating all five students individually. Participants were given a new string of digits during the critical testing phase and reported back the digits after completing this phase as well. This method has been used in previous research (e.g., Gilbert & Hixon, 1991).

**Profiles.** Initially in a pilot test, 25 student-profiles were generated by a research assistant. A pilot test on these profiles (without any mention of gender or sexual orientation) was conducted to determine five profiles that would be used. Pretest participants \(N = 27\) rated how much they wanted to befriend (e.g., “I would like to get to know this person more,” “I want to be friends with this person”) each of the 25 students on a 7-point scale \((1 = \text{strongly disagree}; 7 = \text{strongly agree})\). Five students with neutral ratings (mean rating around 4.00) were then selected. These student-profiles were then edited to show gender and sexual orientation. All five students were male, and only one student was randomly selected to be gay. See Figure 3 for an example of the straight student and Figure 4 for the gay student.

**Implicit Association Test (IAT; Greenwald et al., 1998).** The IAT used reaction time to measure the strength of relative association between a category (Gay and Straight) and an
evaluative attribute (Good and Bad). Stimuli presented as words or pictures related to the two categories and attributes appeared in the middle of the screen, and participants pressed one of two keys to sort the stimuli into the two categories. In half of the trials, participants sorted Good stimulus-words with the category of Gay (and Bad stimulus-words with Straight). In the second half of the trials, participants sorted Bad stimulus-words with Gay (and Good stimulus-words with Straight). Faster categorization implies ease of association between the concepts. Therefore, if someone categorized Gay with Bad faster than Gay with Good, then it is assumed that the person tends to associate gay people with negative attributes. In other words, the person has an implicit bias against gay people and proclivity for straight people. In this research, higher IAT scores reflected more implicit bias against gay people relative to straight people (i.e., more implicit anti-gay/pro-straight bias).

**Bias Awareness Scale (Perry et al., 2015).** This four-item scale measured participants’ awareness of their (potential) implicit anti-gay bias, with higher scores reflecting more awareness. An example is: “When talking to gay people, I sometimes worry that I am unintentionally acting in a prejudiced way.” All responses used a 7-point scale (1 = strongly disagree; 7 = strongly agree).

**Internal Motivation to Respond without Prejudice Scale (IMS; Plant & Devine, 1998).** Higher scores on the IMS indicated that a participant is more internally and personally motivated to behave without prejudice toward gay people. Examples from the five-item scale include: “I am personally motivated by my beliefs to be non-prejudiced toward gay people” and “Being non-prejudiced toward gay people is important to my self-concept.” All responses used a 7-point scale (1 = strongly disagree; 7 = strongly agree).
External Motivation to Respond without Prejudice Scale (EMS; Plant & Devine, 1998). Higher scores on the EMS indicated that a participant is more driven by external, societal pressure when behaving without prejudice. Examples from the five-item scale include: “Because of today's PC (politically correct) standards, I try to appear non-prejudiced toward gay people” and “I try to act non-prejudiced toward gay people because of pressure from others.” All responses used a 7-point scale (1 = strongly disagree; 7 = strongly agree).

Results

Cronbach’s alpha and descriptive statistics for all measures are shown in Table 7 (top panel). Correlations among these measures, collapsed across the cognitive load manipulation, are displayed in Table 8 (top panel). Initial evidence from the correlation matrix indicated that more bias awareness was marginally associated with less outgroup preference. Internal motivation was positively correlated with outgroup preference.

A one-sample $t$-test was conducted to examine if participants indicated significantly more preference for the gay student than chance (.50). Because all students were previously rated to be of equal likeability and sexual orientation was randomly assigned, participants selecting the gay student over the straight student on more than two trials (> .50) would be demonstrating more outgroup preference than expected by chance. Participants’ response ($M = .53; SD = .31$) did not differ from chance and they were equally likely to befriend the gay student as the straight student, $t(90) = .84, p = .401, d = .09$. Male participants ($M = .51; SD = .31$) did not differ significantly from female participants ($M = .54; SD = .31$), $t(89) = .39, p = .699, d = .08$. Moreover, participants in the control condition ($M = .55; SD = .33$) did not differ in outgroup preference from those in the cognitive load condition ($M = .51; SD = .30$), $t(89) = .68, p = .497, d = .14$. 
Next, individual differences and their interactions with cognitive load were examined using hierarchical linear regression with outgroup preference as the dependent variable (see Table 9). In the first step, cognitive load condition (0 = control; 1 = cognitive load) and all four individual differences measures (bias awareness, implicit bias, internal motivation, and external motivation; all mean-centered) were entered. In the second step, the interaction terms between each individual difference measure and the load condition were entered (with four total interaction terms for each of the four individual difference measures). Results yielded only one significant predictor: Internal motivation predicted outgroup preference ($\beta = .28$, $p = .049$) such that those who were more personally and internally motivated to be non-prejudiced were more likely to prefer the gay student over other straight students compared to those who were less internally motivated. None of the interaction terms was significant.

**Discussion**

Contrary to the predictions, implicit anti-gay bias was unrelated to outgroup preference, and cognitive load did not moderate any effect. There was no indication or hint of overcompensation in the current study. The only significant predictor was internal motivation. For individuals who were personally motivated to espoused non-prejudicial values, they were more likely to befriend a gay person relative to a straight person.

Several reasons could have contributed to the non-significant findings in Study 4a. Most concernedly, the small number of participants in this study could have contributed to a Type II error in that there was not enough statistical power to detect an effect. A replication was therefore conducted. Furthermore, Study 4b provided a more stringent test of overcompensation by asking participants if they preferred to be roommates with a gay target (as opposed to befriending), which would be more intimate and potentially more anxiety-provoking.
Study 4b

Study 4b was a direct replication of Study 4a with two changes. First, only men were recruited to increase the homogeneity of sampling and thereby increasing statistical power. In Study 4a, all of the students described in the choice task were men, but participants included men and women (although there were no overall gender differences in outgroup preference). This design alteration might reduce possible confound of participant gender by matching gender of targets and participants. Furthermore, men typically hold more anti-gay bias than women (e.g., Ratcliff et al., 2006; Herek & McLemore, 2013), and the recruitment of all male participants can provide a more stringent test of overcompensation. It should be noted that Study 1, Study 3, and Study 4a did not find gender differences in behaviors and beliefs. For these reasons, Study 4b only recruited male participants.

The second alteration in design was that participants were asked whom they would rather be roommates with as opposed to befriending. Befriending was thought to be relatively benign and not very anxiety-provoking. To provide a stronger test of overcompensation, male participants were asked if they would prefer to have a gay roommate or a straight roommate.

Method

Participants. Participants were 108 straight men ($M_{age} = 18.94$).

Procedure. The procedure was identical to Study 4a with the exception that participants were asked who they would prefer to be roommates with (rather than befriend).

Materials. All profiles and individual difference measures were the same as Study 4a.

Results

Cronbach’s alpha and descriptive statistics for all measures are shown in Table 7 (bottom panel). Correlations among these measures, collapsed across the cognitive load manipulation, are
displayed in Table 8 (bottom panel). With the exception of bias awareness, all other measures correlated with outgroup preference. Internal motivation was positively correlated with outgroup preference; implicit bias and external motivation negatively correlated with outgroup preference.

