Heroes against homophobia: Does elevation uniquely block homophobia by inhibiting disgust?

Sebastian E. Bartoș[a,b]*, Pascale Sophie Russell[b] and Peter Hegarty[b]

[a]*Division of Psychology, University of Northampton, Northampton, UK;* [b]*Department of Psychology, University of Surrey, Guildford, UK*

Correspondence to: Sebastian Bartoș, sebastian.bartos@northampton.ac.uk, University of Northampton, Faculty of Health and Society, Division of Psychology, Room LH301, Waterside Campus, Northampton, UK, NN1 5PH

This work was supported by the British Academy under BA/Leverhulme Small Research Grant No. SG163460.

The data that support the findings of these studies are freely available from the Open Science Foundation at https://osf.io/6gwy7/

Heroes against homophobia: Does elevation uniquely block homophobia by inhibiting disgust?

Homophobia has decreased in past decades, but gut-level disgust towards gay men lingers. It has been suggested that disgust can be reduced by inducing its proposed opposite emotion, *elevation*. Elevation is elicited by witnessing self-sacrifice and other uncommon acts of moral goodness. Research suggests elevation might reduce homophobia, but only general elevation (not elevation specifically evoked by gay people) and general attitudes (rather than disgust) have been studied. Nor has elevation's proposed specific effect on homophobia been differentiated from effects of related emotions, such as admiration or surprise. A series of news stories featuring either a gay man or a man of unspecified sexuality that were intended to elicit elevation, admiration, or surprise distinctly were pretested. We pre-registered the prediction that an elevation-inducing story would reduce negative attitudes by reducing disgust. In Study 1 ($N = 593$), participants who read elevation-inducing stories did not express more positive attitudes or less disgust towards gay men than those who read stories inducing admiration or surprise. The admiration stories elicited similar or lower levels of disgust than the elevation stories. Study 2 ($N = 588$), replicated the findings of Study 1 with improved stimuli and measures. Both studies suggest that elevation may not uniquely reduce homophobia, as elevation and admiration have similar effects on this prejudice.

Keywords: Elevation, Homophobia, Admiration, Kama Muta, Prejudice, Moral Emotions.

Prejudice often involves 'gut –level' negative emotions (Crandall & Eshleman, 2003; Haidt, 2001), and *disgust* has been posited as playing a fundamental role in the specific prejudice of homophobia[1] (Buck, Plant, Radcliff, Zielaskowski, & Boener, 2013; Herek,

[1] Numerous alternatives to the term homophobia have been proposed: heterosexism (e.g., Neisen, 1990), homonegativity (e.g., Hudson & Ricketts, 1980), and sexual prejudice (e.g., Herek, 2004), to name just the most common ones. All of these concepts cover a wide range of phenomena, and

1987). Accordingly, emotional mechanisms that negate or neutralise the effects of disgust may need to be understood to reduce homophobia. Elevation is theorized as the opposite of disgust in social relations, a kind of "emotional reset button" that creates a "virtuous ripple effect" (Haidt, 2003, p.86). Eliciting *elevation* is one promising way of reducing the disgust related to homophobia (Lai, Haidt, & Nosek, 2014). Across four studies Lai et al. (2014) found that each of three stories that elicited elevation reduced both implicit and explicit homophobia towards gay men. These effects were specific to homophobia and did not generalize to anti-Black racism. Moreover the protagonists in these stories were not gay men, meaning that the evoked emotion was *incidental* to the target of the prejudice. Although it cannot be concluded definitively that elevation *uniquely* inhibited disgust, Lai et al's (2014) research constituted important evidence that positive emotions can reduce homophobia. Therefore, in the current research we examined whether or not elevation uniquely reduces homophobia, if its effects are influential when elicited in either an incidental or integral manner, and if they operate by emotionally resetting negative emotions such as disgust.

Homophobia and Disgust

Homophobia has decreased in many societies (see the World Values Survey Association, 2015), and is increasingly often a modern prejudice that unfolds through subtle forms of exclusion (e.g., Morrison & Morrison, 2002, 2009). Many psychologists have been

---

they have shifting definitions (Bryant & Vidal-Ortiz, 2008). The use of a paramount term (or a small set of terms) inevitably masks the complex psychological and social roots of homophobia, and its historical shifts (Herek, 2004). Nevertheless, homophobia remains by far the most common term: as of August 4, 2019, it has been used in 1,721 articles in PsycINFO over the last 10 years, far more than heterosexism (564), homonegativity (337), or sexual prejudice (246). Therefore, we use the term "homophobia" here.

committed to reducing the stigma of sexual orientation (Bartoș, Berger, & Hegarty, 2014). At the same time, documenting the real effects of this prejudice on mental and physical health disparities has been central to psychologists' advocacy efforts of recent decades (Frost, Lehavot, & Meyer, 2015; Hatzenbuehler, 2009; Hegarty, 2018; Meyer, 2003). Many psychological interventions including educational interventions and intergroup contact have been repeatedly shown to effectively reduce explicit homophobic attitudes (Bartoș et al., 2014), but they do not directly target negative emotions, such as disgust.

Disgust may be a trenchant barrier to the eradication of homophobia, which appears particularly intrinsic to the emotional component of this type of prejudice. Disgust impacts judgments of sexual acts (Tybur, Lieberman, & Griskevicius, 2009), such as same-sex relations, both in laboratory contexts and in political debates (e.g., Haidt & Hersch, 2001; Herek, 2009; Inbar, Pizarro, Knobe, & Bloom, 2009; Nussbaum, 2004; Royzman, Leeman, & Sabini, 2008). Disgust sensitivity - the disposition to experience disgust frequently and intensely - is predictive of heightened prejudice toward gay men (Inbar et al., 2009). Cottrell and Neuberg (2005) found that gay men elicit more *disgust* than all other target social groups, and are seen to threaten *health* and *social values* more than all other target groups. Even 'incidental' disgust – which is unrelated to the gay targets entirely - may provide an emotional trigger to the expression of sexual prejudice, more so than other groups (Dasgupta, DeSteno, Williams, & Hunsinger, 2009; Inbar, Pizarro, & Bloom, 2012; for a meta-analysis, see Kiss, Morrison, & Morrison, 2018). Finally, when interventions to reduce homophobia prompt negative feedback from participants, participants' negative feedback often mentions disgust explicitly (Bartoș & Hegarty, 2019).

The link between disgust and homophobia may limit prejudice reduction because disgust in socio-moral contexts tends to be an irrational, inflexible emotion that is elicited independent of context, rendering it relatively hard to change (Russell & Giner-Sorolla,

2013). Disgust is believed to function to avoid pathogen threats (i.e., core disgust), but some argue that it is triggered from sexual concerns (Tybur, Lieberman, & Griskevicius, 2009), bodily moral violations (Russell & Giner-Sorolla, 2013), and even socio-moral concerns (Chapman & Anderson, 2013). Lai et al. (2014) argued that elevation reduced homophobia but not racism in their study because disgust is evoked by non-normative sexual acts that gay men are assumed to engage in, but not all mechanisms for reducing disgust, involve eliciting positive emotions, see Olatunji, Berg, & Zhao (2017) and Rozin (2008) for other mechanisms or ways to reduce disgust, which do not involve eliciting emotions.

Is Elevation's Effect Unique?

Whilst Lai et al. (2014) showed an influence of evoked elevation on implicit and explicit homophobia, these authors only examined elevation in comparison to a neutral and amused state, leaving open the question of whether any other positive 'other focused' emotions would have similar effects as elevation did. The *social intuitionist* model proposes that 'gut feelings' are more predictive of moral judgments than deliberative reasoning (Haidt, 2001). This model is supported by evidence that emotions can influence a range of reactions, including prejudice, moral judgment, and behavioral reactions (Schnall, 2017; Thomson & Siegel, 2017). Since specific emotions (e.g., anger, disgust or fear) are a basis and elicitor of prejudice (Mackie, Devos, Smith, 2000), it can be assumed that reducing those emotions opposites may counteract particular prejudices.

The 'broaden and build' hypothesis specifically predicts that positive emotions can counteract negative emotions (Fredrickson, 2001). Elevation is one of several positive emotions that has been shown to reduce prejudice (see Pohling & Diesner, 2016; Thomson & Siegel, 2017; van de Vyver & Abrams, 2015 for reviews). Elevation is described as a distinct emotion elicited by witnessing acts of uncommon goodness or moral beauty (Haidt, 2003),

that is distinct from emotions such as the envy, jealousy, awe, and admiration (Pohling & Diesner, 2016; Thomson & Siegel, 2017). Typically, elevation is triggered when we see someone help another individual that is "poor, sick, or stranded in a difficult situation" (Thomson & Siegel, 2017, p.2). For example, in experiments, elevation has been elicited using a reality TV show clip depicting a mentor who saves youth from lives of gang activity (e.g., Silvers & Haidt, 2008; Lai et al., 2014).

