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Moving Beyond "Born This Way": Reducing Homonegative Prejudice and Increasing Support for Gay and Lesbian Civil Rights by Targeting Multiple Beliefs about Sexual Orientation

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Moving Beyond "Born This Way": Reducing Homonegative Prejudice and Increasing Support for Gay and Lesbian Civil Rights by Targeting Multiple Beliefs about Sexual Orientation

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DEDICATION

This thesis is dedicated to all of the LGBTQ youth I have ever had the privilege of working with at Kaleidoscope Youth Center in Columbus, Ohio. Always remember that you are strong, you are loved, and you are perfect just the way you are.

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ABSTRACT

We extended and applied the findings of Grzanka, Zeiders, and Miles's (2016) latent profile analysis of sexual orientation belief patterns by conducting an intervention study assessing how targeting different sexual orientation beliefs may be more effective in reducing homonegativity than interventions that focus only on biogenetic ideas about sexual orientation. Participants were assigned to one of four conditions and read research essays addressing different lay beliefs about sexual orientation as measured by the Sexual Orientation Beliefs Scale's (SOBS; Arseneau, Grzanka, Miles, & Fassinger, 2013) subscales (Discreteness, Informativeness, Homogeneity, and Naturalness). One essay contained only scientific research regarding Naturalness ("Born This Way" condition), a second essay contained scientific research regarding Discreteness, Informativeness, and Homogeneity ("Social Constructionism" condition), and a third essay contained scientific research regarding all four dimensions ("Hybrid Essentialism" condition). The fourth condition was a control condition. We predicted that participants randomly assigned to the two conditions that targeted multiple sexual orientation beliefs would exhibit a greater reduction in their beliefs in the informativeness, discreteness, and homogeneity of sexual orientation categories, would demonstrate greater reductions in their levels of homonegative prejudice, and would report greater increases in their support for gay and lesbian civil rights. Sexual orientation beliefs moved in expected directions after the interventions for all conditions. While there was a main effect of time on homonegative prejudice, such that homonegative prejudice decreased from Time 1 to Time 2, there was no main effect of condition. There were no changes in support for gay and lesbian civil

rights. Implications for the development of more comprehensive educational and social interventions designed to promote equality and social justice for sexual minorities are discussed.

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CHAPTER 1

INTRODUCTION

Negative social, psychological, and health outcomes for lesbian, gay, and bisexual (LGB) individuals are pervasive and have been well-documented. For example, sexual minority adults are more likely to attempt suicide than their heterosexual counterparts, such that 1 in 5 LGB people report on community-based surveys that they have attempted suicide at least once (Hottes, Bogaert, Rhodes, Brennan, & Gesink, 2016). Sexual minority adults are at a greater risk for engaging in self-harm behaviors (e.g., cutting) and are more likely to abuse alcohol and other drugs (Cochran, Ackerman, Mays, & Ross, 2004; King et al., 2008). LGB individuals are also at greater risk for developing psychological disorders, such as anxiety and depression (King et al., 2008; Mays & Cochran, 2001; Meyer, 2003). These negative outcomes are arguably worse for LGB youth. Rates of suicidality, which refers to suicidal thoughts, plans, and attempts, are higher in sexual minority youth and young adults than their heterosexual peers (Coker, Austin, & Schuster, 2010). A meta-analysis revealed that sexual minority youth reported past suicidality at rates more than twice those of their heterosexual peers (Marshal et al., 2011). Augelli et al. (2005) found that 1 in 3 LGB youth reported at least one suicide attempt, and half of those attempts were deemed serious based on lethality. Sexual minority youth homelessness is pervasive, such that a national survey found that 26% of all youth utilizing housing programs identify as LGB (Durso & Gates, 2012). These youth are also at increased risk for substance abuse and developing substance abuse disorders (Marshal et al., 2008).

These inequities can largely be explained by the stigma, prejudice, and discrimination that LGB individuals must endure on a regular basis (Meyer, 2003). According to Meyer, these

factors create stressful social environments that lead to poorer mental health outcomes for sexual minorities, a phenomenon he termed *minority stress*. A variety of these stressors have been well-documented in the literature. For example, a meta-analysis found that LGB individuals reported substantial experiences of victimization (Katz-Wise & Hyde, 2012). Fifty-five percent of sexual minority individuals reported being the victim of verbal harassment, and 44% reported experiencing sexual harassment. Lesbians and gay men report being victims of hate-motivated crimes at rates higher than racial and religious minorities (Stotzer, 2012). Gay men are especially at risk of being targeted; 26 in 100,000 gay men report they were the victim of a hate-motivated crime. Nearly half of LGB individuals report experiencing discrimination (Katz-Wise & Hyde, 2012). This is prevalent in the workplace, where LGB individuals are regularly denied employment based on their sexual orientation (Badgett, Lau, Sears, & Ho, 2007) and do not have legal protections in most states (Human Rights Campaign, 2017). LGB individuals frequently experience microaggressions, which are everyday behavioral, verbal, or environmental indignities conveying derogatory, hostile, or negative insults and slights towards members of oppressed groups that can be intentional or unintentional (Nadal, 2008), in the workplace (Galupo & Resnick, 2016) and in psychotherapy (Shelton & Delgado-Romero, 2011). Homeless LGB youth frequently report that they run away from home because their families reject them (Durso & Gates, 2012). In many cases, they report their parents forced them out. According to the *2011 National School Climate Survey*, more than 80% of lesbian, gay, bisexual, and transgender[1] (LGBT) youth reported that, in the past year, they were verbally harassed because

[1] *Note:* Our study does not address beliefs about gender identity. However, we do cite research in this paper that does not separate the experiences of lesbian, gay, and bisexual individuals and transgender individuals.

of their sexual orientation (Kosciw, Greytak, Bartkiewicz, Boesen, & Palmer, 2012). The majority reported that they felt unsafe at school because of their sexual orientation, as well. Sadly, rates of peer victimization have been increasing over time (Katz-Wise & Hyde, 2012). For all these reasons, finding ways to reduce homonegative prejudice and increase support for gay and lesbian civil rights are essential.

The "Born This Way" Argument of Sexual Orientation

Over the last 30 years, Americans' views on sexual orientation have dramatically shifted. In a national poll, 65% of respondents reported believing that "being homosexual" is not a choice and is "just the way they are" (Washington Post-ABC News, 2014). According to the Pew Research Center, Americans are developing more accepting views of homosexuality and of the LGBT community (Pew Research Center, 2017a). In 2013, more than 9 in 10 LGBT-identifying adults reported that they felt society has become more accepting of them in the last decade. In 2016, 63% of Americans reported that society should accept homosexuality, compared with 51% a decade earlier. Support for same-sex marriage among Americans is higher than ever (62% support versus 32% oppose), reflecting a seven percentage point increase in just one year (Pew Research Center, 2017b). For the first time, the majority of Republicans and Baby Boomers support same-sex marriage. The change in public opinion has been rapid, given that more Americans opposed than supported same-sex marriage as recently as 2010.

This begs the question: how have such dramatic cultural shifts occurred? Part of the answer is the impact of conversion therapy pseudoscience on the focus of scientific research and the Gay Rights Movement (Waidzunas, 2015). According to Waidzunas, conversion therapies

that claim to "cure" people of being gay have presented themselves as a form of science in an attempt to prove their legitimacy. While the "evidence" used to back up their claims is certainly flawed, this strategy has had a powerful effect on the scientific community for the last 30 years. Conversion therapy drove science to focus on how sexual orientation is innate, natural, and biological and, thus, not a choice or an attribute of oneself that can be changed. Broader social forces further contributed to this shift. For example, feminist theories of "biomedicalization" (Clarke, 2010) state that social life (including attitudes, behaviors, and knowledge itself) is organized on biogenetic terms that are derived from advanced biotechnologies of the body.

A plethora of research on this topic provides evidence for Waidzunas' argument. Prior research on sexual orientation has largely centered on finding evidence that sexual orientation is biological and innate (Bailey et al., 2016). For example, multiple lines of research have focused on heredity, extensively investigating the genetic structures of gay men (e.g., Sanders et al., 2015; Yu et al., 2015) in the pursuit of a "gay gene" to show us that sexual orientation is inherited (e.g., Allen, 2014; Terry, 1999). Other work has investigated the increased likelihood that sexual minorities will have a sibling (e.g., Bailey, Pillard, Neale, & Agyei, 1993; Pillard, Poumadere, & Carretta, 1982) or a twin (e.g., Whitam, Diamond, & Martin, 1993) who is also gay as another way to show that sexual orientation is inherited. Endocrinology studies have shown that there is something biologically different about gay men based on the ways they physiologically react to pheromones (e.g., Savic, Berglund, & Lindström, 2005) and estrogen (e.g., Gladue, Green, & Hellman, 1984). Studies of the brain have investigated the ways in which sexual minorities' brains differ in structure from the typical heterosexual brain (e.g., LeVay, 1991; Savic & Lindstrom, 2008). These are just a few of many examples.

To an extent, this strategy is effective. Previous research regarding heterosexuals' beliefs about sexual orientation and their association with attitudes towards sexual minorities has focused primarily on the belief that sexual orientation is natural (Haslam & Levy, 2006; Hegarty & Pratto, 2001; Jayaratne et al., 2006). This research suggests that believing that sexual orientation is natural is, in fact, associated with positive attitudes towards sexual minorities.

Psychological Essentialism

Beliefs that sexual orientation category membership is natural reflect psychological essentialism. According to Bohan (1993), essentialist views postulate that qualities and traits are "resident within the individual" (p. 6). Essentialist models view aspects of the person as "fundamental attributes that are conceived as internal, persistent, and generally separate from the on-going experience of interaction with the daily sociopolitical contexts of one's life" (p. 7). Social constructionism, however, argues that a quality or trait is "not resident in the person but exists in those interactions that are socially construed" (p. 7). Essentialism and constructionism are often thought of as polar opposite beliefs about social categories. While an essentialist would argue that sexual orientation category membership is natural, biological, and fixed, a social constructionist would argue that the labels used to describe sexual orientations are developed by humans and are therefore different across cultures, times, and locations (Bohan, 1996).

The essentialist argument of sexual orientation has consistently been invoked in appeals for equal rights. Specifically, beliefs about the naturalness of being a sexual minority have frequently been used to appeal for equal treatment in the United States (Hacking, 2002; Osmundson, 2011). Arguably, the most notable example in popular culture is the Lady Gaga song *Born This Way* (Gaga, 2011), arguing that sexual minority individuals (and, presumably,

heterosexuals) are born with their sexual orientation. Macklemore, Ryan Lewis, and Mary Lambert echo this same message in the song *Same Love* (Haggerty, Lewis, & Lambert, 2012) with the lyrics, "And I can't change / Even if I tried / Even if I wanted to."

The Need to Move beyond "Born This Way"

At first, the rapid shift in Americans' views on sexual orientation over the last 30 years (Pew Research Center, 2017a, 2017b; Washington Post-ABC News, 2014) may make one suspect that the essentialist "born this way" argument is the most effective way to reduce homonegative prejudice and increase support for gay and lesbian civil rights. However, many have challenged this notion, quite convincingly. Using U.S. legal rulings regarding LGB rights and scientific research as evidence, Diamond and Rosky (2016) have argued that the immutable nature of sexual orientation should no longer be employed as an argument for the rights of sexual minorities. They claim that these arguments are unscientific given that we now know that same-sex attractions naturally change for some individuals over time (Diamond, 2008). Diamond and Rosky also believe these arguments are unnecessary now, given that there have now been U.S. legal decisions that have protected the rights of LGB individuals on other grounds. They also hold that arguments based on the immutable nature of sexual orientation are unfair because they suggest that other-sex attractions are superior to same-sex attractions. These arguments also favor LGB individuals who experience their sexuality as unchanging over those who experience sexual fluidity.