A one-sample \( t \)-test was conducted to examine if participants indicated significantly more preference for the gay student than chance (.50). Contrary to Study 4a, participants were less willing to indicate preference for the gay student over the straight students (\( M = .40; SD = .30 \), \( t(107) = 3.65, p < .001, d = .35 \)). Participants in the control condition (\( M = .38; SD = .31 \)) did not differ in outgroup preference from those in the cognitive load condition (\( M = .41; SD = .29 \), \( t(106) = .63, p = .527 d = .12 \)).

Next, individual differences and their interactions with cognitive load were examined using hierarchical linear regression with outgroup preference as the dependent variable (see Table 9). Procedures were identical to Study 4a. Result yielded two significant predictors. Replicating Study 4a, internal motivation predicted outgroup preference (\( \beta = .34, p = .008 \)) such that those who were more internally motivated to be non-prejudiced showed more preference for the gay student. Implicit bias negatively predicted outgroup preference (\( \beta = -.35, p = .005 \)). None of the interaction terms was significant.

**Discussion**

Study 4b replicated Study 4a in that there was no indication of overcompensation. Again, internal motivation was a significant positive predictor of outgroup preference. Implicit bias was a significant negative predictor of outgroup preference; this negativity supported previous literature on the general association between negative attitudes and negative behaviors. Importantly, none of the individual difference measures interacted with cognitive load.
In fact, participants in Study 4b showed significantly less willingness to engage with the gay student in general as evidenced by the one-sample t-test. Unlike Study 1, participants generally did not exhibit any positive behavior toward the gay student.

What could have accounted for these effects? A roommate selection paradigm may have been too intimate and thereby creating a strong adverse reaction in participants; as such, implicit bias was negatively associated with outgroup preference. Although Study 4b sought to increase statistical power by recruiting a more homogeneous sample, the number of participants was still fairly low considering multiple interaction terms were tested. Due to the similarities in research design between Studies 4a and 4b, a meta-analysis was conducted to combine the results and increase statistical power.

**Meta-Analytic Results of Studies 4a and 4b**

Mini meta-analyses were conducted to combine the results of the two studies to increase the statistical power of the research findings (Goh, Hall, & Rosenthal, 2016). Social psychological findings are typically small in magnitude and they can be difficult to detect in any single study alone. By combining similar studies, one can uncover small effects that are potentially undetectable in any one study individually.

The effect size in each meta-analysis was the correlation between an individual difference measure and preference for the gay student, separately for the control condition and the cognitive load condition. For instance, the correlations between bias awareness and outgroup preference in Studies 4a and 4b were meta-analyzed separately by cognitive load condition, yielding two meta-analytic results: one meta-analytic effect between bias awareness and preference for the gay student in the control group and a second effect size for the cognitive load condition. Fixed effects approach was used in which the mean effect size (i.e., mean correlation, $M$) was
weighted by sample size. All correlations were Fisher’s $z$ transformed for analyses and then converted back to Pearson correlations for presentation. Meta-analytic results are presented in Table 10.

**Bias Awareness**

In the control group, bias awareness did not correlate with outgroup preference ($M_r = -0.06, p = .569$). However, when participants were placed under cognitive load, more bias awareness was significantly associated with less outgroup preference ($M_r = -0.22, p = .029$). In other words, individuals with more bias awareness were less likely to prefer gay targets when their cognitive resources were taxed. These meta-analytic correlations, however, did not differ significantly from one another, $Z = 1.12, p = .263$ (two-tailed).

**Implicit Anti-Gay Bias**

Regardless of the load conditions, participants’ implicit anti-gay bias was significantly and negatively associated with outgroup preference. Across the two studies, participants with more implicit bias were less likely to indicate preference for the gay student, and this effect was evident regardless of cognitive load manipulation.

**Internal Motivation**

Regardless of the load conditions, participants who were more internally motivated to be non-prejudiced were always more likely to demonstrate preference for the gay student. In other words, being personally motivated to be non-prejudiced was related to greater outgroup preference, and this relationship was not influenced by cognitive load.

**External Motivation**

In the control group, external motivation to be non-prejudiced was marginally correlated with less preference for gay over straight profiles ($M_r = -.18, p = .084$). In the cognitive load
condition, the relationship between external motivation and outgroup preference weakened slightly and was not significant \( (M_r = -0.14, p = .197) \). Nonetheless, the meta-analytic correlations were negative in direction, suggesting that people who were more likely to behave in non-prejudiced manner due to external social reasons were less likely to demonstrate preference for the gay student, and the direction of this relationship was not influenced by load.

**Discussion**

The meta-analyses sought to increase statistical power by integrating the results from Studies 4a and 4b, particularly in examining the role of cognitive load manipulation in changing the relationship between outgroup preference and individual difference measures of anti-gay bias. With the exception of bias awareness, the directions of the meta-analytic correlations did not differ in the cognitive load and control condition for the other three measures, suggesting that behavior toward gay targets was not necessarily fragile or cognitively effortful.

For bias awareness, there may be a weak indication to suggest that showing outgroup preference was cognitively effortful. In the control conditions, bias awareness had no relationship with outgroup preference, with a meta-analytic correlation nearing zero. The meta-analytic correlation for cognitive load, on the other hand, was negative and significant. This finding suggests that attunement and awareness of one’s biases may lead one to use cognitive resources to behave in egalitarian manner toward gay people, but taxing these resources would dampen highly bias aware individuals’ positivity toward gay people. These interpretations are merely speculative given the weak results, even within the meta-analysis.

Despite previous research demonstrating the cognitively effortful nature of overcompensation and prejudice-regulation (e.g., Mendes & Koslov, 2013; Richeson & Shelton, 2007), Studies 4a and 4b did not find an interactive effect of anti-gay bias (measured in four
different ways) and cognitive load. Furthermore, there was no indication of possible overcompensatory behaviors as more implicit anti-gay bias predicted less preference for the gay student regardless of the load condition. These findings could be due to design flaws in the dependent and independent variables. Participants were only shown five student-profiles, and internal reliability was very weak as shown in Table 7. Future research could increase the number of students for participants to evaluate, which would increase internal reliability and statistical power. The cognitive load manipulation could also be changed. Cognitive load can take many forms and digit memorization, as used in Studies 4a and 4b, is one of many possible methods. Mendes and Koslov (2013) used a more involved task in which participants had to pay attention to various musical tones during the study and count the number of times when a specific tone was played. Another method of probing cognitive effort is a speeded task in which participants are asked to make judgments as fast as possible or taking time to consider their responses (Hughes, Ambady, & Zaki, 2017): If a task is cognitively effortful, then depriving participants of the opportunity to consider or think about their responses should influence their performance. Another option is to measure cognitive depletion afterwards. If a certain task requires cognitive effort, then participants may be exhausted afterwards and could not perform further cognitively demanding tasks such as a Stroop Task (Richeson & Shelton, 2003; Richeson & Trawalter, 2005). To fully understand overcompensation as well as its potentially fragile nature, future research should consider these methodological improvements.