Where the broaden and build hypothesis holds, eliciting positive emotions such as elevation should reduce prejudice in some cases, as in Lai et al.'s (2014) studies. However, it is less clear if a reduction in homophobia occurred because elevation specifically was elicited or because one of several positive other focused emotions was elicited. Haidt's (2003) claim that elevation is uniquely the 'opposite' emotion to disgust, that 'resets' emotions, undoing the effects of disgust. Here, we test that hypothesis by examining the effects of evoking both elevation and the positive other focused emotion of *admiration* on homophobia.

Admiration, like elevation is described as an 'other-focused' emotion and it is described as 'surprise associated with pleasure' (Onu, Kessler, & Smith, 2016). Some researchers define admiration restrictively, as a non-moral emotion elicited by individuals that exceed expectations of skill or talent (e.g., Algoe & Haidt, 2009; Onu et al., 2016). When using this restrictive definition of admiration, elevation and admiration have been shown to have distinct physiological, psychological and social effects (Onu et al., 2016). Whilst admiration and elevation are both evoked when people witness an unusual or unexpected event, admiration focuses on exceptional competence and elevation on exceptional morality, and these are two important, but distinct, dimensions of social perception (Goodwin, Piazza, & Rozin, 2014). Like elevation, admiration has also been found to facilitate social change (Sweetman, Spears, Livingstone, & Manstead, 2013). Most relevant to the current research, admiration was found to underlie reductions in both sexual and racial prejudice occasioned

by intergroup contact (Seger, Banerji, Mackie, Park, & Smith, 2017). Whilst research has examined both effects of admiration (Seger et al., 2017) and elevation (Lai et al., 2014) on the reduction of homophobia, to our knowledge no research has compared the direct effects of these two positive other-directed emotions on homophobia. Here we expand Lai et al.'s (2014) inquiry by comparing the effects of elevation- and admiration-inducing stories on disgust and homophobia, addressing the questions of whether the effects of elevation and admiration are unique, whether they need to be elicited incidentally, and whether they operate by 'resetting' disgust.

Not all researchers agree that elevation and admiration are distinct. The stereotype content model treats admiration and elevation as equivalent (S. Fiske, Cuddy, Glick & Xu, 2002). Positive emotions, like admiration, awe, and elevation, may also fall under the umbrella feeling of *kama muta*, a Sanskrit term that translates as 'moved by love' (Zickfeld, Schubert, Seibt, & A. Fiske, 2019). Alan Fiske and colleagues argue that communal sharing elicits the feeling of being moved, and that people can experience kama muta even when merely observing events. Like elevation, kama muta is described as positive, pro-social, and emotionally moving. Cova and Deona (2014) have argued that kama muta is triggered by the presentation or emergence of values from a negative scene. This description also describes the typical stories used in elevation experiments, witnessing helpful behaviours towards those in an unfortunate, threatening or difficult situation (Thomson & Siegel, 2017). Kama muta has been found to be a positive experience overall, but one that can elicit negative feelings as well (Zickfeld et al., 2019), similar to nostalgia, another emotion that has been shown to counteract prejudice (Turner, Wildschut, & Sedikides, 2012). In sum, research on kama muta suggests that elevation and admiration may be similarly evoked and have similar effects on prejudice.

As the reduction of homophobia is an important social goal, the present manuscript examines whether elevation and admiration operate similarly or differently in prejudice reduction and the relationship of each to disgust. If elevation were shown to have reliable unique effects on homophobia that were not produced by admiration, then the case for specificity would be enhanced (Lai et al., 2014). Alternatively, equivalent effects of elevation and admiration, would suggest general effects of positive emotions, more consistent with the kama muta framework.

We pitted stories intended to invoke these emotions against stories that elicited surprise here, as surprise is also related to both admiration and elevation, in that all three of the emotions are elicited by uncommon or unexpected people/events. Surprise shares common features with admiration, as admiration is described as 'surprise associated with pleasure' (Onu, Kessler, & Smith, 2016). What makes admiration and elevation distinct from surprise, is that the former two emotions are typically associated with positive exceptionality, whether it be morality or competence. Uncommon competence and morality are surprising in anyone, and counter-stereotypes have been found to reduce prejudice towards a range of groups, by reducing heuristic thinking and dehumanization tendencies (Prati, Vasiljevic, Crisp, & Rubini, 2015). Exceptional behaviour in a gay man could improve intergroup relations simply because it is counter-stereotypical (Vasiljevic & Crisp, 2013). Thus, surprising information also has the capacity to reduce homophobia. By comparing our *admiration and elevation conditions* against a *surprise condition* we aimed to tease out distinct effects of the two positive other focused emotions from effects of surprise, also examining both incidental and integral effects of the three emotions.

Current Research

Lai et al.'s (2014) research on elevation highlighted two areas of ambiguity beyond the

question of whether elevation's effects are unique. First, it is unclear whether the reduction in homophobia that they observed was due to a resetting of disgust, as hypothesized, as the purported elevation-disgust mechanism was not studied directly. Many interventions successfully reduce homophobia without addressing disgust at all (Bartoș et al., 2014). Lai et al. (2014) measured self-reported anti-gay prejudice using the Attitudes Toward Lesbians and Gays Scale (Herek, 1994), a measure of general prejudice that captures a range of emotions toward sexual minorities. They found that disgust sensitivity was correlated with sexual prejudice but did not moderate the impact of inducing elevation on sexual prejudice. Here we measure both general attitudes and disgust to see if change in attitudes can be explained by reductions in disgust. Additionally, Study 2 included a measure of self-reported social distance, conceptualized as an indirect behavioural measure of disgust, a measure of disgust sensitivity, and a mood measure to investigate whether a general positive state could explain any observed effects of specific emotions, i.e., elevation, admiration or disgust.

Second, Lai et al. (2014) triggered *incidental* rather than *integral* elevation, in which the source of the elevation was separate from the target being evaluated (Algoe & Haidt, 2009). In their studies, elevation was evoked either by the reality TV mentor clip mentioned previously, by a news story about a man saving someone who had a seizure from falling on subway tracks (i.e., a hero) or by a story about a girl's sports team showing great fair play. The authors aggregated the effects of these diverse scenarios across studies. The protagonist was *not* gay in any scenario, indicating that the evoked elevation was incidental to the target of prejudice. We believe this is a potential strength of their finding because incidental positive emotions might have particular significance in applied contexts where efforts to reduce homophobia are particularly risky for gay people themselves; an intervention that neither involves nor mentions them may be particularly useful. This intriguing aspect of Lai et al.'s studies was examined directly here, as we used stories featuring gay male protagonists

and male protagonists whose sexuality was not specified to prompt the three emotions, elevation, admiration or surprise.

We preregistered our initial study on the Open Science Framework, we then conducted a second study in which we aimed to replicate our findings, including some improvements to our emotion manipulation and measures. The two studies had the same hypotheses. All of our materials can be found here https://osf.io/6gwy7/ (Bartoș, Hegarty, & Russell, 2017). Based on prior literature we hypothesized the following.

Preregistered Hypotheses

1. Participants who read elevation-targeting stories have lower levels of homophobia than those who read admiration-targeting or surprise-targeting stories. Participants who read admiration-targeting stories have lower levels of homophobia than those who read surprising stories.
2. Participants who read stories about gay heroes have lower levels of homophobia than those who read the same story with an unmarked hero.
3. Participants who read elevation-targeting stories have lower levels of disgust than those who read admiration-targeting or surprising-targeting stories.
4. The effect of elevation-targeting stories on homophobia is mediated by measured elevation, which is in turn mediated by lowered disgust. Elevation-targeting stories reduce homophobia because they elicit measured elevation, which reduces disgust. (Bartoș et al., 2017)

Study 1: Testing the Elevation-Disgust-Homophobia Path

Methods

Participants. We invited participation from individuals on Prolific Academic who had

previously identified as heterosexual and living in the UK. We initially recruited 604 participants. However, we excluded 11 participants who did not identify as heterosexual in our demographic questionnaire and based the final analyses on 593 participants. The final sample included 298 women and 295 men, whose ages ranged between 18-89 years (M = 37.84, SD = 11.76). They were mostly white, (n = 541, 91.2%). Other ethnicities represented included 26 Asian, 12 Black, 9 Mixed, and 5 participants who preferred not to report. Almost half of participants had a university education (274 participants, 46.2%). The online survey was set to exclude participants from any of the pilots.