Similarly, Osmundson (2011) argues that the evidence that sexual orientation is biological in origin is inconclusive. He discusses examples of legal cases in which the courts have used scientific data as evidence to deny lesbian, gay, bisexual, and transgender people

rights. He warns against using biology to argue for minority rights, stating, "A biological understanding of sexuality may actually serve to further marginalize groups for which sexuality contains some aspects of choice and lead to reclassification of different identities as diseases" (Osmundson, 2011, p. 25). Ward (2015) also posits that sexual orientation is not strictly biological in origin. She explores the unique social spaces where heterosexual white men are able to have sex with other heterosexual white men without being labeled as gay. Ward argues that these sexual acts are evidence of the complexity and fluidity that embodies all human sexual desire. In her book *The Tolerance Trap*, Walters (2014) criticizes the "born this way" strategy, arguing that all sexual minorities have really gained is tolerance. Gay people have not been fully integrated into American life. The LGB community has settled for tolerance and acceptance instead of full civil rights in the U.S.

This begs the question: what if the "born this way" approach is not actually the most effective strategy in decreasing heterosexist attitudes towards sexual minorities? Biogenetic ideas regarding the origins of same-sex desire are dominant in social justice advocacy and educational programing about LGB rights (Osmundson, 2011). What if this argument is merely echoing what we know that most people, especially younger people in the U.S., already believe? The majority of Americans already believe that sexual orientation is not a choice (Washington Post-ABC News, 2014), yet heterosexism and opposition to gay and lesbian civil rights remains. What if other beliefs about sexual orientation have a stronger influence on negative evaluations of sexual minorities, such that reducing these beliefs may have an impact on homonegative prejudice and support for gay and lesbian civil rights?

While it is true that, in contrast with those who still believe sexual orientation to be a choice, people who believe sexuality to be inborn hold more positive attitudes toward sexual minorities (Haslam & Levy, 2006; Hegarty & Pratto, 2001; Jayaratne et al., 2006), this is only one piece of the story. Interestingly, psychological research shows that holding essentialist beliefs about other social identities (e.g., race and gender) usually corresponds with putative judgment (Heyman & Giles, 2006) and negative stereotyping (Bastian & Haslam, 2006; Haslam, Rothschild, & Ernst, 2000). This trend is generally consistent across research on race and racism (Williams & Eberhardt, 2008) and gender and sexism (Haslam et al., 2000). Haslam and Levy (2006), however, found that endorsing the belief in the discreteness of sexual orientation (an essentialist belief that sexual orientation categories are fully distinct and that individuals cannot be members of multiple sexual orientation groups) was actually associated with homonegative attitudes. This clearly suggests that beliefs about sexual orientation are far more complicated than a mere one-dimensional conceptualization of essentialist beliefs focusing on biological determinants of sexual orientation.

Hegarty (2010) found that college students reported more positive attitudes towards sexual minorities after taking an LGBT studies course that did not include the innateness of sexual orientation. He employed a unique cross-lagged study design to conduct the most in-depth investigation of changes in homonegative prejudice and essentialist beliefs resulting from a human sexuality course to date. According to Hegarty, social psychologists argue that learning about theories attributing sexual orientation to biological factors causes reduced homonegative prejudice among heterosexual students who take human sexuality classes. While prejudicial attitudes certainly tend to decrease after heterosexual students take these courses, he suggested

that researchers were inaccurately inferring that learning about biological theories of sexual orientation was the cause of the change they were seeing.

In his study, Hegarty (2010) collected data from 36 psychology students taking a seminar on LGBT psychology that did not include biological theories of sexual orientation. On the first and last days of class, he gave the students questionnaires assessing their interest in LGBT-related topics, their homonegative prejudice, essentialist beliefs pertaining to sexual orientation, demographics, and, on the post-seminar survey only, an open-ended question asking students to describe how they believed their attitudes and beliefs changed as a result of the course. The students reported reduced prejudicial attitudes by the end of the course, as well as changes in essentialist beliefs. Students also reported reduced beliefs that sexual orientation categories have clear boundaries and defining features and are caused by genes and hormones. Students also reported that they found learning about sexual fluidity to be liberating. These findings suggest that teaching biological theories of sexual orientation in human sexuality courses is not the cause of prejudice reduction as social psychologists often believe. However, it must be noted that Hegarty's sample was small, homogenous (more than 80% white females), and subject to self-selection bias, given that students choosing an optional course in LBGT psychology may have already been more open-minded regarding LGBT issues and ready to work towards reducing their homonegative prejudices. It should be noted that the current study addresses all of these limitations.

The Sexual Orientation Beliefs Scale (SOBS)

Arseneau et al. (2013) developed the Sexual Orientation Beliefs Scale (SOBS) in order to understand a wider range of beliefs about sexual orientation than have been previously studied.

In addition to essentialist beliefs, Arseneau et al. created the SOBS to also examine social constructionist beliefs (i.e., that sexual orientation categories are uniquely constructed in specific socio-historical contexts) and constructivist beliefs (i.e., that individuals have agency in determining their own sexual orientation category membership) in both heterosexual and LGBT populations. Items on the SOBS reflected social constructionist (e.g., "Social and environmental factors are the main basis of an individual's sexual orientation") and constructivist (e.g., "Individuals choose their sexual orientation") themes. Arseneau et al. discovered a multidimensional framework of sexual orientation beliefs that highlighted distinctions between multifarious beliefs. This included the discreteness, homogeneity, naturalness, and informativeness of sexual orientation categories. The Discreteness dimension of the SOBS measures the belief that sexual orientation categories are distinct. The Homogeneity dimension measures the belief that individuals within any given sexual orientation category (e.g., people who identify as "gay") are all the same. The Naturalness dimension measures the belief that people are born with their sexual orientation. The Informativeness dimension measures the belief that knowing one's sexual orientation tells someone a lot about who that person is. Interestingly, these categories built upon Haslam and Levy (2006) explanation of universality, immutability, and discreteness as different forms of essentialist beliefs. The SOBS is the first psychometrically validated scale to measure social constructionist and constructivist beliefs about sexual orientation in the context of psychological essentialism. However, Arseneau et al. did not explain how these beliefs may predict heterosexuals' attitudes towards sexual minorities.

The SOBS has enjoyed recent uptake by other researchers, as well. Morandini, Blaszczynski, Ross, Costa, and Dar-Nimrod (2015) used the SOBS to examine the implications

essentialist beliefs about sexual orientation have for psychological well-being, internalized homonegativity, and sexual identity uncertainty in a sample of gay men. Facets of essentialism had mixed implications for all three of these variables in gay men. Those who viewed sexual orientation as existing in discrete categories and as biologically-based reported less sexual identity uncertainty. While biological beliefs were associated with lower internalized homonegativity, discreteness beliefs predicted more internalized homonegativity among gay men. In a similar study, Morandini, Blaszczynski, Costa, Godwin, and Dar-Nimrod (2017) used the SOBS to investigate how sexual orientation beliefs were associated with internalized sexual stigma, sexual orientation uncertainty, and psychological well-being in lesbian and bisexual women. Overall, they discovered similar implications of sexual orientation beliefs for lesbian and bisexual women. Endorsing naturalness beliefs predicted lower internalized-stigma for both groups, while endorsing discreteness beliefs predicted greater internalized stigma. The SOBS has also been used in a study examining associations of different psychosocial variables with following different church-based approaches for dealing with same-sex attractions among current and former Mormons (Dehlin, Galliher, Bradshaw, & Crowell, 2014).

Using the version of the SOBS appropriate for both heterosexuals and sexual minority respondents (Arseneau et al., 2013), Grzanka et al. (2016) investigated sexual orientation belief patterns using latent profile analysis. They discovered similar response patterns across two samples of primarily heterosexual college students (n = 379; n = 266). Two groups emerged in the first sample, while three groups emerged in the second sample. Two of the groups emerged in both samples. One group was high on all four SOBS subscales (Discreteness, Homogeneity, Naturalness, and Informativeness). The other group was only high on the Naturalness subscale

composed of items stressing the innateness of sexual orientation. The second sample included responses to attitudinal measures, including the Modern Homonegativity Scale – Gay Men (Morrison & Morrison, 2002). Interestingly, the scores on the Naturalness dimension were high in both the group with lower and the group with higher levels of homonegativity. However, participants in the group with lower levels of homonegativity reported low scores on the other three dimensions (Discreteness, Homogeneity, and Informativeness). These findings suggest that most people may, in fact, already accept the "born this way" argument, even when they have higher levels of heterosexist attitudes. However, endorsing these three other types of beliefs is associated with greater heterosexism. These results extend previous research findings (Haslam & Levy, 2006; Hegarty & Pratto, 2001) and complement recent studies (Hubbard & Hegarty, 2014) suggesting that further research on beliefs about sexual orientation is warranted. In a similar vein as Hegarty (2010), these findings suggest that certain forms of essentialist beliefs – namely the relative discreteness, homogeneity, and informativeness of social categories – may be more related to negative attitudes towards sexual minorities.

The Current Study

The current study further investigates how sexual orientation beliefs (i.e., discreteness, homogeneity, naturalness, and informativeness of sexual orientation categories) may affect attitudes towards sexual minorities and how interventions targeting different types of sexual orientation beliefs may be more or less effective in reducing LGB prejudice and increasing support for civil rights for the LGB community. We extended and applied the findings of Grzanka et al. (2016) by conducting an intervention study assessing how targeting different sexual orientation beliefs may be more effective in reducing homonegativity than interventions

that focus only on biogenetic ideas about sexual orientation. We did so by developing three interventions in the form of research essays addressing different lay beliefs about sexual orientation as measured by the SOBS's (Arseneau et al., 2013) subscales (Discreteness, Informativeness, Homogeneity, and Naturalness). One intervention contained only scientific research regarding Naturalness ("Born This Way" condition), a second intervention contained scientific research regarding Discreteness, Informativeness, and Homogeneity ("Social Constructionism" condition), and a third intervention contained scientific research regarding all four dimensions ("Hybrid Essentialism" condition). We then examined each intervention's efficacy in reducing homonegative prejudice and increasing support for gay and lesbian civil rights. The present study assessed attitudes towards sexual minorities 6 to 8 days before and immediately after participants were exposed to one of the three essays summarizing scientific evidence supporting different beliefs about sexual orientation. In doing so, we aimed to inform the development of more comprehensive educational and social interventions designed to promote equality and social justice for sexual minorities by moving beyond "born this way."

Hypotheses. In light of Grzanka et al. (2016) findings, we formed three hypotheses. First, we predicted that participants randomly assigned to the two conditions that targeted multiple sexual orientation beliefs would exhibit a greater reduction in their beliefs in the informativeness, discreteness, and homogeneity of sexual orientation categories than those assigned to the "Born This Way" and control conditions. Second, we expected that these participants would also demonstrate greater reductions in their levels of homonegative prejudice than the other conditions. Third, we hypothesized that those assigned to these two conditions

would also report increased support for gay and lesbian civil rights relative to the “Born This Way” and control conditions.