Thus far, all of the studies have only examined how straight people’s anti-gay bias was related to their beliefs and behaviors, whether positively or negatively. However, understanding of intergroup relations is incomplete without considering the perspectives from the targets of these beliefs and behaviors. Accordingly, the final study of this dissertation examined how gay
people perceived overcompensation. Even if the current studies thus far could not document overcompensatory behaviors, lay beliefs and perceptions do not necessarily have to match the truth or reality (Levy, Chiu, & Hong, 2006). If gay people perceived straight people’s positive behaviors as originating from anti-gay bias, then intergroup interactions could prove difficult even despite any attempts by straight people to ameliorate the situation.
Chapter 6

Study 5: Gay People’s Perception of Overcompensation

From the majority members’ perspective, overcompensation may be perceived as a useful strategy to regulate their biases during intergroup interactions. However, minorities do not agree. Positive feedback and praises from White people can be attributionally ambiguous because racial minorities could not definitively determine if the positivity is genuine or overcompensatory (Kunstman, Tuscherer, Trawalter, & Lloyd, 2016). Racial minorities experience physiological threat as a consequence, particularly among those who are more suspicious of White people’s intents (Major et al., 2016; Mendes, Major, McCoy, & Blascovich, 2008). Racial minorities demonstrate individual differences in trait suspicion of White people’s intention to be non-prejudiced (Major, Sawyer, & Kunstman, 2013), and chronically suspicious minorities are more vigilant of and threatened by White people’s smiles (Kunstman et al., 2016). This vigilance may likely be grounded in suspicious minorities’ accuracy in detecting White people’s external motivation to behave non-prejudicially, as opposed to personal motivation to be non-prejudiced (LaCosse et al., 2015). Even if majority members are motivated to behave positively to regulate their biases, minorities may not be convinced.

Given that Study 3 in this dissertation found that more biased straight people were more likely to think that others and they themselves would overcompensate, it is important to examine how gay people would perceive these behaviors. This final study examined individual differences in perception of overcompensation among people who identified as gay or lesbian. The two overcompensation beliefs scales in Study 3 were adapted to examine gay people’s perceptions of overcompensation. The wordings were only slightly altered to emphasize straight people’s treatment of gay people. For instance, in the general scale, an item reads: “Straight
people sometimes act extra nice toward gay people so they can compensate for any prejudice they might have.” Participants also responded to similar items regarding their personal experience: “Straight people sometimes act extra nice toward me so they can compensate for any prejudice they might have.”

**Method**

**Participants and procedures.** Participants were 162 individuals (52.5% female; $M_{age} = 29.00$) who self-identified exclusively as gay or lesbian; they participated in exchange for a chance to win a $50 gift card. Recruitment was done via a snowballing technique by emailing friends and posting on social media. The inclusion criteria during recruitment were that the person must identify as gay/lesbian, be at least 18 years old, live in the United States, and speak English fluently. Participants were primarily recruited from Massachusetts, Illinois, New York, and California. Questionnaires were completed online and presented in randomized order, with the exception that the general overcompensation scale was always presented before the personal scale. Participants were debriefed at the end of study.

All measures used a 7-point scale.

**General Overcompensation Perception.** The only difference from the general scale in Study 3 was the addition of “Straight” to emphasize straight people’s behavior toward gay people (e.g., “Straight people adjust their nonverbal behavior to look comfortable around gay people even if they may feel uncomfortable inside”). Higher scores reflected stronger beliefs that straight people’s positive behaviors can be a function of their anti-gay bias.

**Personal Overcompensation Perception.** The wordings from the general scale were altered to reflect participants’ perception of their own experience (i.e., “Straight people adjust their nonverbal behavior to look comfortable around me even if they may feel uncomfortable...
Higher scores reflected stronger perception that straight people overcompensate around them. The general scale was always presented right before this scale.

**Suspicion of Motives Index (SOMI; Major et al., 2013).** The SOMI measured racial minorities’ perception of White people’s intention when they behave in a non-prejudiced manner. SOMI was calculated by subtracting the Perceived Internal Motivation Scale ($M = 5.18$, $SD = .71; \alpha = .71$) from the Perceived External Motivation Scale ($M = 4.95$, $SD = 1.18; \alpha = .90$). Example items from the two subscales, respectively, are: “When straight people act in a non-prejudiced way toward gay people, it is because it is personally important to them not to be prejudiced” and “When straight people act in a non-prejudiced way toward gay people, it is because they want to avoid disapproval from others.” Higher scores indicated greater trait suspicion of straight people’s non-prejudicial behaviors as driven by external, societal pressure rather than internal, personal motivation.

**Positive Intergroup Contact (Reimer et al., 2017).** Previous positive contact experience with straight people was measured with four items. Example items are: “How often have you been supported by straight people” and “How often have you been befriended by straight people?” Higher scores indicated more frequent positive contact experiences.

**Negative Intergroup Contact (Reimer et al., 2017).** Previous negative contact experience with straight people was measured with four items, and examples include: “How often have you been ridiculed by straight people” and “How often have you been intimidated by straight people?” Higher scores reflected more frequent negative contact experiences.

**Community LGBT Friendliness.** Participants were asked to rate how LGBT friendly they perceived their following communities to be: school/workplace, neighborhood, city, state,
and country. The five items were averaged together, with higher scores indicating greater perceived LGBT friendliness in their communities.

**Results**

Descriptive statistics and Cronbach’s alphas of all measures are presented in Table 11 and correlations are presented in Table 12. Gay participants’ perception of overcompensation directed toward themselves and toward gay people in general correlated very highly, \( r = .74, p < .001 \). Participants perceived straight people to overcompensate less around them (\( M = 3.69, SD = 1.05 \)) relative to their group in general (\( M = 4.10, SD = .95 \)), paired sample \( t(161) = 7.16, p < .001, d_z = .56 \). Gay men (\( M_{\text{general}} = 3.97; M_{\text{personal}} = 3.57 \)) did not differ in their perceptions compared to lesbian women (\( M_{\text{general}} = 4.20; M_{\text{personal}} = 3.77 \)), \( t < 1.52, ps > .131 \).

Suspicion of Motives correlated with both overcompensation perception measures, suggesting that gay people who were more chronically suspicious of straight people’s intentions were more likely to think that positivity toward gay people in general and toward themselves can be due to anti-gay bias. These effects were driven by the Perceived External Motivation subscale, which correlated significantly with both the general overcompensation scale (\( r = .42, p < .001 \)) and the personal scale (\( r = .40, p < .001 \)). The Perceived Internal Motivation subscale did not correlate with either the general (\( r = .04 \)) or the personal scale (\( r = .02 \)).

Gay people’s perception of overcompensation did not correlate with their contact experiences with straight people, however positive or negative. It is worth noting that gay participants in this sample reported fairly positive intergroup contact experience and perceived their social communities to be very LGBT friendly. In fact, negative previous experiences with straight people were fairly low (see Table 11). It thus remains inconclusive how perception of overcompensation relates to more varied intergroup experiences.
Discussion

This final dissertation study examined the minority perspective in overcompensation. Gay participants’ perceptions of overcompensation toward other gay people in general and toward they themselves were correlated significantly and positively with their chronic suspicion of straight people’s motivations. Even though straight people may perceive overcompensation or behaving overly positive as a strategic solution to regulate their biases, gay people may be suspicious of this behavior.

Recall that the Suspicion of Motives Index was composed by two subscales: Perceived External Motivation and Perceived Internal Motivation. These two subscales were based on the External Motivation to Respond without Prejudice and the Internal Motivation to Respond without Prejudice, respectively (Plant & Devine, 1998). Studies 4a and 4b found that those who were more internally motivated showed consistently more positivity toward the gay target. When contextualizing Studies 4 and 5 together, a dimmer view of intergroup relations is formed: Straight people behaved positively for internal reasons yet gay people perceived these positive behaviors as more likely to be due to external reasons. Thus, genuine positivity from straight people could be misperceived as disingenuous from gay people’s perspectives. Misinterpretation of motivations would likely propagate intergroup conflict.