Many psychological interventions that reduce homophobia, reveal small-to-medium effect sizes across multiple studies, typically having an effect of about one third to one half of a standard deviation (Bartoș et al., 2014); thus, a sufficient sample size is proposed to achieve a power of .80 when testing a small-to-medium effect size for the first three hypotheses. In a 2x3 ANCOVA with one covariate, a sample size of 600 is enough to detect an effect of f = .13. In the case of the mediation model in hypothesis 4, a sample size of 600 could achieve a power of .80 with even smaller effects (Thoemmes, McKinnon, & Reiser, 2010).

Materials and procedure. We conducted four pilot studies to select news stories that most distinctly induced surprise, admiration, and elevation, respectively (see Bartoș et al., 2017). For each of the pilot studies, participants read stories about exceptional individuals. After each story, they selected one of three emotions they thought most people would feel towards the protagonist; surprise, admiration or elevation. The first pilot examined reactions to ten stories, with the final pilot indicating the three stories that more uniquely elicited the appropriate emotion. All three stories were based on real news reports, originally about a gay man. For surprise, we chose a story about a professional performer who made a living as a mermaid at pool parties. For admiration, we selected a story of a sportsman who rowed across the Atlantic Ocean. For elevation, we picked a story about a nursing student who

offered life-saving first aid during a terrorist attack. We also constructed versions of each story in which the protagonist's sexuality was not disclosed, intending that his sexuality would be presumed as heterosexual-by-default in these conditions (Herek, 2007; Lick & Johnson, 2017). We thus obtained two sets of stories with quasi-identical content but featuring either a gay man or a man of unspecified sexuality. Each story was similar in length, 240-250 words long. They tell a linear story in a few short paragraphs, and include brief quotes from the protagonist.

The study received a favourable ethical opinion from the University Ethics Committee at the University of Surrey (reference: UEC/2017/075/FHMS). After giving their informed consent, each participant read one of six stories shown by the pilot studies to induce *elevation, admiration,* or *surprise*; and featuring either a *gay man* or a man of *unspecified sexuality*. After reading the story, each participant filled in the study measures in the order given below. Participants were fully debriefed once they completed all the measures.

Three multiple-choice questions assessed comprehension and memory of the stimulus text. Each item presented three possible answers to questions about the protagonist of the story being a nursing student, merman, or rower; his sexuality being gay, straight or unspecified; and the plot of the story being about saving someone's life, having an unusual profession, or setting a sporting record.

We measured four emotions experienced when thinking about the protagonist, *elevation, admiration, surprise,* and *disgust*, using 5-point Likert scales ranging from *Not at all* to *Very much*. Mean summary scores were computed for each emotion. Thus, the score for each emotion ranged from 1 to 5, with higher scores indicating a higher intensity of the emotion. All of the emotion measures used were based on previously validated scales. We focused on emotions directed toward the protagonist because feelings and attitudes directed toward specific group members can transfer to perceptions of the whole group (Turner, Crisp

& Lambert, 2007). We also thought it would be best to measure positive emotions (i.e., elevation) in an indirect manner, rather than asking participants how they are currently feeling, which can sometimes obscure incidental emotion effects (Schnall, 2017).

Elevation. We measured elevation using Ellithorpe, Ewoldsen, and Oliver's (2014) checklist, which includes seven emotion labels (*meaningful, inspired, touched, emotional, compassion, moved*). Higher scores on this measure were associated with a stronger sense of positivity and closeness, and lower cynicism (Ellithorpe et al., 2014). This scale had very good internal consistency (Cronbach's $\alpha = .95$)

Admiration. To measure admiration, we used Sweetman, Spears, Livingstone and Manstead's checklist (2013), which includes five emotion labels (*admiration, awe, inspiration, respect, reverence*). Higher scores on this measure were associated with higher appraisals of warmth and competence, and intentions to behave in a way favourable to those admired (Sweetman et al., 2013). This scale had very good internal consistency (Cronbach's $\alpha = .92$)

Surprise. To measure surprise, we used the three emotion labels on the dedicated subscale from PANAS-X (Watson & Clarke, 1994); *amazed, astonished,* and *surprised.* It had good internal consistency (Cronbach's $\alpha = .88$).

Disgust. We measured disgust using measures similar to Gutierrez and Giner-Sorolla (2007) and Russell & Piazza's (2014) instruments, which includes five emotion terms (*disgusted, nauseated, repulsed, sickened, grossed-out*). The scale had very good internal consistency (Cronbach's $\alpha = .95$).

Mood. Participants' general emotional state was measured with a Visual Analogue Mood Scale (VAMS). This single item scale asks people to rate their mood from 0 (sad) to 10

(happy). The utility of such an expedient approach to mood assessment has been argued extensively (Kilgore, 1999; van Rijsbergen, Bockting, Berking, Koeter, & Schene, 2012).

Homophobia. Homophobia was measured with the 12 items of the Modern Homonegativity Scale - Gay Men (MHS-G; Morrison & Morrison, 2002), presented on a 5-point Likert scale. This instrument had very good reliability (Cronbach's $\alpha = .91$).

Results

Data screening and preparation. Scores on individual items were averaged to obtain a summary score for each instrument. All continuous dependent variables approximated a normal distribution in all six groups, except for disgust (see Appendix A for additional analyses). Elevation, admiration, surprise, mood, and homophobia had skewness and kurtosis values of less than one in all six conditions.

Correlations between dependent variables for the entire sample can be found in Table 1. Informing the specificity-versus-generality question, self-reported elevation and admiration were very highly correlated, whilst surprise was more weakly correlated with both elevation and admiration. Additionally, a scale composed of both elevation and admiration items would have very good reliability (Cronbach's $\alpha = .96$), In Appendix B, we further explored the properties of these emotion measures further. Specifically, we performed a confirmatory factor analysis which indicated that a model with three factors (elevation, admiration, and surprise) had a mediocre fit. We made changes to the scales to achieve a model that fit the data well, but scores on the revised scales were almost perfectly correlated with the original ones and did not change our conclusions (see also Appendix C). For these reasons we retained separate measures of these two constructs to assess the pre-registered hypotheses about the specificity of these two positive emotions.

Homophobia was also inversely related to both elevation and admiration, as predicted, whilst surprise was not correlated with homophobia. Disgust was also positively related to homophobia as predicted. However, disgust was not significantly related to either elevation or admiration, but it was positively related to surprise (see Table 1).

Reading comprehension. We assessed participants' comprehension of the stories. We found that 97% correctly identified the protagonist's occupation, and 98% correctly identified the story's plot. However, only 78% correctly identified the characters' sexuality. More specifically, 96% correctly reported the sexuality of the unmarked character (i.e., 284 participants identified that sexuality was not specified). In contrast, only 62% correctly reported the sexuality of the gay character (182 participants); 34% thought his sexuality was not specified (101 participants), and 4% reported that he was described as straight (13 participants). These errors may mirror either the cultural tendency to assume people are heterosexual by default (Herek, 2007; Lick & Johnson, 2017), or a reticence to explicitly report that the hero protagonist was a member of a stigmatized group. The effect of deleting participants with imperfect reading comprehension was explored in Appendix A, but doing so did not change the conclusions drawn from the experiment's results.

Emotion manipulation checks. Measured elevation was found to be significantly different across the emotion conditions, F (2, 590) = 113.14, p <.001, η^2_p = .28, it was highest in those who read elevation stories, compared to those who read admiration stories or surprise stories (see Table 2). Measured admiration was also found to differ by emotion conditions, F (2, 590) = 133.95, p <.001, η^2_p = .31. Surprisingly, it was higher among those who read elevation stories than those who read admiration stories or surprise stories. However, when elevation was added as a covariate, measured admiration was highest among participants who read admiration stories (see Appendix A). Measured surprise was similar across conditions, F (2, 590) = 0.77, p = .46, η^2_p = .003.

Hypotheses 1 and 2. To assess the effect of experimental manipulations on homophobia, we conducted a 3 *emotional content* (surprise vs. admiration vs. elevation) x 2 *sexuality* (gay vs. unmarked) ANCOVA controlling for mood. The effect of mood on homophobia was significant but small, F (1, 586) = 6.41, $p < .05$, $\eta^2 = .011$. All interactions between the covariate and the factors were nonsignificant; thus, the assumption of the homogeneity of regression slopes was met.