CHAPTER 2

METHODS

Participants

Participants were recruited from Amazon's Mechanical Turk (MTurk) service. To be eligible, participants were required to: (1) have a valid MTurk worker account, (2) be at least 18 years of age at the time of the first survey, (3) identify as heterosexual, (4) be able to read English, and (5) access the surveys from a user domain within the U.S. The original sample was comprised of 279 participants, 56 (20%) of whom were excluded for failing to complete both time points. Another 19 were excluded for answering more than one reading comprehension check question (in response to their assigned essay) incorrectly. An additional 2 were excluded because they incorrectly responded to more than one validity check item at either time point, and 1 was excluded because they identified their sexual orientation as bisexual. Therefore, the final sample for analysis was 201 participants with a mean age of 41.04 years (*SD* = 12.97, range = 20 to 82).

In terms of gender, 116 (57.7%) identified as women, 85 (42.3%) men, 0 (0.0%) transgender, 9 (4.5%) cisgender, and 0 (0.0%) other. Regarding race/ethnicity, 158 (78.6%) identified as White/European American, 19 (9.5%) Black/African American, 18 (9.0%) Asian/Asian American, 9 (4.5%) Latino/Latina/Latinx, 2 (1.0%) Middle Eastern/Arab, 4 (2.0%) Native American/Alaskan Native, 0 (0.0%) Native Hawaiian/Pacific Islander, and 2 (1.0%) other. Because identifying as heterosexual was part of the inclusion criteria, 100% of the final sample for analysis identified as heterosexual. For religious affiliation, 62 (30.8%) identified as Protestant, 30 (14.9%) Catholic, 1 (0.5%) Mormon, 1 (0.5%) Jehovah's Witness, 4 (2.0%)

Orthodox Christian, 17 (8.5%) other Christian, 5 (2.5%) Jewish, 5 (2.5%) Buddhist, 4 (2.0%) Muslim, 2 (1.0%) Hindu, 2 (1.0%) affiliated with another world religion, 71 (35.3%) unaffiliated, and 7 (3.5%) not sure. Religiosity was measured on a scale from 1 (*LEAST religious and/or spiritual*) to 10 (*MOST religious and/or spiritual*) (M = 4.62, SD = 3.18). Social class was measured on a scale from 1 (*LOWER class*) to 10 (*UPPER class*) (M = 5.09, SD = 1.81). In terms of political affiliation, 88 (43.8%) identified as Democrat, 37 (18.4%) Republican, 2 (1.0%) Green, 14 (7.0%) Libertarian, 46 (22.9%) independent/unaffiliated, 1 (0.5%) other, and 13 (6.5%) none. Mean conservativeness on a scale from 1 (*Most PROGRESSIVE / LIBERAL*) to 10 (*Most CONSERVATIVE)* was 4.61 (SD = 2.60). Regarding disability status, 19 (9.5%) identified as having a disability, and 14.0 (7.0%) identified as veterans.

Experimental Manipulation

Intervention essays. The authors wrote three essays summarizing research related to different lay beliefs about sexual orientation as measured by the SOBS's (Arseneau et al., 2013) subscales (i.e., Discreteness, Informativeness, Homogeneity, and Naturalness). Each essay was 800 to 850 words in length and written in language for a lay audience. The argument and main points were presented in the first paragraph. Following each essay, participants completed a comprehension check by answering 3 multiple-choice questions on the content of their essay and could look back at the essay if they needed to.

The essay for Condition A (the "Born This Way" condition) summarized current scientific research suggesting that sexual orientation is biogenetic (i.e., that its origins lie in the human genetic code) and is otherwise shaped in utero (i.e., Naturalness). This essay presented

research on genes/heredity, endocrinology, and the brain/anatomy as its evidence. (See *Appendix A*.)

The essay for Condition B (the "Social Constructionism" condition) summarized current scientific research that suggests that sexual orientation categories are not as discrete as we might ordinarily believe (Discreteness), members of sexual orientation categories are tremendously heterogeneous (Homogeneity), and knowing a person's sexual orientation tells one relatively little about who that person is (Informativeness). This essay omits any reference to the naturalness of sexual orientation. (See *Appendix B*.)

The essay for Condition C (the "Hybrid Essentialism" condition) combined the main arguments from the Condition A and Condition B essays, but condensed these arguments to keep them the same length as the other essays. (See *Appendix C.*)

Measures

Sexual Orientation Beliefs Scale (SOBS). To assess participants' beliefs about sexual orientation, we used the SOBS Form 2 (Arseneau et al., 2013). The 31-item SOBS Form 2 includes four separately scored subscales: Naturalness (e.g., "It is impossible to truly change one's sexual orientation"), Discreteness (e.g., "Sexual orientation is a category with distinct boundaries: A person is either gay/lesbian or heterosexual"), Homogeneity (e.g., "People who share the same sexual orientation pursue common goals"), and Informativeness (e.g., "It's useful to group people according to their sexual orientation"). The SOBS uses a 5-point, Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Internal consistency for each subscale at the Time 1 administration was as follows: Naturalness = .82; Discreteness = .85; Homogeneity = .81; Informativeness = .80. Internal consistency for each subscale at the Time 2

administration was as follows: Naturalness = .83; Discreteness = .88; Homogeneity = .87; Informativeness = .84.

Modern Homonegativity Scale – Gay Men (MHS-G). We used the 12-item Modern Homonegativity Scale (Morrison & Morrison, 2002) to assess participants' homonegative attitudes. The MHS examines subtler rather than overt negative attitudes towards gay men and lesbians. To remain consistent with Grzanka et al. (2016), we decided to use the version of the MHS for gay men only. The measure uses a 5-point, Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater homonegative attitudes. The MHS demonstrates adequate reliability ($\alpha = .87$) and evidence of construct validity (Morrison & Morrison, 2002). Cronbach's alpha was .96 for the Time 1 administration and .96 for the Time 2 administration.

Support for Gay and Lesbian Civil Rights Scale (SGLCR). We used the 20-item Support for Gay and Lesbian Civil Rights Scale (Brown & Henriquez, 2011) to specifically examine people's attitudes towards civil rights for gay and lesbian people (e.g., "Gays and lesbians should be protected by hate-crime legislation"). The SGLCR uses a 7-point, Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), with higher scores indicating more support for civil rights for gays and lesbians. The measure demonstrates strong internal consistency ($\alpha = .92$). Cronbach's alpha was .93 for the Time 1 administration and .93 for the Time 2 administration.

Lesbian, Gay, Bisexual Knowledge and Attitudes Scale for Heterosexuals (LGB-KASH). The 28-item Lesbian, Gay, Bisexual Knowledge and Attitudes Scale for Heterosexuals (Worthington, Dillon, & Becker-Schutte, 2005) contains five subscales: Hate (e.g., "It is

important for me to avoid LGB individuals"), Knowledge of LGB History, Symbols, and Community (e.g., "I am knowledgeable about the significance of the Stonewall Riot to the Gay Liberation Movement"), LGB Civil Rights (e.g., "Hospitals should acknowledge same-sex partners equally to any other next of kin"), Religious Conflict (e.g., "I keep my religious views to myself in order to accept LGB people"), and Internalized Affirmativeness (e.g., "I would attend a demonstration to promote LGB civil rights"). The LGB-KASH uses a 7-point, Likert-type scale ranging from 1 (*very uncharacteristic of me or my views*) to 7 (*very characteristic of me or my views*), with higher scores indicating more of the subscale. The measure has undergone rigorous testing through pilot studies, exploratory analysis, and confirmatory factor analysis. Internal consistency for each subscale at the Time 1 administration was as follows: Hate = .82; Knowledge of LGB History, Symbols, and Community = .83; LGB Civil Rights = .90; Religious Conflict = .81; Internalized Affirmativeness = .75. Internal consistency for each subscale at the Time 2 administration was as follows: Hate = .83; Knowledge of LGB History, Symbols, and Community = .89; LGB Civil Rights = .91; Religious Conflict = .83; Internalized Affirmativeness = .80. While we administered the full measure, we did not include the Knowledge of LGB History, Symbols, and Community subscale or the Religious Conflict subscale in our analyses, as these did not relate to our hypotheses.

Feeling Thermometer. We used 4 single-item feeling thermometers (Olson & Zabel, 2016) to assess participants' overall subjective attitudes towards sexual minorities on a scale ranging from 0° (*extremely negative*) to 100° (*extremely positive*) with a higher "temperature" on

the thermometer representing more positive attitudes. Individual questions asked about attitude toward "lesbian, gay, and bisexual people," "lesbian women," "gay men," and "bisexual people."

Demographic questionnaire. Participants were asked to provide their (1) age in years, (2) gender, (3) race/ethnicity, (4) sexual orientation, (5) nationality, (6) religious affiliation, (7) religiosity, (8) social class of family, (9) personal social class, (10) disability status, (11) veteran status, (12) political affiliation, and (13) conservativeness.

Procedure

The University of Tennessee, Knoxville Institutional Review Board approved all materials and procedures for this study. This research followed The American Psychological Association's ethical guidelines for human participants in research to the fullest extent.

Participants were recruited through Amazon's Mechanical Turk (MTurk) service in early 2018. Once participants registered for the study, they were provided with a link that took them to the Time 1 survey in *Qualtrics*. Once they consented electronically, all participants were then taken to the measures and finished with the demographic questionnaire. They were compensated $0.25 for taking the 20- to 30-minute Time 1 survey.

Participants received a reminder email through MTurk 6 days after participating in Time 1 letting them know that their 72-hour window to participate in Time 2 was now open. Participants had from midnight EST on Day 6 until 11:59 PM EST on Day 8 to complete Time 2. Participants returned to MTurk to register for Time 2 and were once again provided a link to *Qualtrics*. This time, after consenting, *Qualtrics* randomly assigned participants to 1 of 4 conditions: Condition A (the "Born This Way" condition), Condition B (the "Social Constructionism" condition), Condition C (the "Hybrid Essentialism" condition), or Condition D

(the control condition). Participants randomly assigned to Conditions A, B, or C were instructed to read their respective essays and answer the comprehension check questions. Once finished, they were taken to the measures once again. Participants randomly assigned to Condition D were taken directly to the measures. The measures were the same as those administered at Time 1, although demographics were not collected at Time 2. Upon completion, participants were compensated an additional $2.50 for the additional 45 to 60 minutes of their time.

Data Analysis

A power analysis in *G*Power* revealed that for the study to be powered at .80 with an alpha of .05 to detect a medium effect size (d = .60), an *N* of 37 was necessary for each of the 4 conditions. Based on this, we set our *N* at 160 (40 participants per condition). All analyses were conducted in *SPSS Version 25*. We conducted descriptive statistical analyses across demographic variables (i.e., means, standard deviations, frequency distributions). We determined means, standard deviations, and Pearson's correlations for all of our dependent variables. We then used 2 (*Time:* Time 1, Time 2) x 4 (*Condition:* Condition A – "Born This Way," Condition B – "Social Constructionism," Condition C – "Hybrid Essentialism," Condition D –Control) repeated measures ANOVAs with between-subjects comparisons and Tukey's HSD post hoc tests to examine changes from Time 1 to Time 2 and between the 4 conditions.

CHAPTER 3

RESULTS

Means, standard deviations, and correlations for the key outcome variables, which include the SOBS dimensions mean scores, the MHS-G total scores, and the SGLCR Scale total scores at Times 1 and Time 2, can be found in Table 1. The full table containing means, standard deviations, and correlations for all outcome variables, including the LGB-KASH and the four Feeling Thermometers, is available from the authors upon request.

Before conducting our ANOVAs, we first examined boxplots of all dependent variables to inspect for outliers. While we discovered occasional outliers, the only extreme outliers (defined as more than 3 times larger or smaller than the interquartile range) were found on the LGB-KASH Hate subscale. Therefore, we decided to exclude this outcome variable from our analyses completely.