Interestingly, gay participants were less likely to perceive themselves as targets of overcompensation relative to other gay people in general. This is consistent with previous research that has found that racial minorities and women perceived more discrimination directed toward their social groups relative to discrimination that they had personally faced (Taylor, Wright, Moghaddam, & Lalonde, 1990). Study 5 generalized this effect to behaviors that appear more positive and benign than other overt discriminatory behaviors.
Chapter 7

General Discussion

Imagine a person coming out as gay to a group of friends. In hearing the news, these friends appear positive and supportive. Are the friends’ behaviors genuine? Could they be potentially expressing support to suppress or regulate their negative beliefs regarding homosexuality? Are they aware that they themselves or the other people in the group could be overcompensating? Should the gay person be suspicious of the friends’ behaviors? These questions form the core of the current dissertation.

Seven studies were conducted to examine the structure of overcompensation, defined herein as positive behaviors toward gay people in order to suppress or regulate one’s anti-gay bias. Straight people conveyed more positive nonverbal impressions toward a gay compared to a straight target. Although straight naïve perceivers in general did not view these positive behaviors as directed toward a gay target, there were potential individual differences such as positive contact experience and anti-gay bias. By directly measuring straight people’s beliefs, it became evident that more biased individuals (and those who were more concerned about their own bias or about appearing prejudiced) were more likely to endorse beliefs regarding overcompensation. From the perspectives of those who identified as gay or lesbian, those with more chronic suspicion of straight people’s intentions were also more likely to think that straight people’s positivity toward them and other gay people could be driven by anti-gay bias and for external self-presentation purposes. Nonetheless, anti-gay bias did not positively predict preference for gay targets (regardless of availability in biased individuals’ cognitive resources) and there was no concrete indication of overcompensation. The dynamics within mixed-sexual orientation interactions are made more difficult by misinterpretation of positive behavior.
Summary of Seven Studies

In Study 1, straight participants’ nonverbal and speaking behaviors were coded to examine if they behaved friendlier toward a gay target person compared to straight target person. This first study established the foundation for subsequent studies by demonstrating that straight participants behaved more positively toward a gay relative to a straight target person, suggesting that straight people could potentially overcompensate around gay people by behaving positively to regulate their biases.

Studies 2a and 2b tested indirect knowledge of potential overcompensatory behaviors by tasking naïve perceivers with categorizing the sexual orientation of unseen targets from videos of Study 1 participants. Straight perceivers interpreted the observed positive behaviors in Study 1 as reserved for straight targets instead of gay targets, and perceivers were subsequently inaccurate in their categorizations. In general, perceivers did not understand the intention and motivation behind the positive behaviors and did not perceive that positivity could be directed at gay people. Nonetheless, there were potential individual differences in this knowledge such as anti-gay bias and previous positive contact experience with gay people. It was posited that pro-gay attitudes and positive experience can foster more refined understanding of the behavioral intricacies within mixed-sexual orientation interactions, thus allowing perceivers to form more accurate judgment of targets’ sexual orientation through brief glimpses of someone else’s behaviors.

Study 3 directly examined straight people’s beliefs regarding overcompensation and identified possible predictors of overcompensation. A questionnaire was developed to directly measure straight people’s beliefs about overcompensation, and correlates of these beliefs were surveyed. In general, individuals with more anti-gay biases were more likely to endorse using positive behaviors to overcompensate.
Study 4a and 4b provided a laboratory examination of overcompensation and its boundary condition, specifically predicting that anti-gay bias would predict more positivity toward gay people when biased individuals have the cognitive resources to do so. Results did not provide evidence for overcompensation. In fact, straight people in Study 4b exhibited more negativity toward gay targets than expected by chance, and implicit anti-gay bias predicted less positivity toward gay targets regardless of the load conditions. There was a weak indication of cognitive resource dependence among those who were more aware of their potential implicit bias. Without cognitive load, bias awareness did not correlate with preference for gay over straight targets. However, when participants with more bias awareness were placed under load, they showed less preference for gay targets, suggesting that people who were more attuned and aware of their biases may need cognitive control to behave in egalitarian manners.

Finally, Study 5 examined gay people’s perceptions of overcompensatory behaviors. In general, gay people who were more chronically suspicious of straight people’s motivations were more likely to believe that straight people behave positively to overcompensate for their biases.

Alternative Explanation

An important component of overcompensation that did not receive attention in this dissertation is evaluative concern (e.g., Croft & Schmader, 2012; Dupree et al., under review; Vorauer & Turpie, 2004). That is, anti-gay bias may not be the sole predictor of positivity toward gay people; individuals would amplify their positivity toward minorities when they are either concerned about being judged negatively for expressing biases (Croft & Schmader, 2012) or placed in situations where someone is monitoring their behaviors (Vorauer & Turpie, 2004).

Although prejudice is an important component of overcompensation, these dissertation studies did not fully consider the supplementary role of evaluative concern. In Studies 3 and 4,
bias awareness and external motivation to be non-prejudiced were broadly grouped as measures of anti-gay attitudes (and these two measures did actually correlate with more traditional anti-gay bias scales). These two measures are closely associated with evaluative concern (over their own bias and others’ opinion of their bias), and they were strong predictors of personal beliefs regarding overcompensation (Study 3). Studies 4a and 4b further demonstrated that bias awareness could be susceptible to cognitive load manipulation, suggesting its potential role in overcompensation. It is not enough to consider anti-gay bias in overcompensation; one should further consider the interactive role of evaluative context.

Additionally, Study 1 found potential overcompensatory behaviors likely because straight participants made videos that would be shown to a gay person and they were further led to believe that they would interact with the gay person later, which would heighten evaluative concern. In Studies 4a and 4b, there was no indication of overcompensation because straight participants viewed written profiles of gay and straight students without worrying about being judged by or possibly meeting these students in the future. In other words, Studies 4a and 4b did not trigger evaluative concern. Although the experimenters were also in the same room as the participants in Studies 4, this presence was perhaps not a potent trigger of evaluative concern. Future research should therefore consider the role of evaluative concern more carefully (either as an individual difference measure or as an experimental manipulation) in addition to anti-gay bias in predicting positivity toward gay people.

**Implications for Intergroup Relations**

Is overcompensation productive for intergroup relations? There will probably never be a clear answer to this question. On one hand, regulating prejudice with positive expressions seems much more appropriate than overt derogation or aggression. Overcompensation is certainly
preferable over anti-gay hate crime, for example. On the other hand, overcompensation can be
disingenuous in that it represents a self-presentation strategy, displayed to conform to social
norms. The strong correlation between personal overcompensation beliefs and external
motivation scale in Study 3 ($r = .68$) suggests overcompensation may just be a façade to entertain
the current social mores. When push comes to shove, a biased individual may revert to negative
behaviors. Indeed, research has demonstrated that when biased White people are cognitively
depleted or placed in low evaluative situations, they do not overcompensate around racial
minorities (Dupree et al., under review; Mendes & Koslov, 2013; Vorauer & Turpie, 2004).
Studies 4a and 4b further demonstrated that inducing cognitive loads might disrupt
overcompensatory behaviors among those who are more aware of their anti-gay bias. Given the
potential fragility of overcompensatory behaviors, it is unsurprising that gay people’s chronic
suspicion of motivations correlated with their perception of overcompensation.