The *emotional content* of the story had no effect on homophobia, F (2, 586) = 0.66, $p = .52$, $\eta^2 = .002$. Planned contrasts were used to break down this result. Homophobia was not lower in the elevation condition than in the other two conditions, $p = .30$; nor in the admiration condition than in the surprise condition, $p = .64$. Stories about gay men did not reduce homophobia compared to unmarked stories either, as the main effect of target *sexuality* was not significant, F (1, 586) = 1.25, $p = .26$, $\eta^2 = .002$. The interaction between *emotional content* of the story and protagonist's *sexuality* was nonsignificant, F (2, 586) = 0.67, $p = .51$, $\eta^2 = .002$. Hypothesis 1 and Hypothesis 2 were not supported (means can be found in Table 3).

Hypothesis 3. As preregistered, we conducted a 3 *emotional content* (surprise vs. admiration vs. elevation) x 2 *sexuality* (gay vs. unmarked) ANCOVA on levels of disgust, controlling for mood.

The effect of mood on disgust was marginally significant, F (1, 586) = 2.83, $p = .09$, $\eta^2 = .005$. The *emotional content* of the story had a small effect on disgust, F (2, 586) = 4.59, $p < .05$, $\eta^2 = .015$. Disgust was lower in the admiration story condition than in the surprise story condition, $p = .01$, and marginally lower in the admiration story condition than in the elevation story condition, p=.086, but equivalent in the elevation and surprise story conditions, $p = .84$ (Admiration stories M= 1.07, SE =.04; Surprise stories M = 1.23, SE = .04; Elevation stories M =1.19, SD = .04). Finally, confirming Lai et al.'s (2014)

interpretation of their findings in terms of incidental emotion, there was no significant effect of protagonist's *sexuality*, F (1, 586) = 0.56, p = .45, η^2 = .001; or interaction between *emotion content* and protagonist's *sexuality* on disgust, F (2, 586) = 1.10, p = .33, η^2 = .004 (see Table 3 for means in all conditions).

Hypothesis 4. As preregistered, we performed a conditional process analysis in PROCESS for IBM SPSS in order to assess the roles that measured elevation and disgust might play in mediating the effect of emotion story conditions on homophobia. The model tested is presented in Figure 1A. The full results for this analysis are presented in the online supplement (Table S1). The direct effect of the elevation story condition was to marginally increase homophobia, b = 0.146, p = .057. However, the total effect was nonsignificant, b = - 0.070, p = .309. This was because we also observed a significant effect of story condition mediated by measured elevation that reduced homophobia in the elevation story condition in comparison to homophobia in the admiration and surprise story conditions, β = - .139, 95%CI = [-.193, -.094]. In contrast, the mediated effect through measured disgust (β = - .004, 95%CI = [- .030, .019]) and through measured disgust and elevation (β = .012, 95%CI = [- .002, .028]) were both nonsignificant.

This significant mediated effect of elicited elevation is consistent with Lai et al.'s (2014) findings. However, our design allowed us to ask the additional question of whether admiration would similarly mediate the effect of story condition on homophobia. In addition to our preregistered mediation analysis, we repeated the analysis substituting the mediator of elevation for admiration. The model tested is presented in Figure 1B. The full results for this analysis are presented in the online supplement (Table S2). Here, the direct effect of the elevation story condition on homophobia was nonsignificant, b = 0.065, p = .383; as was the total effect, b = - 0.070, p = .309. Similar to the previous analysis, we found a significant mediated effect for measured admiration, in which admiration reduced homophobia in the

elevation story condition in comparison to the admiration and surprise story conditions, β = -.089, 95%CI = [-.131, -.052]. However, the mediated effects through measured disgust (β = .007, 95%CI = [- .013, .027]) and through measured admiration and disgust (β = .000, 95%CI = [- .012, .009]) were nonsignificant. Thus we reached identical conclusions when we examined the mediating effects of admiration and elevation, both on their own and when examined sequentially with disgust. These results were also robust when exploring different statistical approaches (see Appendix C). Specifically, we used Helmert contrasts (elevation and admiration vs. surprise, and elevation vs. admiration) instead of the simpler coding above. We also used a revise measurement model for the emotions scales (see also Appendix B). These analyses lead to the same conclusions: the effect of the stories, mediated by elevation and admiration, was to decrease homophobia, while the total effect was nonsignificant.

Discussion

The current results used a different method to Lai et al. (2014) and confirmed the authors' claim that incidentally invoked positive other-directed emotions can play a role in reducing homophobia. Effects of stories with gay and assumed-straight protagonists had similar effects. We did not provide evidence that distinguished elevation from admiration or surprise, the concepts as self-reported, were highly overlapping, and similarly induced by these stories. Elevation may not have a unique role in reducing disgust and inhibiting homophobia; however, conditional process analyses found that both measured elevation and measured admiration similarly mediated the effect of the elevation story on homophobia, in comparison to the two other emotion story conditions, and that the direct effect of the elevation inducing story increased homophobia independently of these two positive emotions similarly. Jointly, these results indicate a suppression effect of positive other-directed emotions (MacKinnon, Krull, & Lockwood, 2000): the elevation story increased

homophobia, while simultaneously reducing it through elicited positive emotions. However, results did not show a distinct effect of elevation over admiration. Whilst elevation has been described as disgust's opposite, participants experienced slightly more disgust in the elevation condition than in the admiration condition. Moreover, the predicted sequential effect of measured elevation on disgust leading to lower levels of homophobia was not significant. Thus we found no evidence that these positive emotions work by a mechanism of resetting disgust.

Study 2: Replicating and Expanding the Findings

Study 1 did not evidence a specific effect of elevation on reducing homophobia and disgust but rather it had similar effects as admiration and surprise. We also found similar effects whether the emotions were elicited incidentally or integrally. Additionally, we did not find that the elevation-homophobia relationship was mediated by a sequential relationship through increasing elevation, thereby reducing disgust and homophobia. Instead, converging evidence from self-reported emotion manipulation checks, experimental effects, and mediation models were consistent with the idea that admiration and elevation are similar, even if distinct and not identical emotions, suggesting they are both part of the category of kama muta emotions, characterized by an experience of being moved. Nevertheless, a measurement model with three latent variables (elevation, admiration, and surprise) fit the data better than one with two variables (kama muta and surprise), suggesting that it is valid to distinguish elevation and admiration as separate emotion constructs (see Appendices B and E).

However, four methodological factors would limit confidence in this conclusion, prompting us to conduct an updated version of our study. First, expanding on our emotion manipulation checks, we included an emotion intensity rating as in Study 1 and a forced choice question about the emotion elicited by each story. Second, little disgust was elicited in

Study 1 overall and disgust was lower in the admiration condition than the elevation and surprise conditions, therefore, Study 2 included our original disgust measure and measures of social distance and disgust sensitivity, in order to capture disgust with a wider range of measures. A social distance measure captures general attitudes towards gay men rather than attitudes to the specific protagonist; as disgust is a distancing emotion, social distance is also an indirect behavioural measure of disgust. Disgust sensitivity is also correlated positively with sexual prejudice (Inbar et al., 2009; Kiss et al., 2018). Lai et al. (2014) found that disgust sensitivity had no bearing on the effects they found, and we examined that empirical relationship again here. We also included disgust sensitivity as it has been argued that experimenters need to take into account participants' sensitivity to their bodily states when eliciting emotions, through measures such as private bodily consciousness or disgust sensitivity (Schnall et al., 2015; Schnall, 2017). Third, many participants in Study 1 reported that they did not explicitly recognize the sexual identity of the gay protagonist; therefore, we made the protagonist's sexuality clearer in the vignettes in Study 2.

Fourth, as emotion and manipulation check questions can sometimes influence the measurement of variables presented later (Schnall, 2017; Schwarz & Clore, 1983), we also counterbalanced the order of measures (see further details in methods), in order to ensure that this methodological element did not influence the results. This is important as incidental emotion effects, particularly incidental disgust, have come under recent scrutiny (Giner-Sorolla, Sabo, & Kupfer, 2017; Landy & Goodwin, 2015). Incidental emotion effects, by definition, should occur beyond participants' awareness or in the periphery of their awareness (see Schnall, 2017 for a review), and it is believed that emotions have stronger effects when people are not aware of them (Schwarz & Clore, 1983). For example, Schnall, Haidt, Clore, and Jordan (2015) have argued that there is a small window in which participants should not be aware of the source of the elicited emotion.