Next, we examined our data for normality using Shapiro-Wilk tests. While many of the Shapiro-Wilk tests were violated, we did not find this surprising given both the restricted range of our Likert scale data and the relatively small number of data points per condition. We decided instead to follow Westfall and Henning's (2013) guidelines for using skewness and kurtosis to assess for normality. They state that, if skewness and kurtosis values are both between -2 and 2, one can consider the data to be normally distributed. (We chose Westfall and Henning's guidelines because theirs are considered to be one of the more conservative.) Based on this, we deemed all dependent variables to be roughly normally distributed.

Next, we checked for the assumptions of homogeneity of variances and covariances necessary for ANOVA. We examined Box's Test of Equality of Covariance for each analysis.

Box's *M* was violated only for the analysis for the SGLCR Scale. However, this analysis did not yield significant findings, reducing our concern for caution in interpreting this particular analysis. We next examined Levene's Test of Equality of Error Variances for each analysis and found no violations.

Based on these findings, we decided to move forward with using interpreting the ANOVAs. For each of the analyses that follow, we conducted a 2 (*Time:* Time 1, Time 2) x 4 (*Condition:* Condition A – "Born This Way," Condition B – "Social Constructionism," Condition C – "Hybrid Essentialism," Condition D – Control) repeated measures ANOVA with between-subjects comparisons. When there were significant interaction effects, we probed these further with Tukey's HSD post hoc tests.

Hypothesis 1: Sexual Orientation Beliefs

Sexual Orientation Beliefs Scale Discreteness Dimension. Results showed a medium, significant main effect of time, $F(1, 197) = 18.01$, $p < .001$, $\eta_p^2 = .08$, with lower levels of discreteness reported at Time 2 ($M = 2.61$, $SD = 0.94$) than at Time 1 ($M = 2.77$, $SD = 0.89$). There was a significant time by condition interaction with a fairly large effect size, $F(3, 197) = 10.03$, $p < .001$, $\eta_p^2 = .13$. There was no main effect of condition at Time 1, $F(3, 197) = .63$, $p = .60$. However, we found a medium, significant main effect of condition at Time 2, $F(3, 197) = 3.00$, $p = .03$, $\eta_p^2 = .04$, which we probed further.

A Tukey's HSD post hoc test revealed that participants assigned to Condition B (the Social Constructionism condition) at Time 2 had lower Discreteness Dimension scores ($M = 2.29$, $SD = 0.91$) than participants assigned to Condition D (the control group) at Time 2 ($M = 2.80$, $SD = 1.04$, $p = .03$). (See Figure 2.)

Sexual Orientation Beliefs Scale Homogeneity Dimension. Results showed a medium, significant main effect of time, $F(1, 197) = 11.72$, $p = .00$, $\eta_p^2 = .06$, with lower levels of homogeneity reported at Time 2 ($M = 2.51$, $SD = 0.82$) than at Time 1 ($M = 2.68$, $SD = 0.71$). There was a significant time by condition interaction with a fairly large effect size, $F(3, 197) = 8.23$, $p < .001$, $\eta_p^2 = .11$. There was no main effect of condition at Time 1, $F(3, 197) = .72$, $p = .54$. However, we found a medium, significant main effect of condition at Time 2, $F(3, 197) = 3.20$, $p = .02$, $\eta_p^2 = .05$, which we probed further.

A Tukey's HSD post hoc test revealed that participants assigned to Condition B (the Social Constructionism condition) at Time 2 had lower Homogeneity Dimension scores ($M = 2.22$, $SD = 0.68$) than participants assigned to Condition A (the "Born This Way" condition) at Time 2 ($M = 2.65$, $SD = 0.88$, $p = .04$). Those assigned to the Social Constructionism condition at Time 2 also had lower Homogeneity Dimension scores than participants assigned to the control condition at Time 2 ($M = 2.63$, $SD = 0.77$, $p = .04$). (See Figure 3.)

Sexual Orientation Beliefs Scale Naturalness Dimension. Results showed a medium, significant main effect of time, $F(1, 197) = 10.85$, $p = .00$, $\eta_p^2 = .05$, with lower levels of naturalness reported at Time 2 ($M = 3.36$, $SD = 0.70$) than at Time 1 ($M = 3.46$, $SD = 0.66$). There was a significant time by condition interaction with a robust effect size, $F(3, 197) = 22.00$, $p < .001$, $\eta_p^2 = .25$. There was no main effect of condition at Time 1, $F(3, 197) = .30$, $p = .83$. However, we found a large, significant main effect of condition at Time 2, $F(3, 197) = 10.22$, $p < .001$, $\eta_p^2 = .14$, which we probed further.

A Tukey's HSD post hoc test revealed that participants assigned to Condition A (the "Born This Way" condition) at Time 2 had higher Naturalness Dimension scores ($M = 3.62$, SD

= 0.75) than participants assigned to Condition B (the Social Constructionism condition) at Time 2 (M = 2.99, SD = 0.51, p < .001). Those assigned to the "Born This Way" condition at Time 2 also had higher Naturalness Dimension scores than participants assigned to Condition C (the Hybrid Essentialism condition) at Time 2 (M = 3.25, SD = 0.63, p = .03). Finally, those assigned to the Social Constructionism condition at Time 2 had lower Naturalness Dimension scores than participants assigned to Condition D (the control condition) at Time 2 (M = 3.56, SD = 0.70, p < .001). (See Figure 4.)

Sexual Orientation Beliefs Scale Informativeness Dimension. Results showed a medium, significant main effect of time, $F(1, 197) = 12.61$, $p < .001$, $\eta_p^2 = .06$, with lower levels of informativeness reported at Time 2 (M = 2.83, SD = 0.71) than at Time 1 (M = 2.97, SD = 0.67). There was a significant time by condition interaction with a large effect size, $F(3, 197) = 8.86$, $p < .001$, $\eta_p^2 = .12$. There was no main effect of condition at Time 1, $F(3, 197) = .08$, $p = .97$. However, we found a moderate, significant main effect of condition at Time 2, $F(3, 197) = 4.29$, $p = .01$, $\eta_p^2 = .06$, which we probed further.

A Tukey's HSD post hoc test revealed that participants assigned to Condition B (the Social Constructionism condition) at Time 2 had lower Informativeness Dimension scores (M = 2.57, SD = 0.59) than participants assigned to Condition A (the "Born This Way" condition) at Time 2 (M = 3.01, SD = 0.71, p = .01). Those assigned to the Social Constructionism condition at Time 2 also had lower Informativeness Dimension scores than participants assigned to the control condition at Time 2 (M = 2.96, SD = 0.68, p = .02). (See Figure 5.)

Hypothesis 2: Homonegative Prejudice

Modern Homonegativity Scale – Gay Men. Results showed a small, significant main effect of time, $F(1, 197) = 5.84$, $p = .02$, $\eta_p^2 = .03$, with lower levels of modern homonegativity reported at Time 2 ($M = 30.59$, $SD = 13.30$) than at Time 1 ($M = 31.41$, $SD = 12.70$). There was no time by condition interaction, $F(3, 197) = 2.02$, $p = .11$. Therefore, we did not probe further. (See Figure 6.)

Lesbian, Gay, and Bisexual Knowledge and Attitudes Scale for Heterosexuals Internalized Affirmativeness Subscale. Results showed that there was no significant main effect of time, $F(1, 197) = 1.68$, $p = .20$, with levels of Internalized Affirmativeness holding constant across Time 1 ($M = 3.38$, $SD = 1.52$) and Time 2 ($M = 3.45$, $SD = 1.58$). There was also no time by condition interaction, $F(3, 197) = 1.10$, $p = .35$. Therefore, we did not probe further.

Feeling Thermometer towards Lesbian, Gay, and Bisexual People. Results showed that there was no significant main effect of time, $F(1, 197) = 2.10$, $p = .15$, with "temperature" indicating feelings towards lesbian, gay, and bisexual individuals holding constant across Time 1 ($M = 71.51$, $SD = 26.44$) and Time 2 ($M = 72.96$, $SD = 25.75$). There was also no time by condition interaction, $F(3, 197) = .65$, $p = .58$. Therefore, we did not probe further.

Feeling Thermometer towards Lesbians. Results showed that there was no significant main effect of time, $F(1, 197) = 3.36$, $p = .07$, with "temperature" indicating feelings towards lesbian individuals specifically holding mostly constant across Time 1 ($M = 71.26$, $SD = 26.66$) and Time 2 ($M = 73.01$, $SD = 26.35$). It is worth noting, though, that this result is approaching

significance for a potential time main effect, albeit with a small effect size ($\eta_p^2 = .02$). There was no time by condition interaction, $F(3, 197) = .94$, $p = .42$. Therefore, we did not probe further.

Feeling Thermometer towards Gay Men. Results showed that there was no significant main effect of time, $F(1, 197) = 3.16$, $p = .08$, with "temperature" indicating feelings towards gay men specifically holding mostly constant across Time 1 ($M = 70.33$, $SD = 27.33$) and Time 2 ($M = 72.02$, $SD = 26.93$). It is worth noting once again, though, that this result is approaching significance for a potential time main effect, albeit with a small effect size ($\eta_p^2 = .02$). There was no time by condition interaction, $F(3, 197) = .91$, $p = .44$. Therefore, we did not probe further.

Feeling Thermometer towards Bisexuals. Results showed that there was no significant main effect of time, $F(1, 197) = 2.43$, $p = .12$, with "temperature" indicating feelings towards bisexual individuals specifically holding constant across Time 1 ($M = 68.94$, $SD = 27.99$) and Time 2 ($M = 70.45$, $SD = 27.58$). There was also no time by condition interaction, $F(3, 197) = 1.84$, $p = .14$. Therefore, we did not probe further.

Hypothesis 3: Support for LGB Civil Rights

Support for Gay and Lesbian Civil Rights Scale. Results showed that there was no significant main effect of time, $F(1, 197) = .79$, $p = .38$, with levels of support for gay and lesbian civil rights holding constant across Time 1 ($M = 110.30$, $SD = 24.41$) and Time 2 ($M = 109.62$, $SD = 24.47$). There was also no time by condition interaction, $F(3, 197) = .10$, $p = .96$. Therefore, we did not probe further.

Lesbian, Gay, and Bisexual Knowledge and Attitudes Scale for Heterosexuals LGB Civil Rights Subscale. Results showed that there was no significant main effect of time, $F(1, 197) = .10$, $p = .75$, with levels of support for LGB civil rights holding constant across Time 1

(M = 5.62, SD = 1.60) and Time 2 (M = 5.61, SD = 1.65). There was also no time by condition interaction, $F(3, 197) = .82$, $p = .49$. Therefore, we did not probe further.

CHAPTER 4

DISCUSSION

Beliefs about the naturalness of being a sexual minority have consistently been used to appeal for equal treatment in the United States (Hacking, 2002; Osmundson, 2011), and biogenetic ideas regarding the origins of same-sex desire are dominant in social justice advocacy and educational programing about LGB rights (Osmundson, 2011). However, in light of the findings of Grzanka et al.'s (2016) latent profile analysis of sexual orientation belief patterns, and given that the majority of Americans already believe that sexual orientation is not a choice (Washington Post-ABC News, 2014), we suggested that the "born this way" approach may not actually be the most effective strategy in decreasing heterosexist attitudes towards sexual minorities. Rather, we proposed that other, less often discussed beliefs about sexual orientation may have a stronger influence. Using the SOBS (Arseneau et al., 2013), this study examined whether targeting multiple sexual orientation beliefs, including those pertaining to the discreteness, homogeneity, and informativeness of sexual orientation, as well as those pertaining to the naturalness of sexual orientation were more effective than targeting naturalness beliefs alone in reducing homonegative prejudice and increasing support for gay and lesbian civil rights among heterosexual-identified adults. Contrary to our hypotheses, targeting these other beliefs were not more effective in reducing homonegative prejudice. Notably, though, reading essays summarizing scientific research about the discreteness, homogeneity, and informativeness of sexual orientation was equally as effective in reducing homonegative prejudice as learning about research pertaining to the naturalness of sexual orientation, suggesting that the "born this way"

approach is not the *only* effective approach to decreasing heterosexist attitudes towards sexual minorities.