Is this suspicion warranted? When contextualizing Study 5’s finding on gay people’s
suspicion with the patterns of correlations among the straight participants in Study 3, being
skeptical of straight people’s positive behavior may not be entirely baseless considering that
these behaviors could indeed be stemming from anti-gay bias. Accordingly, LaCosse and
colleagues (2015) found that racial minorities with more chronic suspicion were more accurate in
detecting White people’s levels of external motivation to respond without prejudice. Greater
suspicion of motives is also linked with accuracy in differentiating White people’s Duchenne and
non-Duchenne smiles (Kunstman et al., 2016). Additionally, racial minorities are significantly
accurate in detecting White people’s attitudes (e.g., Hehman, Leitner, Deegan, & Gaertner, 2013;
Richeson & Shelton, 2005). Furthermore, overcompensatory behaviors are potentially fragile and
effortful (Studies 4a and 4b; Mendes & Koslov, 2013); therefore, suspicion of straight people’s
intentions and their positive behaviors may prove to be adaptive for minorities in the long run.

However, the self-fulfilling prophetic nature of gay people’s suspicion is concerning given that in Studies 4a and 4b, straight people who were more internally motivated were more likely to behave positively toward gay people. In contrast, gay people perceived positivity as stemming from anti-gay bias and external motivation, and not internal motivation (Study 5). Even if straight people did behave genuinely positively, gay people may not be convinced or they may not perceive the behavior as genuine. This distrust from gay people could amplify straight people’s concern about appearing prejudiced. Consequently, straight people might respond with anxiety, hostility, or disappointment, thus perpetuating a cycle of intergroup misunderstanding and miscommunication (West et al., 2009; Word, Zanna, & Cooper, 1974).

Initial interactions across group boundaries can be anxiety-provoking, hostile, or simply ambiguous (e.g., Crocker & Major, 1989; Richeson & Shelton, 2007). Furthermore, majority and minority group members enter intergroup interactions with very different goals, motivations, and expectations (Bergsieker, Shelton, & Richeson, 2010). All of these situational influences surrounding intergroup interactions seem to fuel more conflict whenever members of different groups interact. Yet ironically, a large volume of literature has suggested that contact experiences with outgroup members can reduce prejudice (for a meta-analytic review, see Pettigrew & Tropp, 2006). Over time and over the course of more intergroup interactions, these contact experiences would theoretically improve one’s negative outgroup attitudes (MacInnis & Page-Gould, 2015). But if initial encounters are difficult, then people may be discouraged to participate in further intergroup interactions. Intergroup interactions are largely unavoidable in today’s society, and this inevitability may in the end hold implications for prejudice reduction.

**Implications for Prejudice Reduction**
Overcompensation could represent an early stage of attitudinal and behavioral change. Biased people with a penchant for positive expressions as opposed to overt negative behaviors could potentially develop more favorable attitudes and more genuinely positive behaviors toward gay people (and other minorities) in the future if they are motivated to change their biases. However, majority members’ positivity may not be convincing from minorities’ perspectives. Racial minorities experience physiological threat when White people offer positive feedback on their performance (Major et al., 2016; Mendes et al., 2008). If minorities are continuously suspicious of majority members’ attempts to change, this will certainly generate more distrust and negative contact experiences for members of both groups. Given the importance of contact experience in predicting and changing attitudes and behaviors toward gay people (MacInnis, Page-Gould, & Hodson, 2017; Pettigrew & Tropp, 2006; Reimer et al., 2017), anxiety and distrust from members of both groups would be unlikely to lead to prejudice reduction no matter how benign overcompensation may be. Furthermore, negative contact experience is a more powerful predictor of increased prejudice than positive contact experience in reducing prejudice (Barlow et al., 2012). In order to reduce prejudice via contact experience, interventions would ideally tackle the ambiguity surrounding majority group members’ positivity toward gay people.

The effectiveness of straight people’s positive behaviors is questionable because gay people do not believe that overcompensation is genuine and naïve perceivers do not interpret positive behaviors as directed toward gay people. There is a misperception and miscommunication of motivations such that Studies 4a and 4b found that those who were more internally motivated to be non-prejudiced behaved more positively toward gay targets, but gay people in Study 5 assumed straight people’s positivity could be stemming from anti-gay bias and the behavior is motivated by external rather than internal reasons. Another step toward building
intergroup harmony could therefore lie within understanding one another’s beliefs, motivations, and perspectives (Todd & Galinsky, 2014). These dissertation studies demonstrate that there is miscommunication of beliefs between straight and gay people, and perspective taking may offer a solution to bridge diverging minds.

More interestingly, people who were highly aware of their biases showed susceptibility to the cognitive load manipulation (Studies 4a and 4b). When not under cognitive load, bias awareness was unrelated to preference for gay targets, but the relationship was negative in direction when these individuals were placed under cognitive load. In order to overcompensate for one’s anti-gay bias, one must first and foremost be aware of said bias. As such, implicit anti-gay bias was negatively correlated with outgroup preference regardless of cognitive load because individuals are not always aware of their implicit bias (cf. Hahn et al., 2014). Effective prejudice reduction requires individuals to be aware of and be concerned about their biases (Devine, Forscher, Austin, & Cox, 2012; Devine & Monteith, 1993; Forscher, Mitamura, Dix, Cox, & Devine, in press; Monteith & Mark, 2005; Perry et al., 2015). This dissertation provides initial evidence that bias awareness plays a role in overcompensation. Future research should examine the role of bias awareness in prejudice reduction and intergroup relations more deeply.

Limitations and Future Directions

This dissertation defined overcompensation as positive behaviors enacted to regulate one’s anti-gay bias but this definition is admittedly very vague. How can researchers distinguish behaviors that are genuinely positive, overly positive, non-prejudiced, or simply polite? Moreover, does overcompensation necessarily have to be predicted by anti-gay bias? Although the overcompensation scales in Study 3 explicated that these positive behaviors (sometimes framed as overly positive) are specifically due to anti-gay bias, measuring overcompensation
behaviorally within interactions could be challenging. Mendes and Koslov (2013) conducted a series of studies on overcompensation in interracial interactions (though they used the term ‘overcorrection’). In one study, participants had to choose between equally likeable Black and White celebrities, and in another, participants were asked to pick from a number of mediocre résumés sent by Black and White applicants. In such cases, there are “objective” standards that one could measure against, and overcompensation could be reframed or redefined as behaviors that are overly positive (e.g., choosing more Black celebrities or applicants despite equal likeability or mediocrity). Studies 4a and 4b mirrored these techniques by forcing participants to choose between a gay profile and a straight profile, which were previously normed to be of equal likeability. These behaviors could exist without anti-gay bias if one defines overcompensation as overly positive behaviors. Overcompensation may be more difficult to measure in terms of nonverbal and verbal behaviors. Mendes and Koslov measured behaviors such as the frequency and duration of smiling, positive statements, and happy appearance. In this case, there is no objective standard to compare against; thus, it is difficult to determine if a behavior is simply positive or exaggerated. Study 1 of this dissertation suffers from the same limitation. Moving forward, researchers should exercise caution in their conceptual definition, operationalization, and measurement of overcompensation or positive behaviors more generally.