Methods

Participants. We sampled UK-residents identified as heterosexual, recruiting 602 Prolific Academic participants. Nine individuals did not identify as heterosexual in an open-ended question and were excluded from the final sample. Among the 588 participants included, there was a roughly equal gender split (291 men, 297 women), with an age range of 18-71 (M = 36.48, SD = 11.29). As in Study 1, participants were mostly of white ethnicity (531 participants). Of the other participants, 32 were Asian, 3 Black, 19 Mixed and 3 preferred not to say. Over half of the participants had completed a university degree or higher qualification (326 individuals). The online survey was set to exclude participants from any of the pilots or Study 1.

Materials. The stories presented to participants were similar to those in Study 1, but we made the target's sexuality more evident by specifying it the title and first paragraph. All measures were identical to those used in Study 1, with the following exceptions:

Emotion manipulation check. We included a forced choice measure to check which emotions were elicited in addition to the emotion rating scales used in Study 1 (completing the rating scales first). Forced-choice items asked: "How do you feel about the person in the story? Please pick the list of words that fits the best." They were provided with the following options: a) *meaningful, inspired, touched, emotional, compassion, moved*; b) *admiration, reverence, inspiration, awe, respect*, and c) *surprised, amazed, astonished*.

Social distance. We measured social distance using the classic scale developed by Emory Bogardus (1925; see also Parillo & Donoghue, 2013). Items present seven scenarios in which participants would interact with a gay man, e.g., "as a close relative by marriage (i.e., as the legal spouse of a close relative)" or "as a neighbour on the same street." Participants rated

their comfort levels in these scenarios on a Likert scale ranging from 1 (very uncomfortable) to 5 (very comfortable). The scale had excellent internal consistency (Cronbach's $\alpha = .97$) when eliminating the most extreme question ("Would exclude from my country").

Disgust propensity. We measured participants' proneness to experience disgust with the Disgust Propensity subscale of the Disgust Propensity and Sensitivity Scale (van Overveld, De Jong, Peters, Cavanagh, & Davey, 2006). Participants were asked to assess eight statements on a Likert scale ranging from 1 (Never) to 5 (Always). Items included "I feel repulsed" and "I become disgusted more easily than other people." The scale had good internal consistency (Cronbach's $\alpha = .86$).

Procedure. The procedure was similar to that in Study 1, except that we added counterbalancing for the measures, since prior research has highlighted that it is useful to do so (Schnall, 2017; Schwarz & Clore, 1983). After giving their informed consent participants first read one of six scenarios, which were randomly assigned. They then filled in the three reading comprehension questions. Participants completed four sets of measures organized into two blocks. One block included emotion measures (comprised of all five emotion measures towards the protagonist, we also included five filler/distractor items- *attentive, bored, nervous, alert, upset,* in order to disguise the purpose of the emotion items further) and the mood measure. Another block included the homophobia and social distance measures. The emotion/mood block and the homophobia/social distance block were presented in randomly assigned orders, and the two types of measures within each block were also presented in randomly assigned orders. Finally, participants filled in the disgust sensitivity measure and demographics. After completing the measures participants were debriefed.

Results

Data screening and preparation. As in Study 1, all variables approximated a normal distribution in all six groups, except for disgust and social distance (see Appendix D for additional analyses). Bivariate correlations between variables across the experiment were also similar to those in Study 1 (see Table 1). Elevation and admiration were again very highly correlated, and both were negatively correlated to homophobia. Surprise showed weaker relationships with the other positive emotions and was not correlated with homophobia, as in Study 1. In Appendix E, we further explored the properties of our emotion measures. As for the data in Study 1, we once again found that the measurement model could be improved, but that would not affect the overall conclusions of our research.

Disgust and social distance were positively related to homophobia, but disgust sensitivity was not related to homophobia. Elevation was positively related to disgust, disgust sensitivity and social distance. Admiration was inversely related to social distance but not related to disgust or disgust sensitivity. As in Study 1, disgust and surprise were positively correlated, surprise was also related to disgust sensitivity but not social distance.

Reading comprehension. As in Study 1, the two questions about the protagonist's occupation and the story's plot were answered correctly by most participants (99% correctly identified both the plot and occupation). Most participants also correctly identified the man of unspecified sexuality, 98% answered correctly (i.e., 288 participants identified no such information was implied). Fewer participants, but a greater number than in Study 1, correctly identified the sexuality of the gay protagonist (80%, 235 participants), 55 participants assumed no such information was implied, and only 5 participants assumed the target was heterosexual. The analyses below were performed on the whole dataset. As in Study 1, the effect of deleting participants with imperfect reading comprehension was explored in

Appendix D, but again this did not impact the results.

Emotion manipulation checks. Measured elevation was found to be significantly different across the emotion conditions, F (2, 585) = 106.52, p <.001, η^2_p = .27. It was highest in those who read elevation stories compared to those who read admiration stories or surprise stories (see Table 2). Measured admiration was also different in the emotion conditions, F (2, 585) = 132.40, p <.001, η^2_p = .31; and it was also highest in the elevation condition (see Table 2). However, similar to Study 1 admiration was highest in the appropriate condition when elevation was controlled for (see Appendix D). Different from Study 1, measured surprise also differed by emotion condition, F (2, 585) = 3.56, p =.03, η^2_p = .01, being highest in response to the admiration stories (see Table 2).

In response to the forced choice question, more participants reported that the story evoked admiration (n = 340), than surprise (n =133), or elevation (n = 115). Overall, the stories evoked admiration almost three times as often as elevation, but elevation was evoked in the elevation condition more than twice as often as in the other two conditions. Surprise was the most commonly reported emotion in the surprise condition, but admiration was the most commonly reported emotion in both the elevation and admiration conditions (see Table 2).

Hypotheses 1 and 2. To assess the effect of experimental manipulations on homophobia, we conducted a 3 *emotional content* (surprise vs. admiration vs. elevation) x 2 *sexuality* (gay vs. unmarked) ANCOVA controlling for mood. The effect of mood on homophobia was marginally significant, F (1, 581) = 3.83, p = .05, η^2 = .007. All interactions between the covariate and the factors were nonsignificant.

The *emotional content* of the story had no main effect on homophobia, F (2, 581) = 0.45, p = .64, η^2 = .002. Planned contrasts further confirmed that homophobia was not lower

in the elevation story condition than in the other two conditions, $p = .66$, nor lower in the admiration story condition compared to the surprising story conditions, $p = .40$. As in Study 1, Hypothesis 1 was not supported here.

In contrast to Study 1, the effect of target *sexuality* was marginally significant, F (1, 581) = 3.87, $p = .05$, $\eta^2 = .007$, with less reported homophobia when the target was identified as being gay. This effect in Study 2 became non-significant when taking into account reading comprehension scores (see Appendix D). As this effect was marginal, and not observed in Study 1, we describe its theoretical and practical significance in the discussion. As in Study 1, the interaction between *emotion content* and target *sexuality* was nonsignificant, F (2, 581) = 0.19, $p = .83$, $\eta^2 = .001$ (all means can be found in Table 3).

We also added disgust propensity as a covariate in the ANCOVA described above, replacing mood. The effect of disgust propensity on homophobia was nonsignificant, F (1, 581) = 0.15, $p = .704$, $\eta^2 < .001$, replicating Lai et al.'s (2014) finding. The effect of emotional content and the two-way interaction were both non-significant, both $p > .70$, while the effect of target sexuality remained marginally significant, F (1, 581) = 3.64, $p = .06$, $\eta^2 = .006$.

Hypothesis 3. To assess the effect of experimental manipulations on disgust, we conducted a 3 *emotional content* (surprise vs. admiration vs. elevation) x 2 *sexuality* (gay vs. unmarked) ANCOVA controlling for mood on disgust scores. The effect of mood on disgust was non-significant, F (1, 581) = 0.15, $p = .70$, $\eta^2 < .001$. The *emotional content* of the story had an effect on disgust, F (2, 581) = 8.589, $p < .001$, $\eta^2 = .029$. Planned contrasts showed that disgust was higher in the elevation story condition than in the admiration and surprise story conditions, $p < .001$; but that these two conditions did not differ from each other, $p = .20$ (Admiration stories M= 1.10, SD =.39; Surprise M = 1.16, SD = .48; Elevation stories M =1.30, SD = .59). There was no significant effect of target *sexuality* on disgust, F (1, 581) =

0.367, $p = .545$, $\eta^2 = .001$; mood, F (1, 581) = 0.150, $p = .699$, $\eta^2 < .001$; or interaction between *emotion content* and target *sexuality* on disgust, F (2, 581) = 1.828, $p < .162$, $\eta^2 = .006$ (all means are reported in Table 3).