Our results partially supported our first hypothesis, that participants randomly assigned to the two conditions that targeted multiple sexual orientation beliefs (i.e., the "Social Constructionism" intervention and the "Hybrid Essentialism" intervention) would exhibit a greater reduction in their beliefs in the informativeness, discreteness, and homogeneity of sexual orientation categories than those assigned to the "Born This Way" and control conditions. As we expected, participants assigned to our Social Constructionism condition at Time 2 reported lower levels of discreteness beliefs than the control group. As anticipated, those assigned to the Social Constructionism intervention at Time 2 also reported lower levels of homogeneity beliefs than those assigned to the "Born This Way" condition and the control condition at Time 2. Also, as we expected, participants assigned to the "Born This Way" condition at Time 2 reported greater levels of naturalness beliefs than those assigned to the Social Constructionism and Hybrid Essentialism conditions at Time 2. Furthermore, those assigned to the Social Constructionism condition at Time 2 reported lower levels of naturalness beliefs than the control condition. Not unexpectedly, participants assigned to the Social Constructionism intervention at Time 2 reported lower informativeness beliefs than those assigned to the "Born This Way" intervention and the control condition at Time 2.

Our results suggest that all three of our experimental conditions were successful in shifting some sexual orientation beliefs in the intended directions. Given that each of the essays was carefully designed to target each of the SOBS (Arseneau et al., 2013) dimensions by summarizing relevant scientific research, this was consistent with our expectations. These

findings are also consistent with previous research (Hegarty, 2010). Hegarty found that when he taught college students about research on sexual orientation other than biological theories, they reported reduced beliefs in the discreteness and naturalness of sexual orientation at the end of the course. The success of these interventions in changing sexual orientation beliefs so quickly may demonstrate that, with preexisting scientific research already at our disposal, we can easily educate lay audiences about different aspects of sexual orientation in a way that they can understand, including information that they are less likely to have previously learned (i.e., information beyond that suggesting sexual minorities are "born this way").

Our results did not support our second hypothesis that participants randomly assigned to the two conditions that targeted multiple sexual orientation beliefs (i.e., the "Social Constructionism" intervention and the "Hybrid Essentialism" intervention) would demonstrate greater reductions in their levels of homonegative prejudice than the "Born This Way" and control conditions. While we did find a small, significant main effect of time on the MHS-G, with lower levels of modern homonegativity reported at Time 2 than at Time 1, there were no main effects for the interventions. However, we found no significant main effect of time or condition on the Lesbian, Gay, and LGB-KASH Internalized Affirmativeness subscale, with levels of Internalized Affirmativeness holding constant across Time 1 and Time 2. We also did not find any significant main effects of time or condition for any of the Feeling Thermometers. However, it is worth noting that the Feeling Thermometer for Lesbians and the Feeling Thermometer for Gay Men were each approaching significance ($p = .07$ and $p = .08$, respectively) for a potential time main effect, such that "temperature" indicating feelings towards each group increased slightly from Time 1 to Time 2.

Our results also did not support our third hypothesis, that participants randomly assigned to the two conditions that targeted multiple sexual orientation beliefs (i.e., the "Social Constructionism" and "Hybrid Essentialism" conditions) would report increased support for gay and lesbian civil rights relative to the "Born This Way" and control conditions. We did not find a main effect of time or condition on the Support for Gay and Lesbian Civil Rights Scale. Likewise, we did not find a main effect of time or condition on the LGB-KASH LGB Civil Rights subscale.

Based on our results, all three of our essays may have been equally effective in reducing homonegative prejudice. This is inconsistent with Grzanka et al.'s (2016) latent profile analysis of sexual orientation belief patterns, which would suggest that the "Born This Way" condition would have been less effective than the Social Constructionism and Hybrid Essentialism conditions. This is also incongruent with Hegarty (2010), whose findings suggest that teaching biological theories of sexual orientation in human sexuality courses is not the cause of prejudice reduction. However, our findings are consistent with multiple studies suggesting that believing that sexual orientation is natural is, in fact, associated with positive attitudes towards sexual minorities (Haslam & Levy, 2006; Hegarty & Pratto, 2001; Jayaratne et al., 2006). Interestingly, our results also dovetail with other research using the SOBS that found that gay men who endorsed high naturalness beliefs reported lower internalized homonegativity (Morandini et al., 2015). Importantly, though, our findings suggest that the Social Constructionism and Hybrid Essentialism conditions were at least as effective as the "Born This Way" condition in reducing homonegative prejudice, implying that focusing on discreteness, homogeneity, and informativeness beliefs may be as effective as focusing on naturalness beliefs. This is significant

for those who agree with Diamond and Rosky (2016) and Osmundson (2011) that naturalness beliefs about sexual orientation should no longer be employed. Our results indicate that naturalness beliefs may no longer need to be employed at all in efforts to reduce homonegativity if other sexual orientation beliefs (i.e., our Social Constructionism condition) are equally effective in doing so.

The main effect of time on homonegative prejudice was found on the MHS-G but not found on the LGB-KASH Internalized Affirmativeness subscale or the Feeling Thermometers. It should be noted that Grzanka et al. (2016) used the MHS-G in their latent profile analysis with the SOBS (Arseneau et al., 2013), and this is a commonly used measure of homonegative prejudice. One explanation for the discrepancy of results between measures may be that "internalized affirmativeness" is too different of a construct from "modern homonegativity." Rather than focusing on homonegativity, The LGB-KASH Internalized Affirmativeness subscale contains items related to participation in activism (e.g., "I would display a symbol of gay pride (pink triangle, rainbow, etc.) to show my support of the LGB community") and questioning the participant's own sexual orientation (e.g., "I have had sexual fantasies about members of my same sex"). While we intended to find other ways to tap into homonegative prejudice, we may have chosen an inappropriate measure for doing so. Feeling Thermometers have been used in a number of other studies to gauge people's feelings towards LGB people (Dessel, 2010; Haddock, Zanna, & Esses, 1993; Herek, 2002), and they correlate with "a remarkable number of other measures" (Olson & Zabel, 2016, p. 568). Therefore, while these measures may not have been sensitive enough to detect the small main effect of time found on the MHS-G, it is not entirely

surprising that we found a marginally significant (*p*s = .07-.08) main effect of time on the Feeling Thermometer for Lesbians and Feeling Thermometer for Gay Men.

While these results should be interpreted with extreme caution, the fact that this marginally significant main effect was not present for the Feeling Thermometer for Lesbian, Gay, and Bisexual People or Feeling Thermometer for Bisexuals could potentially be indicative of the unique prejudice and discrimination that individuals who identify as bisexual face. Those who identify as bisexual face prejudice and discrimination not only from heterosexuals, but from gay- and lesbian-identified people, too (Deihl & Ochs, 2010). It may also be the case that our essays did not tap into people's negative feelings and beliefs about bisexual people. For example, research shows that bisexual individuals may be viewed as being "unsure" of their real sexual orientation, assumed to have sexually transmitted infections, and viewed as more likely to be unfaithful to their romantic partners (Burleson, 2014; Eliason, 2001; Spalding & Peplau, 1997).

While one could argue that potential demand characteristics caused by the measures being administered immediately after the intervention could partially explain the reported reduction in homonegative prejudice from Time 1 to Time 2, we would assume that these same demand characteristics would also influence reported support for gay and lesbian civil rights. Interestingly, though, we found no change in support for gay and lesbian civil rights on either of the measures we used, leading us to suspect that the reductions in homonegative prejudice are due to more than simply demand characteristics.

Our findings regarding support for gay and lesbian civil rights are congruent with the empirical support for LGB civil rights and homonegative prejudice being separate constructs. More specifically, people often report supporting gay and lesbian civil rights in spite of their

homonegative prejudice. For example, one study found that African-Americans are more supportive of laws prohibiting anti-gay discrimination than white people, even though African-Americans largely disapprove of homosexuality (Lewis, 2003). Kite and Whitley's (1996) meta-analysis of more than 100 studies concluded that there was no clear difference between men and women in their support for gay and lesbian civil rights, even though men held more homonegative attitudes than women. Another study found that while criminal justice majors are equally as willing to support extending gay and lesbian civil rights as other majors, they tended to have greater homonegative attitudes (Ventura, Lambert, Bryant, & Pasupuleti, 2004).

Limitations and Future Directions

Our study had a number of limitations that should be addressed in future research. By administering measures with high face validity, and administering these measures immediately after the interventions, our study was subject to demand characteristics and social desirability bias that may have affected our validity. We recommend that future research reduce demand characteristics by adding a Time 3 to administer the measures one week after the interventions. Another solution may be to add an implicit component, such as an Implicit Association Test (IAT; see (Fazio & Olson, 2003) or eye tracking. Face validity could be reduced by adding additional measures regarding other social identities that have nothing to do with the sexual orientation, such as the Modern Racism Scale (McConahay, 1986).

Another limitation is that we have no way of knowing how long the effects of the interventions in this study last. It is possible that the effects disappeared immediately after the participants completed their participation in the study. This would be another benefit of adding a

Time 3 one week after the interventions, to explore whether or not the effect of the intervention persists.

By allowing participants to participate online, we could not monitor their participation and have no way of knowing if they were distracted or if another person influenced their responses. A potential solution would be to monitor participants in a laboratory setting.

We did not ask participants to provide their level of educational attainment in their demographic questionnaire. Therefore, we do not know how educated our sample was. It very well could be that level of educational attainment has an impact on the effectiveness of the interventions, but we have no way of knowing that in this study. Given that our interventions were research essays about scientific research that would be more likely consumed by a college audience, it is possible that our interventions would be more effective for those with higher levels of education (i.e., a college degree). Future research should ask about educational attainment and investigate what role education plays in effectiveness of interventions.

While we had enough power for our study, we did not have enough participants to look at the effectiveness of the interventions for different age cohorts. We would have liked to investigate whether or not the interventions were more effective for Millennials and Generation Z, but our sample did not give us enough power to do so. Future research should collect larger samples to assess how effective interventions are for different age cohorts.

It could be that our small-scale 800- to 850-word research essay interventions were not powerful enough to differentiate the effectiveness of different types of sexual orientation beliefs in reducing homonegative prejudice. Future research should expand these interventions on a

larger scale to see if the effects are more robust and if this results in main effects of the interventions on homonegative prejudice.

Strengths

Despite these limitations, this is the first large-scale study using an experimental design to investigate the impact of different sexual orientation beliefs on homonegative prejudice and support for gay and lesbian civil rights. Using a true experimental design with a control group allowed us to confidently infer causation. We powered our study with a robust sample. One of this study's greatest strengths is the diversity of its sample. By collecting our sample through Amazon's Mechanical Turk (MTurk) service, we collected a diverse sample that is largely representative of the U.S. population in terms of gender, age, and race. Furthermore, research has shown that MTurk samples and the data they provide are of high quality and often superior to SONA subject pools commonly used in psychology departments (Buhrmester, Kwang, & Gosling, 2011).