A potential method for reliably studying overcompensation is a performance-based measure called the Judgment Bias Task (Axt, Nguyen, & Nosek, under review). Previous work using this measure tasked White participants with admitting Black and White students into an honor society using limited information such as photos, GPA, and interview scores, and participants were more likely to admit Black students (Axt, in press; Axt, Ebersole, & Nosek, 2016). The reliability and objectivity of the task could be adapted to study overcompensation.
Sexual orientation was determined by self-identification in a demographic questionnaire at the end of each study. Straight participants in Studies 1 to 4 were those who identified as “Straight” and “Mostly Straight” and gay participants in Study 5 were those who self-identified as “Gay/ Lesbian.” It is possible that for those who identified as “Mostly Straight,” they could behave differently than participants who identified as “Straight” given that the former indicated that they could be attracted to someone of the same gender. As such, they may have more positive attitudes and/or behaviors toward gay people. Results did not differ when analyses were restricted to only those who identified solely as “Straight.” After all, only 6% of all straight participants (44 out of 699) in Studies 1 to 4 identified as “Mostly Straight.” Regardless, self-identification is only one method of measuring sexual orientation, and people sometimes do not wish to disclose their sexual orientation (Bailey et al., 2016); therefore, other measurements of sexual orientation or a more continuous self-report scale should be considered in the future.

All seven dissertation studies focused on attitudes and behaviors toward gay people specifically, and these results obviously do not allow for generalization to different members of the LGBTQ community. It is important to stress that not all sexual minorities share the same experience. For instance, bisexual people are evaluated more negatively than gay people (e.g., Burke et al., in press; Herek & McLemore, 2013). Samples in these studies were primarily White, and intersectional identities need to be considered as well. Transgender people (especially racial minorities or those with lower income) are more at risk of committing suicide than those who identify as gay, lesbian, and bisexual (Haas, Rodgers, & Herman, 2014). Because there is less attributional ambiguity involved, transgender people who face more overt discrimination and have more negative intergroup contact experience are unlikely to think that cisgender people overcompensate. Research on minorities’ perspectives is particularly lacking (Kunstman et al.,
2016), and it is pertinent that future research takes a more intersectional and inclusive approach.

Finally, all seven studies were conducted in the United States, a fairly pro-LGBTQ society. Five of the laboratory studies were conducted in Boston, Massachusetts, which is arguably one of the most LGBTQ-friendly city in the United States as it is the first city to legalize same-sex marriage. Overcompensation is unlikely to be a popular strategy in places without strict social norms or laws that prohibit expressions of prejudice (Crandall & Eshleman, 2003). Nonetheless, the political landscape in the United States seems to be changing with the recent 2016 presidential election. Future research could track the loosening of social norms that prohibits anti-gay bias and examine how this shift in norms can impact overcompensatory behaviors and beliefs among both gay and straight people.

**Conclusion**

This research contributes to a growing literature that has found a paradoxical effect of majority group members behaving positively toward minorities (e.g., Mendes & Koslov, 2013; Vorauer & Turpie, 2004). Traditionally, it has been assumed that negative attitudes produce negative reactions, evaluations, and behaviors (e.g., Callender, 2015; Dasgupta, 2004; Dovidio & LaFrance, 2013; Herek & McLemore, 2013; Stephan, 2014). However, the shifting dynamics of both minority demographics and cultural norms toward egalitarianism likely led to an adoption of a different strategy, namely to regulate or suppress one’s prejudice (e.g., Monteith et al., 2009; Crandall & Eshleman, 2003). Research in this latter area has largely focused on racial prejudice. The present research makes a novel contribution to the field by refining its definition, developing new measurements, taking an individual difference approach, focusing on anti-gay bias, and recruiting both straight and gay people. A comprehensive understanding of overcompensation is necessary to explore the various manifestations of prejudice, however benign they may seem.
References


Todd, A. R., & Galinsky, A. D. (2014). Perspective-taking as a strategy for improving intergroup


Table 1

Descriptive Statistics of Nonverbal Expressions toward the Fake Student according to Gender and Sexual Orientation Conditions in Study 1

<table>
<thead>
<tr>
<th>Nonverbal Expression</th>
<th>Mike</th>
<th>Emily</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Straight</td>
<td>Gay</td>
</tr>
<tr>
<td>Global Positivity</td>
<td>4.09 (.63)</td>
<td>4.61 (.83)</td>
</tr>
<tr>
<td>Speaking Time (s)</td>
<td>152.77 (78.66)</td>
<td>198.46 (94.65)</td>
</tr>
<tr>
<td>Smile</td>
<td>1.97 (2.26)</td>
<td>2.39 (2.40)</td>
</tr>
<tr>
<td>Self-touch</td>
<td>.98 (1.46)</td>
<td>.74 (1.44)</td>
</tr>
<tr>
<td>Looking Away</td>
<td>8.86 (1.69)</td>
<td>8.44 (2.02)</td>
</tr>
<tr>
<td>Fidget</td>
<td>2.24 (1.16)</td>
<td>2.21 (1.28)</td>
</tr>
<tr>
<td>Speech Dysfluency</td>
<td>4.12 (1.14)</td>
<td>3.91 (1.08)</td>
</tr>
<tr>
<td>Pauses</td>
<td>3.38 (1.37)</td>
<td>3.16 (1.21)</td>
</tr>
</tbody>
</table>

Note. Nonverbal coding was based on 171 participants’ videos. Standard deviations are in parentheses. Smile, self-touch, and looking away could range from 0 to 10. Global positivity, fidget, speech dysfluency, and pauses could range from 1 to 7.
Table 2

*Standardized Beta Weights Predicting Accuracy in Judging Sexual Orientation of Fake Student in Studies 2a and 2b*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Accuracy for judging sexual orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study 2a</td>
<td></td>
</tr>
<tr>
<td>Speaker Gender</td>
<td>.26*</td>
</tr>
<tr>
<td>MASD</td>
<td>-.17</td>
</tr>
<tr>
<td>Study 2b</td>
<td></td>
</tr>
<tr>
<td>Speaker Gender</td>
<td>.22*</td>
</tr>
<tr>
<td>Instruction Manipulation</td>
<td>.06</td>
</tr>
<tr>
<td>Positive Intergroup Contact</td>
<td>.21*</td>
</tr>
<tr>
<td>Negative Intergroup Contact</td>
<td>.08</td>
</tr>
</tbody>
</table>

*Note. MASD = Motivation to Avoid Sexual Orientation Disclosure. Speaker gender was coded as male = 0 and female = 1.

* +p ≤ .10. *p ≤ .05. **p ≤ .01.*
Table 3

*Factor Loadings of Overcompensation Beliefs Items in Study 3*

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. People sometimes act extra nice toward gay people so they can</td>
<td>.120</td>
<td>.759</td>
</tr>
<tr>
<td>compensate for any prejudice they might have.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. People smile when they see a gay couple even if they don’t fully</td>
<td>.049</td>
<td>.768</td>
</tr>
<tr>
<td>support gay marriage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. People try to keep an eye on their own ‘body language’ when</td>
<td>.302</td>
<td>.757</td>
</tr>
<tr>
<td>interacting with a gay person in order to make up for any negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>feelings they might have.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. People adjust their nonverbal behavior to look comfortable around gay</td>
<td>.130</td>
<td>.817</td>
</tr>
<tr>
<td>people even if they may feel uncomfortable inside.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. People sometimes go overboard in their friendliness toward gay</td>
<td>.071</td>
<td>.856</td>
</tr>
<tr>
<td>people in order to compensate for their unconscious biases against</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gay people.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Employers prefer to hire a gay job applicant over a straight job</td>
<td>.222</td>
<td>.663</td>
</tr>
<tr>
<td>applicant so that they can correct any negative biases they might have.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. I would act extra nice toward gay people so I can compensate for any</td>
<td>.881</td>
<td>.174</td>
</tr>
<tr>
<td>prejudice I might have.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I would smile when I see a gay couple even if I don’t fully support gay</td>
<td>.723</td>
<td>.097</td>
</tr>
<tr>
<td>marriage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. I would try to keep an eye on my own ‘body language’ when</td>
<td>.833</td>
<td>.225</td>
</tr>
</tbody>
</table>
interacting with a gay person in order to make up for any negative feelings I might have.