Finally, we conducted a 3 emotional content (surprise vs. admiration vs. elevation) x 2 sexuality (gay vs. unmarked) ANCOVA controlling for mood on social distance scores. Neither of the main effects (emotion content and sexuality), nor the two-way interaction were found to be significant, all $p > .32$.

Hypothesis 4. We performed a conditional process analysis in PROCESS for IBM SPSS in order to assess the mediating role of measured elevation and disgust in the effect of emotion story condition on homophobia independently, as well as sequentially. The model tested is presented in Figure 1A. The full results for this analysis are presented in the online supplement (Table S3). The direct effect of emotion story condition was nonsignificant, $b = 0.130$, $p = .087$; as was the total effect, $b = - 0.029$, $p = .661$. Similar to Study 1, we found a significant effect of emotion story condition mediated by measured elevation that reduced homophobia in the elevation story condition in comparison to the admiration and surprise story conditions, $\beta = - .121$, 95%CI = [-.172, -.077]. However, the mediated effect through measured disgust ($\beta = .018$, 95%CI = [.003, .041]) and through measured elevation and disgust ($\beta = .008$, 95%CI = [.001, .021]) was to increase homophobia in the elevation story condition in comparison to the admiration and surprise story conditions.

Similar to Study 1, we repeated the previous analysis entering measured admiration as a mediator rather than elevation to assess if these positive emotions had similar or unique effects. The model tested is presented in Figure 1B. The full results for this analysis are presented in the online supplement (Table S4). The direct effect of emotion story condition on homophobia was nonsignificant, $b = 0.064$, $p = .379$, and the total effect, $b = - 0.029$, $p = .661$. We found a significant mediated effect of measured admiration, with admiration

reducing homophobia in the elevation story condition in comparison to the surprise and admiration story conditions, β = - .079, 95%CI = [-.117, -.046]. While, measured disgust increased homophobia (β = .022, 95%CI = [.007, .044]) in the elevation story condition in comparison to the other emotional content story conditions. However, the mediated effect through measured admiration and disgust was nonsignificant (β = .001, 95%CI = [- .003, .007]). Therefore, measured admiration and elevation alone had similar effects, as in Study 1. In terms of the hypothesized sequential relationship through both measured elevation and disgust actually increased homophobia, whilst when admiration was included the result was non-significant.

Similar to Study 1, our conclusions from these results were robust even after exploring different statistical approaches. We tested the same range of alternative models as in Study 1, and obtained similar results (see Appendix F). A different operationalisation of the independent variable in the mediation models gave no reason to question the conclusion that the stories reduce homophobia through elevation, whilst their total effect is nonsignificant.

Discussion

Study 2 replicated Study 1 with several methodological improvements. We counterbalanced the order in which we presented prejudice measures and emotion and mood measures. This procedural change, however, did not influence our conclusions. We also included a wider range of disgust measures, a forced choice measure of the manipulated emotions and improved our scenarios. By addressing potential criticisms that arise in the experimental research of emotions, the current results strengthen our conclusion that the effects of evoked elevation and admiration on homophobia are similar, subtle and not dependent upon the sexuality of the 'hero' who evokes those emotions. Replicating Lai et

al.'s (2014) research, we also found no evidence that disgust sensitivity impacted the results.

General Discussion

Prior research has posited that inducing incidental elevation may be a promising technique to reduce homophobia because elevation is uniquely the opposite of disgust in social relations (Haidt, 2003; Lai et al. 2014), and disgust has a particular relationship to homophobia (e.g., Haidt & Hersch, 2001; Herek, 2009; Inbar, Pizarro, Knobe, & Bloom, 2009; Nussbaum, 2004; Royzman, Leeman, & Sabini, 2008). We conducted two experiments to assess this claim, comparing an elevation induction to an admiration induction and a surprise induction. Neither experiment showed the hypothesized simple main effect by which an elevation story would reduce measured homophobia as in Lai et al.(2014), over and above other emotion inductions (Hypothesis 1).

Also, as in Lai et al (2014), the effects of emotion were *incidental,* being just as strong when the stories' hero protagonist was heterosexual as when he was gay. We did not find that exposure to gay heroes reduced homophobia over and above a hero whose sexuality was not specified (Hypothesis 2). However, in Study 2 we found a small effect by which reading about a gay hero resulted in lower levels of self-reported homophobia than reading about a hero whose sexuality was not specified, but this effect became non-significant when taking into account reading comprehension scores (see Appendix D). Also, in our second study, we did not find that any of the emotions elicited or the target's sexuality had a unique impact on a measure of social distance (i.e., perceived comfort with having contact with a gay man), which can be argued to be an indirect measure of both disgust and homophobia. In sum, the data suggest that it is not necessary to categorize a hero as gay to elicit these emotions and reduce homophobia.

The current research did not support the idea that elevation has specific effects on

reducing disgust (Hypothesis 3). The elevation story elicited more disgust than the admiration story, and this effect was marginal in Study 1 and significant in Study 2. In Study 2 we expanded the range of disgust measures to include a measure of social distance and disgust sensitivity. We did not find that social distance differed by the emotion inductions either. Additionally, as in Lai et al. (2014), the relationship between disgust propensity and homophobia was not significant here.

Finally, we did not find evidence of Lai et al.'s (2014) proposed pathway of increased elevation leading to lowered disgust leading to lowered homophobia (Hypothesis 4). Rather, we found that measured positive emotion – whether elevation or admiration – mediated the reduction of homophobia in the elevation story condition. In Study 2, the sequential path including measured elevation and disgust resulted in a slight increase in homophobia. These findings may be better understood within the kama muta framework than through the idea of elevation uniquely resetting or blocking disgust as put forward by Haidt (2003).

Implications and Future Research

First, the current results suggest that admiration and elevation are distinct but overlapping emotions, having similar impacts on homophobia, which suggests they may both fall under the umbrella term of kama muta (see Zickfeld et al., 2019, for a review). Second, the ways that the elevation story moved participants were not simply positive, as the elevating story elicited more disgust than the admiration story. Kama muta has been described as a mixed emotion, which is sometimes comprised of both positive and negative feelings (Zickfeld et al., 2019). Perhaps helping victims of a terrorist attack elicited core disgust in response to the attack event itself and/or other gruesome details (e.g., blood), and the elevating experience of reading about the protagonist's heroism was somewhat contingent upon experiencing the event as disgusting, as such events can elicit feelings of both core and

moral disgust. Indeed, stories of heroism that are worthy of elevation often take place against a background that sets challenges which a hero overcomes in the course of the story. In addition to the main effects of condition, this evocation of stories evoking mixed emotion - rather than positive emotions blocking or resetting negative ones – is more consistent with findings that measures of disgust and elevation were either uncorrelated (Study 1) or positively correlated (Study 2).

The current findings add to mounting evidence that positive emotions can counteract prejudice in general, and specific emotions have been identified as having unique effects (Smith & Mackie, 2016; Turner et al., 2012; Van de Vyver & Abrams, 2015). However, it is important to better understand if positive emotions have these effects creating distinct mixtures with negative emotions or prompting distinct narrative explanations, rather than directly blocking such negative emotions as disgust which can accompany prejudice. For instance, when people report their experiences of anti-homophobia interventions, surprise and disgust are common themes, but the lesbian, gay, and bisexual people positioned as targets in these interventions evoke positive emotions also (Bartoș & Hegarty, 2019). Research is also needed to disentangle the core appraisals of sociability, competence, and morality when eliciting positive moral emotions, as all three of these dimensions are critical to social perception (Goodwin et al., 2014). It is a corollary of the focus of research on negative moral emotions (Haidt & Morris, 2009), that there is a gap in our understanding of what the core appraisals of positive emotions actually are.

Finally, in Study 1, we found no effect of target sexuality on homophobia and in Study 2, participants who read about gay heroes reported only marginally less homophobia. This effect in Study 2 became non-significant when taking into account reading comprehension scores. Study 2 also found no effect of the target's sexuality on social distance. Jointly these findings support Lai et al's (2014) claims that there are effects of

incidental positive emotions on homophobia, which suggests that interventions eliciting positive emotions do not need to mention gay men. This finding has practical relevance, as the impact of delivering homophobia interventions can itself be risky and stressful in particular ways for openly lesbian, gay and bisexual people.