Practical Implications and Conclusions

With further investigation, the findings of this study have the potential to inform the development of effective interventions to reduce homonegative prejudice for sexual minorities. However, there are many low-cost, low-effort ways to integrate the findings of this study (and the future research that comes from it) into currently existing interventions. The scientific research participants learned about sexual orientation in all three interventions in this study reduced their homonegative prejudice. Therefore, teaching people about scientific research targeting *multiple* sexual orientation beliefs (i.e., including, but not limited to the traditional "born this way" approach) has the potential to improve their attitudes towards sexual minorities.

Scientific research targeting multiple sexual orientation beliefs, such as the research discussed in the interventions in this study, could be incorporated on college campuses. This research could be integrated into Safe Zone trainings on college campuses that educate students and faculty about being allies to sexual and gender minorities, as well as resident assistant trainings. While biogenetic research on sexual orientation is already often taught in human sexuality and psychology courses, scientific research targeting other beliefs, such as the research discussed in our "Social Constructionism" intervention, could be integrated into these courses in much the same way that Hegarty (2010) did.

Sexual orientation beliefs could be incorporated into clinical practice, as well. Therapists could make efforts to include research on sexual orientation into the psychoeducation they use with their clients in psychotherapy. For example, if a client discloses to their therapist that their child just came out to them as gay and they are struggling to find a way to accept them, the therapist could integrate psychoeducation on the scientific research on sexual orientation to help the client come to a place of acceptance.

Research on sexual orientation could be integrated into diversity training for medical professionals to improve their competencies in working with sexual minority patients. Similarly, human resources departments could integrate scientific research on sexual orientation beliefs into the diversity trainings they hold for their employees in the workplace.

The current study suggests that when heterosexual laypeople learn about scientific research regarding sexual minorities, and not *just* scientific research supporting the "born this way" argument of sexual orientation, their homonegative prejudice decreases. As social scientists of various disciplines, we know this research well and have the ability to communicate

it to the public in various ways in which lay audiences can understand, similar to how the authors did in the interventions in this study. The research that could potentially change sexual orientation beliefs already exists, but the public knows very little of it. As social scientists, our duty now is to find ways to disseminate it.

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APPENDIX

Table 1. Pearson Correlations Between Sexual Orientation Beliefs Scale (SOBS) Dimension Score Means, Modern Homonegativity Scale – Gay Men (MHS-G) Total Scores, and Support for Gay and Lesbian Civil Rights (SGLCR) Scale Total Scores at Time 1 and Time 2 (N = 201)

Variables		*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1.	SOBS Discreteness (Time 1)	2.77	0.89	--											
2.	SOBS Discreteness (Time 2)	2.61	0.94	.79**	--										
3.	SOBS Homogeneity (Time 1)	2.68	0.71	.47**	.33**	--									
4.	SOBS Homogeneity (Time 2)	2.51	0.82	.40**	.44**	.58**	--								
5.	SOBS Naturalness (Time 1)	3.46	0.66	-.16*	-.24**	-.15*	-.20**	--							
6.	SOBS Naturalness (Time 2)	3.36	0.70	-.11	-.06	-.15*	-.05	.69**	--						
7.	SOBS Informativeness (Time 1)	2.97	0.67	.41**	.28**	.63**	.38**	.02	.00	--					
8.	SOBS Informativeness (Time 2)	2.83	0.71	.45**	.47**	.52**	.67**	-.01	.12	.67**	--				
9.	MHS-G (Time 1)	31.41	12.70	.69**	.65**	.38**	.37**	-.39**	-.30**	.28**	.33**	--			
10.	MHS-G (Time 2)	30.59	13.30	.67**	.70**	.33**	.41**	-.37**	-.28**	.23**	.36**	.93**	--		

Table 1. (continued)

Variables		*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
11.	SGLCR (Time 1)	110.30	24.41	-.60**	-.60**	-.36**	-.37**	.52**	.42**	-.27**	-.31**	-.76**	-.76**	--	
12.	SGLCR (Time 2)	109.62	24.47	-.58**	-.67**	-.33**	-.41**	.49**	.42**	-.22**	-.34**	-.73**	-.77**	.90**	--

**Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

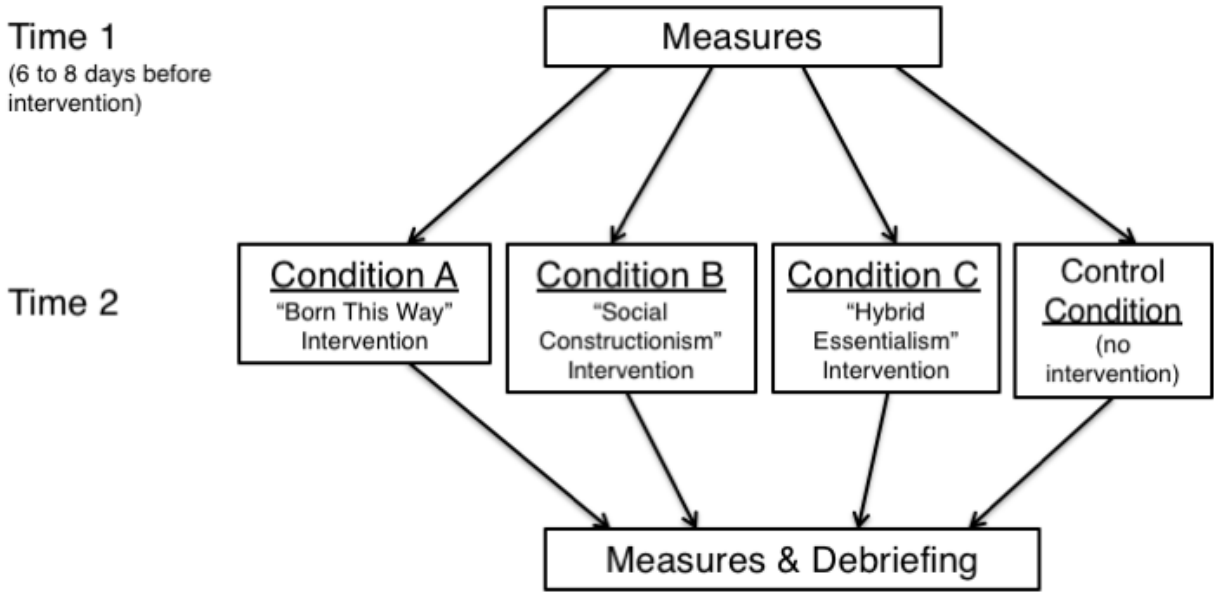

Figure 1. Study design. Participants received measures and a demographic questionnaire at Time 1 6 to 8 days before the intervention. At Time 2, participants were randomly assigned to 1 of 4 conditions. Participants assigned to 1 of the 3 interventions read a research essay at Time 2 and completed comprehension check questions before continuing on to the measures a second time immediately afterward. Participants assigned to the control condition only took the measures a second time at Time 2.

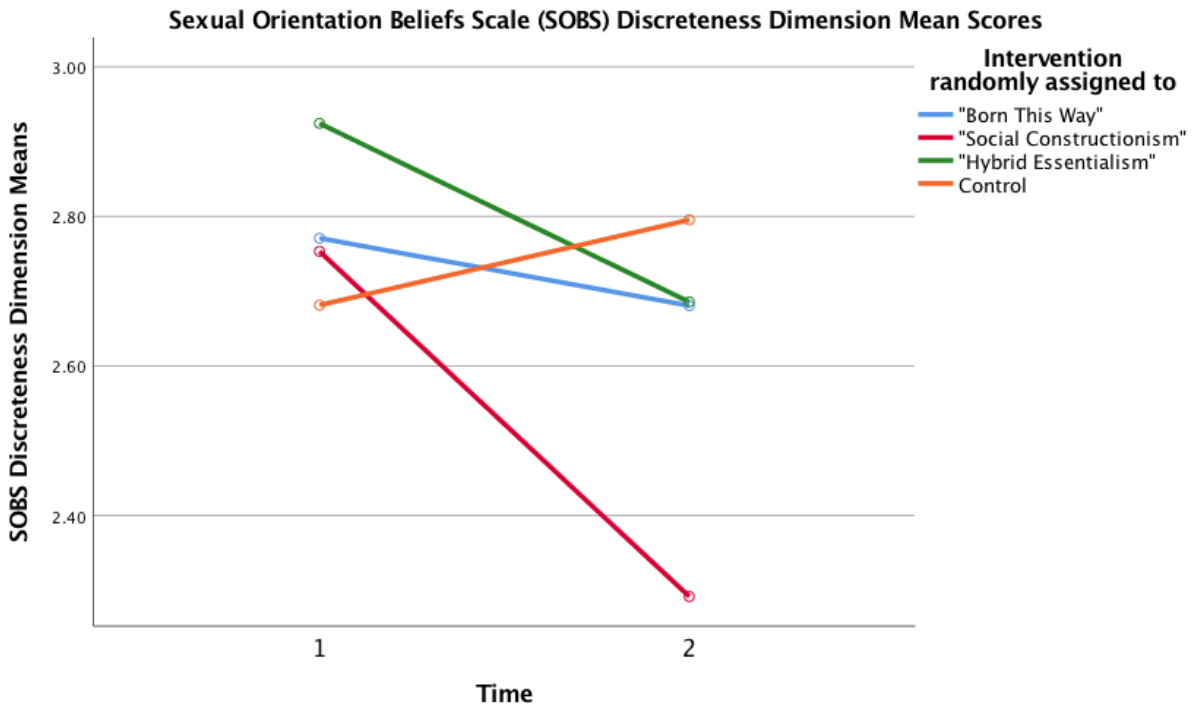

Figure 2. Mean scores for the Sexual Orientation Beliefs Scale (SOBS) Discreteness dimension.

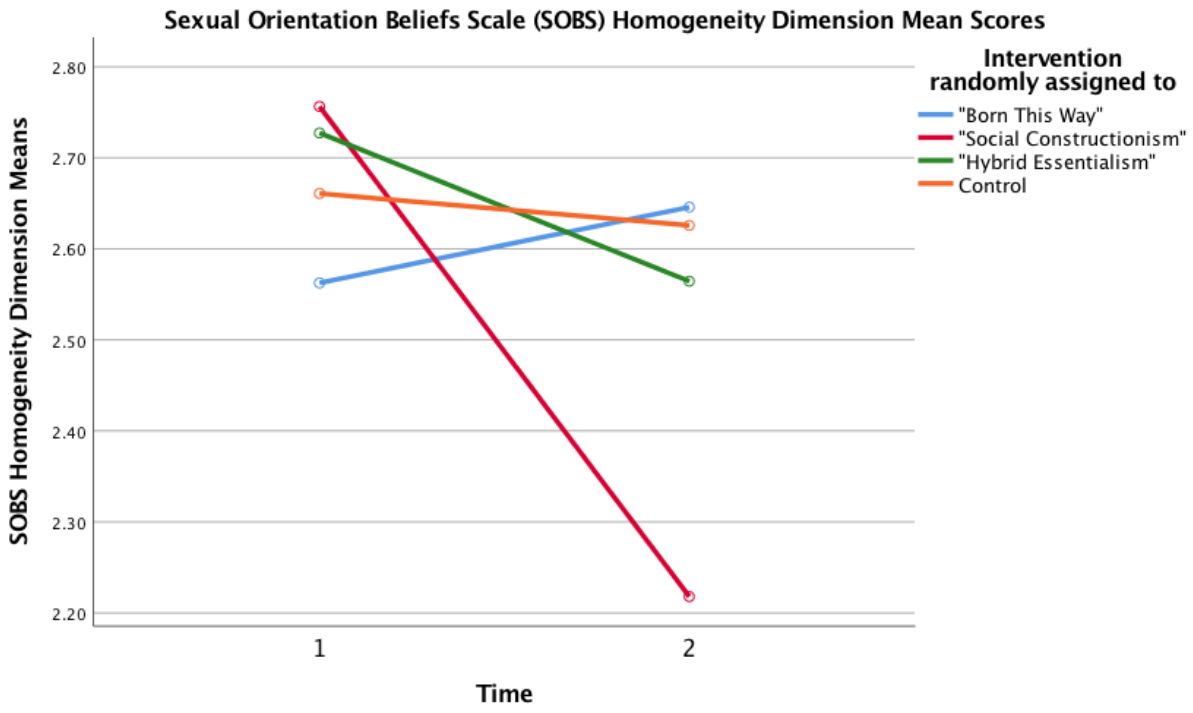

Figure 3. Mean scores for the Sexual Orientation Beliefs Scale (SOBS) Homogeneity dimension.