10. I would adjust my nonverbal behavior to look comfortable around gay people even if I may feel uncomfortable inside.

11. I would go overboard in my friendliness toward gay people in order to compensate for my unconscious biases against gay people.

12. I would prefer to hire a gay job applicant over a straight job applicant so that I can correct any negative biases I might have.

Note. Items falling on a factor are bolded. Items 1 to 6 capture beliefs about straight people’s overcompensatory behaviors in general; items 7 to 12 capture beliefs about straight participants’ own overcompensatory behaviors.
Table 4

*Descriptive Statistics and Cronbach’s Alpha for Measures in Study 3*

<table>
<thead>
<tr>
<th>Measures</th>
<th>M (SD)</th>
<th>Range</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Overcompensation Beliefs</td>
<td>4.26 (1.18)</td>
<td>1.00-7.00</td>
<td>.87</td>
</tr>
<tr>
<td>Personal Overcompensation Beliefs</td>
<td>2.88 (1.47)</td>
<td>1.00-7.00</td>
<td>.92</td>
</tr>
<tr>
<td>Attitudes toward Lesbians and Gay Men</td>
<td>2.76 (1.69)</td>
<td>1.00-7.00</td>
<td>.94</td>
</tr>
<tr>
<td>Bias Awareness Scale</td>
<td>2.82 (1.45)</td>
<td>1.00-6.25</td>
<td>.83</td>
</tr>
<tr>
<td>Internal Motivation Scale</td>
<td>5.30 (1.37)</td>
<td>1.00-7.00</td>
<td>.86</td>
</tr>
<tr>
<td>External Motivation Scale</td>
<td>3.13 (1.48)</td>
<td>1.00-6.60</td>
<td>.88</td>
</tr>
<tr>
<td>Comfort with Homosexuality</td>
<td>3.52 (1.72)</td>
<td>1.00-7.00</td>
<td>.95</td>
</tr>
<tr>
<td>Social Distance Scale</td>
<td>2.08 (1.34)</td>
<td>1.00-7.00</td>
<td>.92</td>
</tr>
<tr>
<td>Self-Monitoring Scale</td>
<td>4.82 (1.25)</td>
<td>1.00-7.00</td>
<td>.92</td>
</tr>
<tr>
<td>Public Self-Consciousness</td>
<td>4.66 (1.29)</td>
<td>1.00-7.00</td>
<td>.90</td>
</tr>
</tbody>
</table>
Table 5

*Correlations between Overcompensation Beliefs and Measures of Attitudes toward Gay People in Study 3*

<table>
<thead>
<tr>
<th>Measures</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. General Overcompensation Beliefs</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Personal Overcompensation Beliefs</td>
<td>.36***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Attitudes toward Lesbians and Gay Men</td>
<td>.24***</td>
<td>.22**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Bias Awareness Scale</td>
<td>.28***</td>
<td>.47***</td>
<td>.33***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Internal Motivation Scale</td>
<td>-.33***</td>
<td>-.13+</td>
<td>-.65***</td>
<td>-.38***</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. External Motivation Scale</td>
<td>.32***</td>
<td>.68***</td>
<td>.12</td>
<td>.48***</td>
<td>-.12</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Comfort with Homosexuality</td>
<td>.22**</td>
<td>.14+</td>
<td>.73***</td>
<td>.28***</td>
<td>-.55***</td>
<td>.12</td>
<td>-</td>
</tr>
<tr>
<td>8. Social Distance Scale</td>
<td>.21**</td>
<td>.20**</td>
<td>.79***</td>
<td>.32***</td>
<td>-.67***</td>
<td>.13+</td>
<td>.70***</td>
</tr>
</tbody>
</table>

*p ≤ .10. *p ≤ .05. **p ≤ .01. ***p ≤ .001
Table 6

*Factor Loadings of Comfort with Homosexuality Scale in Study 3*

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imagine yourself in the scenarios described below. Please rate how comfortable you would be in these scenarios:</td>
<td></td>
</tr>
<tr>
<td>1. Seeing a gay couple kiss in public.</td>
<td>.887</td>
</tr>
<tr>
<td>2. A family member coming out as gay/lesbian to you.</td>
<td>.852</td>
</tr>
<tr>
<td>3. A gay person touching and flirting with you.</td>
<td>.753</td>
</tr>
<tr>
<td>4. A same-gender friend telling you his/her gay sexual experiences.</td>
<td>.874</td>
</tr>
<tr>
<td>5. Attending a gay pride parade.</td>
<td>.869</td>
</tr>
<tr>
<td>6. Going to a gay bar.</td>
<td>.829</td>
</tr>
<tr>
<td>7. Attending a gay wedding.</td>
<td>.868</td>
</tr>
<tr>
<td>8. Being mistaken as gay/lesbian.</td>
<td>.814</td>
</tr>
<tr>
<td>9. Talking about attractiveness of celebrities who are same-gender as you.</td>
<td>.777</td>
</tr>
<tr>
<td>10. Seeing a gay sex scene on TV.</td>
<td>.830</td>
</tr>
</tbody>
</table>

*Note.* Because only a single component was extracted, the factor loadings here are from the principal components analysis without varimax rotation. In the study, higher scores indicate more comfort within the scenarios, but the scale was reversed for presentation in the Results section to be consistent with other attitudinal measures.
Table 7

*Descriptive Statistics and Cronbach’s Alpha for Measures in Studies 4a and 4b*

<table>
<thead>
<tr>
<th>Measures</th>
<th>$M (SD)$</th>
<th>Range</th>
<th>Cronbach’s $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study 4a</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outgroup Preference</td>
<td>.53 (.31)</td>
<td>.00-1.00</td>
<td>.51</td>
</tr>
<tr>
<td>Bias Awareness Scale</td>
<td>3.68 (1.29)</td>
<td>1.00-6.25</td>
<td>.77</td>
</tr>
<tr>
<td>Implicit Anti-Gay Bias</td>
<td>.58 (.44)</td>
<td>-1.50-1.30</td>
<td>-</td>
</tr>
<tr>
<td>Internal Motivation Scale</td>
<td>5.70 (.99)</td>
<td>2.00-7.00</td>
<td>.84</td>
</tr>
<tr>
<td>External Motivation Scale</td>
<td>3.74 (1.18)</td>
<td>1.00-7.00</td>
<td>.80</td>
</tr>
<tr>
<td><strong>Study 4b</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outgroup Preference</td>
<td>.40 (.30)</td>
<td>.00-1.00</td>
<td>.43</td>
</tr>
<tr>
<td>Bias Awareness Scale</td>
<td>3.88 (1.17)</td>
<td>1.00-6.50</td>
<td>.75</td>
</tr>
<tr>
<td>Implicit Anti-Gay Bias</td>
<td>.65 (.36)</td>
<td>-.37-1.29</td>
<td>-</td>
</tr>
<tr>
<td>Internal Motivation Scale</td>
<td>5.29 (1.06)</td>
<td>1.60-7.00</td>
<td>.81</td>
</tr>
<tr>
<td>External Motivation Scale</td>
<td>3.33 (1.19)</td>
<td>1.20-6.40</td>
<td>.81</td>
</tr>
</tbody>
</table>