Limitations

There are some limitations to this research that need to be highlighted. Whilst we conducted extensive pilot research when creating the emotion manipulations, it should be acknowledged that the elevation story still elicited more intense emotions than the admiration and surprise stories. Additionally, within both the elevation and admiration conditions levels of admiration were higher than both surprise and elevation. This seems to be a general issue with many techniques to elicit emotions (e.g., videos), not a distinct feature of our research, as emotions frequently co-occur.

Additionally, in our research, we utilized indirect emotion manipulation check and reading comprehension items, because of our interest in incidentally induced emotion. But of course there are other methods that can be used. It could be argued that our manipulation check item assessing the perceived sexuality of the target interrupted the usual heterosexual-by-default assumption in the unspecified sexuality conditions, rendering the emotion in these conditions less incidental to homophobia than intended. However, given that clear information that the target was gay in Study 1 did not always interrupt this cultural assumption, this risk may not be large.

Another limitation is that we used three emotion comparison conditions in our design, as we had theoretical reason to include the three emotion comparison conditions, but it would have been useful to compare the emotion conditions to a true baseline condition. Additionally, in the current research we utilized self-report measures of emotions and of homophobia; therefore, we cannot conclusively say whether our manipulations would have a

similar impact on more implicit biases, which Lai et al. (2014) included. This issue also raises the query of how to measure positive moral emotions. We opted to used validated emotion checklists, which include emotion word synonyms; however, there are other way to measure these emotions such as physiological responses or motivational tendencies (see Pohling & Diesner, 2016; Thomson & Siegel, 2017; van de Vyver & Abrams, 2015 for reviews). It also highlights the issue of how much these emotion terms do overlap, for instance, compassion is included in the checklist for elevation, which leads to the question of whether these emotions are distinct or similar (Zickfeld et al., 2019).

Finally, it has been argued that incidental emotions, especially disgust, are more likely to have an effect when the target scenarios that are being evaluated are moderate rather than extreme in nature (Schnall, 2017). Because homophobia is an increasingly modern prejudice and likely to be moderate to weak in intensity, it presents a good opportunity to test the effects of elevation, as in the present paper and in Lai et al. (2014). However, to test this assumption, future research should test the utility of elevation in comparison to other positive emotions in a more extreme disgust-based prejudice.

Conclusion

The current research did not support the idea that elevation has unique effects on reducing disgust and homophobia, but rather we found elevation to be quite similar to elicited admiration and surprise. We hope that our results will stimulate further research into the role that positive moral emotions play in social exclusion, particularly homophobia, such as whether or not these emotions have distinct effects.

References

Algoe, S., & Haidt, J., (2009). Witnessing excellence in action: The other-praising emotions of elevation, admiration, and gratitude. *Journal of Positive Psychology, 4,* 105-127.

Bartoș, S. E., Berger, I., & Hegarty, P. (2014). Interventions to reduce sexual prejudice: A study-space analysis and meta-analytic review. *Journal of Sex Research, 51*, 363-382.

Bartoș, S.E., & Hegarty, P. (2019). Negotiating theory when doing practice: A systematic review of qualitative research on interventions to reduce homophobia. *Journal of Homosexuality, 66*, 1262-1286.

Bartoș, S. E., Hegarty, P., & Russell, P. S. (2017, November 1). Heroes against Homophobia. Retrieved from osf.io/6gwy7

Bogardus, E.S (1925). Measuring social distances. *Journal of Applied Sociology, 9*, 299-308.

Bryant, K., & Vidal-Ortiz, S. (2008). Introduction to retheorizing homophobias. *Sexualities, 11*, 387-396.

Buck, D. M., Plant, E. A., Ratcliff, J., Zielaskowski, K., & Boerner, P. (2013). Concern over the misidentification of sexual orientation: Social contagion and the avoidance of sexual minorities. *Journal of Personality and Social Psychology, 105*, 941-960.

Chapman, H. A., & Anderson, A. K. (2013). Things rank and gross in nature: A review and synthesis of moral disgust. *Psychological Bulletin, 139*(2), 300-327.

Cottrell, C. A., & Neuberg, S. L. (2005). Different Emotional Reactions to Different Groups: A Sociofunctional Threat-Based Approach to "Prejudice". *Journal of Personality and Social Psychology, 88*(5), 770-789.

Cova, F., & Deonna, J. A. (2014). Being moved. *Philosophical Studies, 169(3)*, 447–466.

Crandall, C. S., & Eshleman, A. (2003). A justification-suppression model of the expression and experience of prejudice. *Psychological Bulletin, 129*, 414-446.

Dasgupta, N., DeSteno, D., Williams, L. A., & Hunsinger, M. (2009). Fanning the flames of prejudice: The influence of specific incidental emotions on implicit prejudice. *Emotion, 9*(4), 585-591.

Ellithorpe, M., Ewoldsen, D. R., Oliver, M. B. (2015). Elevation (sometimes) increases altruism: Choice and number of outcomes in elevating media effects. *Psychology of Popular Media Culture, 4*, 236-250.

Fiske, S. T., Cuddy, A. J., Glick, P., Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*, 878–902.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. American psychologist, 56(3), 218-226.

Frost, D. M., Lehavot, K., Meyer, I. H. (2015). Minority stress and physical health among sexual minority individuals. *Journal of Behavioral Medicine, 38*, 1-8.

Giner-Sorolla, R., Kupfer, T., & Sabo, J. (2018). What makes moral disgust special? An integrative functional review. *Advances in Experimental Social Psychology, 57*, 223-289.

Goodwin, G. P., Piazza, J., & Rozin, P. (2014). Moral character predominates in person perception and evaluation. *Journal of Personality and Social Psychology*, *106*, 148-168.

Gutierrez, R. & Giner-Sorolla, R. (2007). Anger, disgust, and presumption of harm as reactions to taboo-breaking behaviors. *Emotion, 74*, 853-868.

Haidt, J. (2001). The emotional dog and its rational tail: a social intuitionist approach to moral judgment. *Psychological Review, 108*, 814-834.

Haidt, J. (2003). The moral emotions. In R.J Davidson, K.R. Scherer, & H. H Goldsmith, *Handbook of affective sciences* (pp. 852-870). Oxford: Oxford University Press.

Haidt, J., & Hersch, M.A. (2001). Sexual morality: The cultures and reasons of liberals and conservatives. *Journal of Applied Social Psychology, 31*, 191-221.

Haidt, J., & Morris, J.P. (2009). Finding the self in self-transcendent emotions. *Proceedings of the National Academy of Sciences, 106*, 7687-7688.

Hatzenbuehler, M. L. (2009). How does sexual minority stigma “get under the skin”? A psychological mediation framework. *Psychological Bulletin, 135*, 707-730.

Hegarty, P. (2018). *A recent history of lesbian and gay psychology: From homophobia to LGBT.* London: Routledge.

Herek, G. M. (1987). Can functions be measured? A new perspective on the functional approach to attitudes. *Social Psychology Quarterly, 50*, 285-303.

Herek, G.M. (1994). Assessing heterosexuals’ attitudes toward lesbians and gay men: A review of empirical research with the ATLG scale. In B. Greene & G.M. Herek (Eds.), *Lesbian and gay psychology: Theory, research, and clinical applications* (pp. 206–228). Thousand Oaks, CA: Sage.

Herek, G.M. (2004). Beyond "homophobia": Thinking about sexual prejudice and stigma in the twenty-first century. *Sexuality Research and Social Policy, 1*(2), 6-24.

Herek, G. M. (2007). Confronting sexual stigma and prejudice: Theory and practice. *Journal of Social Issues, 63*, 905-925.

Hudson, W. W., & Ricketts, W. A. (1980). A strategy for the measurement of homophobia. *Journal of Homosexuality, 5*, 357-372.

Inbar, Y., Pizarro, D. A., Knobe, J., & Bloom, P. (2009). Disgust sensitivity predicts intuitive disapproval of gays. *Emotion*, *9*(3), 435-439.

Inbar, Y., Pizarro, D. A., & Bloom, P. (2012). Disgusting smells cause decreased liking of gay men. Emotion, 12(1), 23-27.

Killgore, W.D.S. (1999). The visual analogue mood scale: Can a single-item scale accurately classify depressive mood state? *Psychological Reports, 85*, 1238–1243.