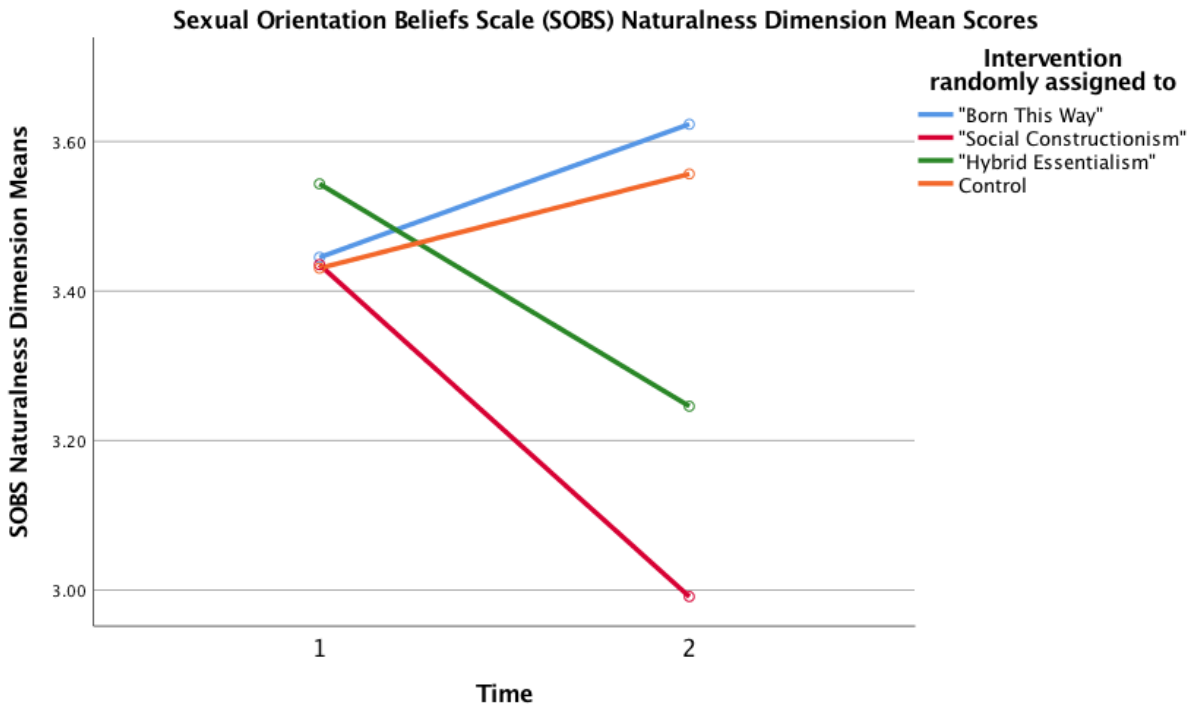

Figure 4. Mean scores for the Sexual Orientation Beliefs Scale (SOBS) Naturalness dimension.

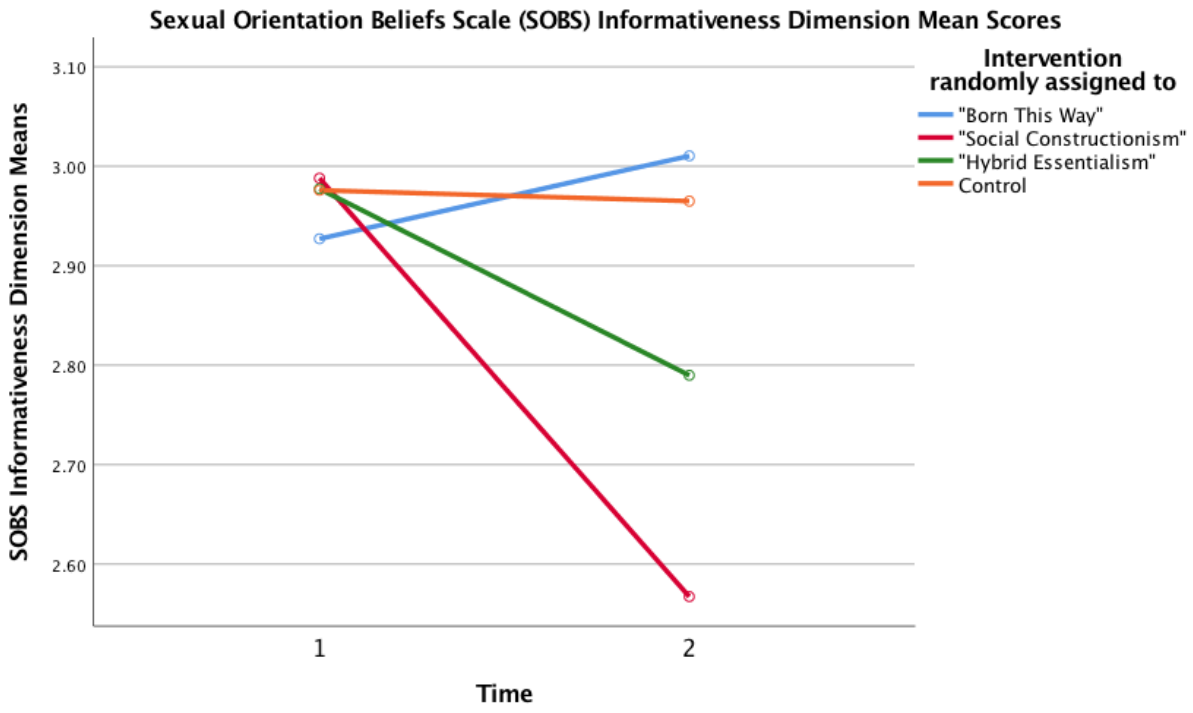

Figure 5. Mean scores for the Sexual Orientation Beliefs Scale (SOBS) Informativeness dimension.

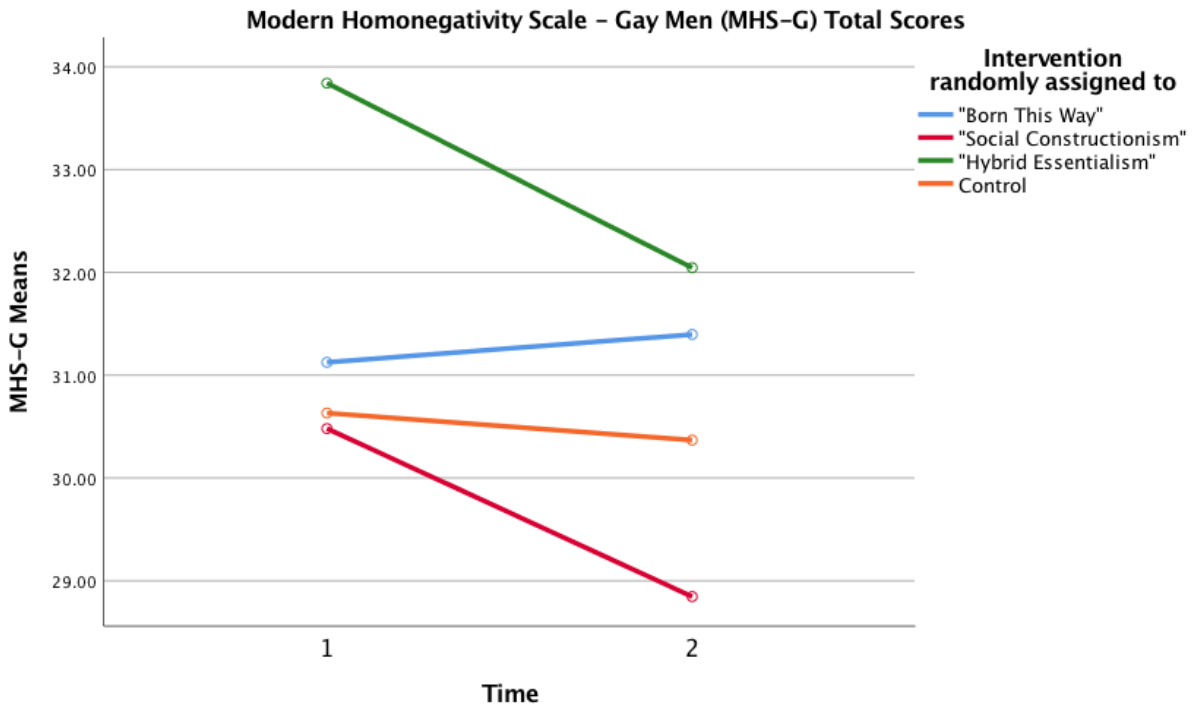

Figure 6. Total scores for the Modern Homonegativity Scale – Gay Men (MHS-G).

Appendix A

Please read the following essay carefully. Once you have finished, you will be asked to answer 3 multiple-choice reading comprehension questions based on what you have just read. When you are ready to continue to the reading comprehension questions, please click the arrows at the bottom right of your screen.

Scientific research suggests that sexual orientation is innate and biological. Evidence for this hypothesis can be seen in research on heredity, hormones, and the bodies and brains of lesbians and gay men.

In terms of heredity, a genetic study examining blood samples of almost 800 men in China found specific genetic structures related to homosexuality. They found that men who had this particular genetic structure were more likely to be gay than men who did not.[1] Similarly, scientists from three major universities examined the genetic structures of nearly 400 families with two or more gay brothers. These scientists have detected a specific chromosome contributing to male sexual orientation.[2]

Boston University biologists have found that gay men have a greater proportion of gay brothers than would be expected by chance. On average, 25% of gay men's brothers were also gay.[3] Similar research has found that lesbians are more likely to have sisters who are also lesbians, too.[4] Other research has found that when one identical twin is gay or lesbian, there is a 50% chance or more that the other identical twin will also be gay or lesbian. For gay and lesbian fraternal twins, it is less likely their sibling will be gay or lesbian, but it is still more likely than we would expect by chance.[5] Taken together, this evidence suggests that homosexuality runs in families.