*Note.* Outgroup preference was the number of trials that participants selected a gay student over a straight student divided by the total possible trials (four).
Table 8

*Correlations among the Measures in Studies 4a and 4b*

<table>
<thead>
<tr>
<th>Measures</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Study 4a</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Outgroup Preference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Bias Awareness Scale</td>
<td>-.19⁺</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Implicit Anti-Gay Bias</td>
<td>-.13</td>
<td>.32**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Internal Motivation Scale</td>
<td>.26**</td>
<td>-.17</td>
<td>-.25*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. External Motivation Scale</td>
<td>-.03</td>
<td>.48***</td>
<td>-.01</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td><strong>Study 4b</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Outgroup Preference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Bias Awareness Scale</td>
<td>-.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Implicit Anti-Gay Bias</td>
<td>-.45***</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Internal Motivation Scale</td>
<td>.36***</td>
<td>.01</td>
<td>-.26**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. External Motivation Scale</td>
<td>-.27**</td>
<td>.25**</td>
<td>.27**</td>
<td>-.09</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* All correlations displayed are collapsed across cognitive load conditions. Outgroup preference was the number of trials that participants selected a gay student over a straight student divided by the total possible trials (four).

⁺⁺⁺p ≤ .10. *p ≤ .05. **p ≤ .01. ***p ≤ .001.
Table 9

*Standardized Beta Weights Predicting Outgroup Preference for Gay Student in Studies 4a and 4b*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Study 4a</th>
<th>Study 4b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Load Condition</td>
<td>-.11</td>
<td>.12</td>
</tr>
<tr>
<td>Bias Awareness</td>
<td>.07</td>
<td>.06</td>
</tr>
<tr>
<td>Implicit Bias</td>
<td>-.17</td>
<td>-.35**</td>
</tr>
<tr>
<td>Internal Motivation</td>
<td>.28*</td>
<td>.34**</td>
</tr>
<tr>
<td>External Motivation</td>
<td>-.18</td>
<td>-.12</td>
</tr>
<tr>
<td>Cognitive Load x Bias Awareness</td>
<td>-.29</td>
<td>-.11</td>
</tr>
<tr>
<td>Cognitive Load x Implicit Bias</td>
<td>.20</td>
<td>-.00</td>
</tr>
<tr>
<td>Cognitive Load x Internal Motivation</td>
<td>-.04</td>
<td>-.14</td>
</tr>
<tr>
<td>Cognitive Load x External Motivation</td>
<td>.27</td>
<td>-.04</td>
</tr>
</tbody>
</table>

*Note.* Cognitive load condition was dummy-coded as 0 = control and 1 = cognitive load. Bias awareness, implicit bias, internal motivation, and external motivation were mean-centered. All interaction terms used the mean-centered variables.

+*p ≤ .10. *p ≤ .05. **p ≤ .01.
Table 10

*Meta-Analytic Results by Cognitive Load Condition and Individual Difference Measures in Studies 4a and 4b*

<table>
<thead>
<tr>
<th>Measures</th>
<th>No Cognitive Load</th>
<th>Cognitive Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M r</td>
<td>Combined Z</td>
</tr>
<tr>
<td>Bias Awareness</td>
<td>-.06</td>
<td>-.57</td>
</tr>
<tr>
<td>Implicit Bias</td>
<td>-.35</td>
<td>-3.32***</td>
</tr>
<tr>
<td>Internal Motivation</td>
<td>.39</td>
<td>3.81***</td>
</tr>
<tr>
<td>External Motivation</td>
<td>-.18</td>
<td>-1.73+</td>
</tr>
</tbody>
</table>

*Note. M r = weighted mean correlation across Studies 4a and 4b.*

\[ ^{+} p \leq .10. * p \leq .05. ** p \leq .01. *** p \leq .001. \text{All two-tailed.} \]
Table 11

*Descriptive Statistics and Cronbach’s Alpha for Measures in Study 5 (Gay Participants)*

<table>
<thead>
<tr>
<th>Measures</th>
<th>M (SD)</th>
<th>Range</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Overcompensation Perception</td>
<td>4.10 (.95)</td>
<td>1.33-6.17</td>
<td>.78</td>
</tr>
<tr>
<td>Personal Overcompensation Perception</td>
<td>3.69 (1.05)</td>
<td>1.00-6.17</td>
<td>.82</td>
</tr>
<tr>
<td>Suspicion of Motives Index</td>
<td>-.23 (1.39)</td>
<td>-3.80-3.80</td>
<td>-</td>
</tr>
<tr>
<td>Positive Intergroup Contact</td>
<td>5.25 (.81)</td>
<td>3.00-7.00</td>
<td>.81</td>
</tr>
<tr>
<td>Negative Intergroup Contact</td>
<td>2.73 (1.04)</td>
<td>1.00-6.80</td>
<td>.88</td>
</tr>
<tr>
<td>Community LGBT Friendliness</td>
<td>5.18 (.95)</td>
<td>2.00-6.60</td>
<td>.74</td>
</tr>
</tbody>
</table>
Table 12

*Correlations among the Measures in Study 5 (Gay Participants)*

<table>
<thead>
<tr>
<th>Measures</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Overcompensation Perception</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Personal Overcompensation Perception</td>
<td>.74***</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Suspicion of Motives Index</td>
<td>.34***</td>
<td>.33***</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Positive Intergroup Contact</td>
<td>.01</td>
<td>-.10</td>
<td>-.17*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>5. Negative Intergroup Contact</td>
<td>-.04</td>
<td>.04</td>
<td>.06</td>
<td>-.50***</td>
<td>-</td>
</tr>
<tr>
<td>6. Community LGBT Friendliness</td>
<td>.05</td>
<td>.11</td>
<td>.05</td>
<td>.45***</td>
<td>-.32***</td>
</tr>
</tbody>
</table>

*p ≤ .05. ***p ≤ .001.*
Figure 1. Lens model of positive behaviors and accuracy for male speakers in Studies 2a and 2b. 

Note. Correlations are based on 40 male speakers. Condition refers to the sexual orientation of the fake student being addressed by the speaker in Study 1 (0 = straight; 1 = gay). Judgment refers to Studies 2a and 2b perceivers’ judgments of the fake student’s sexual orientation (0 = straight; 1 = gay). Global positivity is the average of five impression ratings (i.e., smile a lot, positive, engaged, relaxed, and assertive) made by trained coders based on muted (nonverbal) and unmuted (full channel) videos.

\[ r_{p} \leq .10, **p_{\leq .01} \]
**Figure 2.** Lens model of positive behaviors and accuracy for female speakers in Studies 2a and 2b.

*Note.* Correlations are based on 40 female speakers. See notes for Figure 1.
Figure 3. An example profile of a straight student used in Studies 4a and 4b.
Age: 19  Gender: Male
Sexual Orientation: Gay  Year at Northeastern: 2nd
Major: Chemistry

Where are you from? New Jersey

If money weren't an issue, where would you go on vacation? Spain

What's your favorite place to eat on or around campus? Taco Bell

What's your favorite food? Chinese food

Do you prefer Macs or PCs? PCs

How many siblings do you have, if any? One

Do you have any pets? No, I'm allergic to everything

Did/do you play any musical instruments? No

What do you like to do in your free time? Listen to music or watch Netflix

Would you want to stay in Boston after graduation? No

*Figure 4.* An example profile of a gay student used in Studies 4a and 4b.