There is also evidence to suggest that gay people's bodies react differently to hormones. A study published by the National Academy of Sciences found that the brains of gay men react similarly to those of heterosexual women in response to chemicals commonly found in male

sweat called pheromones. When gay men and heterosexual women smell a particular type of pheromone commonly detected in male sweat, brain scans show activation in a part of their brains called the hypothalamus. This part of the brain is involved in sexual behavior in humans. However, heterosexual men's brains do not react this way in response to smelling this pheromone.[6] Another study found that gay men's responses to the hormone estrogen were somewhere between that of heterosexual women and heterosexual men, suggesting that biological, hormonal markers for sexual orientation do indeed exist.[7]

Studies of the order a child is born in their family suggest that gay men may be exposed to levels of hormones in the womb that alter their brain development. Through a statistical analysis of 600 Canadian men's family information, psychologists discovered that having a greater number of older brothers increases the likelihood that a man will be gay. For each older brother a man has, his odds of being gay increase by 33%. However, number of older sisters does not increase the likelihood that a man will be gay.[8] The same analysis on a large database of historical sexuality data found similar results.[9] The "maternal immune hypothesis" explains why this may happen, arguing that the mother's body develops defenses against the male hormones of the fetus with each son she bears.[10] Further supporting this hypothesis, researchers from Northwestern University and their colleagues replicated the birth order effect in a sample of nearly 1,600 men; they found that younger male siblings are more likely to be gay than only children or older siblings.[11] This research has been replicated numerous times.[12]

There is also evidence of physical differences between gay and heterosexual people's bodies and brains. For example, researchers at Penn State University combined results of 21 studies measuring finger lengths of nearly 6,000 heterosexual women and men, and lesbian women and gay men. They found the ratio of index-to-ring fingers differed significantly between

lesbian and heterosexual women. The ratio of lesbian women's finger lengths was similar to the men's.[13] This "digit ratio" is thought to result from exposure to the hormone androgen in the womb, and further supports the idea that sexual orientation is biological.[14] Another study at the University of Toronto combined results of 20 studies comparing rates of left-handedness in over 23,000 people. The results showed that gay people were significantly more likely to be left-handed.[15] Since our dominant hand is determined in the womb, this again suggests sexual orientation is determined before birth.

Furthermore, the structure of gay people's brains may be different from that of heterosexuals. One scientist at the Salk Institute for Biological Studies obtained and dissected brain tissue from 41 deceased people and investigated an area of the brain called the hypothalamus, which governs sexual behavior. One area of the hypothalamus was more than twice as large in the heterosexual males' brains than the gay males' brains, suggesting a biological origin of sexual orientation.[16] Similarly, researchers at the Stockholm Brain Institute found through brain scans of 90 people that the brains of gay men and lesbian women were different from the brains of heterosexual men and heterosexual women, respectively.[17] Taken together, this research strongly suggests sexual orientation is biological.

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Appendix B

Please read the following essay carefully. Once you have finished, you will be asked to answer 3 multiple-choice reading comprehension questions based on what you have just read. When you are ready to continue to the reading comprehension questions, please click the arrows at the bottom right of your screen.

Scientists argue sexual orientation is "socially constructed," meaning the labels used to describe sexual orientations are developed by humans, and are therefore different across cultures, times, and locations. These "social constructionists" argue sexual orientation categories are not as distinct (i.e., separate) or informative as we might think. They also suggest that individuals who use the same label for their sexual orientation (e.g., gay) may be very different from one another in terms of their sexual desires and behaviors. In addition, labels people use to refer to individuals based on their sexual orientation (e.g., bisexual), may be different from how these individuals view themselves.[1]

Researchers suggest sexual orientation categories such as "gay" and "heterosexual" are not as distinct as we might believe. Kinsey's groundbreaking research showed how sexual orientation is not easily categorized into distinct categories of gay/lesbian, bisexual, or heterosexual, because humans express a wide range of sexual desires and behaviors—even when they identify as "straight" or "gay." Kinsey developed a seven-point scale of attraction to female and male sexes, which was ground-breaking in that it allowed participants more flexibility in describing their sexual orientations than previous measures of sexual orientation.[2] Asking open-ended questions about sexual orientation also gives a broader picture of sexual orientation than asking multiple choice questions with a limited number of sexual orientation options.[3]

Researchers have examined why individuals use a particular sexual orientation label to describe themselves. There may be many reasons individuals use the term "bisexual," for example, including their physical and/or emotional attractions to both women and men, their

hesitance to identify as "lesbian" or "gay," and/or their social and political beliefs. As such, the label "bisexual" means different things to different people.[4]

Research on sexual fluidity further complicates the notion that there are a limited number of distinct sexual orientation categories. For example, a psychologist found some women report having been heterosexual in the past, but now identify as lesbian. She concluded that change in sexual orientation can occur.[5] Another researcher conducted a study with lesbians and asked about their sexual behaviors and attractions over time. Of the women who initially identified as lesbian, 60% had sexual contact and 30% had been romantically involved with a man in the past 10 years.[6] Sociologists have found extensive evidence of men who do not identify as gay but nonetheless seek out and engage in sex with other straight-identified men while maintaining romantic relationships with women.[7] In another study, researchers found half their participants changed their attractions during their lifetime.[8] These findings suggest sexual attraction can fluctuate over time, meaning distinct categories may not fully capture individuals' identities or experiences.

In terms of the informativeness of sexual orientation labels (i.e., the idea these labels tell us something meaningful about an individual or group), scientists conclude that knowing a person's sexual orientation tells us relatively little about that person. For example, knowing someone identifies as straight is hardly the basis for making other judgments about them, such as how good they are at math, or if they enjoy country music. One reason is sexual orientation categories are created by people, change over time, and are not consistent across cultures and places. Psychologist Janis Bohan, for example, argued sexual orientation labels originate from particular sociohistorical contexts, and are not universal categories of human experience.[9] Sexual orientation is also defined differently across individuals. For example, one sociologist

interviewed adolescent boys who discussed their understanding of their own sexual orientations. She found they picked labels that fit them best, and chose a variety of labels.[10] In other words, two people who have the same kinds of desires can identify in very different ways.

Sexual orientation is also defined differently in different settings. For example, many men who identify as heterosexual when they enter prison have sex with men while incarcerated.[11] Sexual orientation is also defined differently across populations and cultures. For example, the term "down low" is frequently used to refer to Black men who have sex with men in private, while publicly identifying as heterosexual. Many of these men perceive themselves as straight and do not want relationships with men beyond sex.[12] Researchers find men on the "down low" are actually found across racial groups.[13] Additionally, Western sexual orientation labels do not match those in other countries. In India, for example, there is a label for those who are masculine and prefer to have sex with women and feminine men, and another for men who are more feminine and prefer to have sex with masculine men.[14] Collectively, this evidence suggests knowing a person's sexual orientation reveals little about them.

Like all groups, lesbian, gay, and bisexual (LGB) communities contain a great deal of diversity. LGB people have different races, social classes, religions, and disability statuses. For example, scientists have investigated how social class impacts LGB individuals' lives, citing evidence that being both poorer and LGB presents unique challenges.[15] Other studies show LGB people express their gender in diverse ways.[16] Research like this reminds us that it is important to remember that LGB people are not all the same.

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Appendix C

Please read the following essay carefully. Once you have finished, you will be asked to answer 3 multiple-choice reading comprehension questions based on what you have just read. When you are ready to continue to the reading comprehension questions, please click the arrows at the bottom right of your screen.

Scientists are starting to learn about the complexities of sexual orientation. Some scientists suggest sexual orientation is innate and biological. Others suggest sexual orientations can change across one's life, that sexual orientation labels are different across time and culture, and that there is a great deal of diversity *within* any sexual orientation category—such as "gay," "straight," or "bisexual"—so these labels tell us little about any given individual or group of individuals. It turns out that all of these hypotheses about sexual orientation may be true.

Evidence that sexual orientation is innate and biological can be found in research on heredity, hormones, and the bodies and brains of lesbians and gay men. Scientists have detected a chromosome contributing to male sexual orientation[1] and have found that when one identical twin is gay or lesbian, there is a 50% chance or more that the other twin will be, too.[2] This evidence suggests homosexuality is biological and runs in families. Studies of the order a child is born in their family further suggest sexual orientation is biological. Scientists have found that the number of older brothers a man has relates to being gay[3], likely because a mother's body develops defenses against the male hormones of the fetus with each son she bears, altering brain development.[4]

There is also evidence gay people's bodies react differently to hormones. A study found gay men's responses to estrogen were between those of heterosexual women and heterosexual men, suggesting biological, hormonal markers for sexual orientation exist.[5] There is also evidence of physical differences between gay and straight people's bodies and brains. Researchers found the ratio of index-to-ring fingers differs between lesbian and heterosexual

women.[6] This "digit ratio" is also thought to result from exposure to a certain hormone in the womb.[7] Another study found gay people were more likely to be left-handed.[8] Since our dominant hand is determined in the womb, this again suggests sexual orientation is determined before birth. Researchers have also found the brains of gay men and lesbian women to be different from the brains of heterosexual men and women.[9] Taken together, this research strongly suggests sexual orientation is biological.

But just because sexuality may be influenced by biology does not mean that cultural and social factors are irrelevant. In fact, many social scientists argue sexual orientation is "socially constructed." For example, the labels we use to describe sexual orientations are absolutely developed by humans, and are different across social groups, cultures, times, and locations. Definitions of these categories change with social and political climates. In addition, labels people use to refer to individuals based on their sexual orientation (for example, bisexual), may, in fact, be different from how these individuals view themselves.[10]

Researchers also suggest categories like "gay" and "heterosexual" are not as distinct as we might believe. Kinsey's groundbreaking research showed how sexual orientation may not be easily categorized into distinct categories of gay/lesbian, bisexual, or heterosexual.[11] Further complicating the notion that there are a limited number of distinct sexual orientation categories is research on sexual fluidity, which suggests individuals' sexual orientations can change throughout their lives. One researcher conducted a study with lesbians, asking them about sexual behaviors and attractions over time. Of those who initially identified as lesbian, 60% had sexual contact, and 30% had been romantically involved, with a man over the past 10 years.[12] These findings suggest sexual attraction can fluctuate over time, and that distinct categories may not fully capture individuals' experiences.

Researchers also actually assert that knowing a person's sexual orientation tells us relatively little about who that person is. One reason is that sexual orientation categories are created by people, change over time, and are not consistent across cultures and places. Psychologist Janis Bohan, for example, argued sexual orientation labels originate from particular sociohistorical contexts, and are not universal categories of human experience.[13] Sexual orientation is also defined differently across individuals. For example, one sociologist interviewed adolescent boys at a gay youth center who discussed their experiences understanding their own sexual orientations. She found they picked a variety labels that fit them best.[14]

Sexual orientation is also defined differently across settings. For example, a study conducted at a U.S. prison found some men who had sex with men while incarcerated identified as heterosexual when entering prison but as gay while incarcerated.[15] Sexual orientation is defined differently across cultures, as well. For example, the term 'down low" is frequently used to refer to Black men who have sex with men in private while publicly identifying as heterosexual.[16] Additionally, Western labels for sexual orientation differ from those in other countries.[17]

Like all groups, lesbian, gay, and bisexual (LGB) communities contain a great deal of diversity. LGB people have different races, social classes, religions, and disability statuses. For example, scientists have investigated how social class impacts LGB individuals' lives, citing evidence that being both poorer and LGB presents unique challenges.[18] Research like this reminds us that it is important to remember that LGB people are not all the same.

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VITA

Kevin Fry was born in Reading, Pennsylvania to the parents of Jack and Linda Fry and is the oldest of two sons. Kevin graduated salutatorian from Muhlenberg High School in Laureldale, Pennsylvania in 2007. He attended Ithaca College in Ithaca, New York where he graduated *Summa cum Laude* with a Bachelor of Arts in Psychology and History in 2011. Kevin spent three years working as a clinical research coordinator at Nationwide Children's Hospital in Columbus, Ohio. He is currently enrolled at the University of Tennessee, Knoxville, working with Dr. Joe Miles in pursuit of a Ph.D. in Counseling Psychology.