Kiss, M. J., Morrison, M. A., & Morrison, T. G. (2018). A meta-analytic review of the association between disgust and prejudice toward gay men. *Journal of Homosexuality*. Advance online publication. https://doi.org/10.1080/00918369.2018.1553349

Lai, C. K., Haidt, J., & Nosek, B. A. (2014). Moral elevation reduces prejudice against gay men. *Cognition & Emotion, 28*, 781-794.

Landy, J. F., & Goodwin, G. P. (2015). Does Incidental Disgust Amplify Moral Judgment? A Meta-Analytic Review of Experimental Evidence. *Perspectives on Psychological Science, 10*, 518–536.

Lick, D. J., & Johnson, K. L. (2016). Straight until proven gay: A systematic bias toward straight categorizations in sexual orientation judgments. *Journal of Personality and Social Psychology*, *110*, 801-817.

Mackie, D. M., Devos, T., & Smith, E. R. (2000). Intergroup emotions: Explaining offensive action tendencies in an intergroup context. *Journal of Personality and Social Psychology, 79*, 602-616.

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention Science, 1*, 173-181.

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological Bulletin, 129*, 674-697.

Morrison, M.A., & Morrison, T.G. (2002). Development and validation of a scale measuring modern prejudice toward gay men and lesbian women. *Journal of Homosexuality, 43*, 15-37.

Neisen, J. H. (1990). Heterosexism: Redefining homophobia for the 1990s. *Journal of Gay & Lesbian Psychotherapy,1*(3), 21-35.

Nussbaum, M. (2004). *Hiding from humanity: Disgust, shame, and the law.* Princeton: Princeton University Press.

Olatunji, B. O., Berg, H. E., & Zhao, Z. (2017). Emotion regulation of fear and disgust: differential effects of reappraisal and suppression. *Cognition and Emotion, 31*(2), 403-410.

Onu, D., Kessler, T., & Smith, J. R. (2016). Admiration: A conceptual review. *Emotion Review, 8*, 218-230.

Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions*. New York, NY: Cambridge University Press.

Parrillo, V. N., & Donoghue, C. (2013). The national social distance study: Ten years later. *Sociological Forum, 28*, 597-614.

Pohling, R., & Diessner, R. (2016). Moral elevation and moral beauty: A review of the empirical literature. *Review of General Psychology, 20*, 412–425.

Royzman, E. B., Leeman, R. F., & Sabini, J. (2008). "You make me sick": Moral dyspepsia as a reaction to third-party sibling incest. *Motivation and Emotion, 32*, 100-108.

Rozin, P. (2008). Hedonic adaptation: Specific habituation to disgust/death elicitors as a result of dissecting a cadaver. *Judgment and Decision Making, 3*, 191-194.

Russell, P. S., & Giner-Sorolla, R. (2013). Bodily moral disgust: What it is, how it is different from anger, and why it is an unreasoned emotion. *Psychological Bulletin*, *139*, 328-351.

Schnall, S. (2017). Disgust as embodied loss aversion. *European Review of Social Psychology, 28*, 50-94.

Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. H. (2008). Disgust as embodied moral judgment. *Personality and Social Psychology Bulletin, 34*, 1096-1109.

Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. H. (2015). Landy and Goodwin (2015) confirmed most of our findings then drew the wrong conclusions. *Perspectives on Psychological Science, 10*, 537-538.

Seger, C. R., Banerji, I., Park, S. H., Smith, E. R., & Mackie, D. M. (2017). Specific emotions as mediators of the effect of intergroup contact on prejudice: Findings across multiple participant and target groups. *Cognition and Emotion, 31*, 923-936.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology, 45*(3), 513-523.

Sherill, K., & Yang, A. (2000). From outlaws to in-laws: Anti-gay attitudes thaw. *The Public Perspective, 11*, 20–23.

Silvers, J. & Haidt, J. (2008). Moral elevation can induce nursing. *Emotion, 2*, 291-295.

Smith, E. R., & Mackie, D. M. (2016). Group-level emotions. *Current Opinion in Psychology, 11*, 15-19.

Sweetman, J., Spears, R., Livingstone, A.G, & Manstead, A.S.R. (2013). Admiration regulates social hierarchy: Antecedents, dispositions, and effects on intergroup behavior. *Journal of Experimental Social Psychology*, *49*, 534-542.

Thoemmes, F., MacKinnon, D. P., & Reiser, M. R. (2010). Power analysis for complex mediational designs using Monte Carlo methods. *Structural Equation Modeling, 17*, 510-534.

Thomson, A.L. & Siegel, J.T. (2017). Elevation: A review of scholarship on a moral and other-praising emotion. *The Journal of Positive Psychology, 12*, 628-638.

Turner, R. N., Crisp, R. J., & Lambert, E. (2007). Imagining intergroup contact can improve out-group attitudes. *Group Processes and Intergroup Relations, 10*, 427–441.

Turner, R. N., Wildschut, T., & Sedikides, C. (2012). Dropping the weight stigma: nostalgia improves attitudes toward persons who are overweight. *Journal of Experimental Social Psychology, 48*, 130-137.

Tybur, J. M., Lieberman, D., & Griskevicius, V. (2009). Microbes, mating, and morality: individual differences in three functional domains of disgust. *Journal of Personality and Social Psychology, 97*, 103-122.

Van de Vyver, J., & Abrams, D. (2015). Testing the prosocial effectiveness of the prototypical moral emotions: Elevation increases benevolent behaviors and outrage increases justice behaviors. *Journal of Experimental Social Psychology, 58*, 23-33.

Van Overveld, W. J. M., De Jong, P. J., Peters, M. L., Cavanagh, K., & Davey, G. C. L. (2006). Disgust propensity and disgust sensitivity: Separate constructs that are differentially related to specific fears. *Personality and Individual Differences, 41*(7), 1241-1252.

van Rijsbergen, G.D., Bockting, C.L.H., Berking, M., Koeter, M.W.J., Schene, A.H. (2012). Can a One-Item Mood Scale Do the Trick? Predicting Relapse over 5.5-Years in Recurrent Depression. *PLoS ONE 7, 10*, e46796.

Vasiljevic, M., & Crisp, R. J. (2013). Tolerance by surprise: Evidence for a generalized reduction in prejudice and increased egalitarianism through novel category combination. *PLOS ONE, 8,* e57106.

Watson, D., & Clark, L. A. (1994). *The PANAS-X: Manual for the positive and negative affect schedule-expanded form*. Ames, IA: The University of Iowa.

World Values Survey Associations. (2015). *Wave 6 2010-2014 official aggregate (Version 20150418)* [Data file and code book]. Madrid: Asep/JDS.

Zickfeld, J. H., Schubert, T. W., Seibt, B., & Fiske, A. P. (2019). Moving through the literature: what is the emotion often denoted being moved? *Emotion Review, 11*, 123–139.

Appendix A. Additional Analyses for Study 1

Emotion Manipulation Checks. To further explore the surprising finding that measured admiration was highest in the elevation story condition, we performed two analyses of covariance. First, measured elevation was found to be significantly different across the emotion conditions when admiration was controlled for, F (2, 589) = 39.97, p <.001, η^2_p = .12 (marginal means by condition: admiration M = 2.43, SE = .04; elevation M = 2.98, SE =.05; surprise M = 2.75, SE = .05). Second, measured admiration was different in the emotion conditions when elevation was controlled for, F (2, 589) = 57.02, p <.001, η^2_p = .16 (marginal means by condition: admiration M = 3.41, SE = .04; elevation M = 3.16, SE =.05; surprise M = 2.75, SE = .05).

Hypotheses 1 and 2. When deleting participants with imperfect scores on the sexuality reading comprehension question (final N = 466), results were virtually unchanged. As before, the effect of mood was the only significant effect, F (1, 459) = 4.94, p <.05, η^2 = .01, all other p > .27.

Hypothesis 3. As per Hypothesis 1 and 2, we repeated the analysis only including participants with perfect reading comprehension scores. In these analyses, the small effect of *emotional content* became marginally significant, F (2, 459) = 2.98, p = .05, η^2 = .01, and the main effect of protagonist's sexuality and the two-way interaction remained non-significant, both p > .52.

We also dichotomized the disgust measure (0 – no disgust; 1 – some disgust), since 86% of the participants had the minimal possible score and found those who read about a gay man were as likely (15%) to express any disgust than those who read an unmarked story (14%), χ^2 (1) = 0.138, p = .710. However, participants who experienced some disgust were not equally distributed across the three emotional content conditions, χ^2 (2) = 19.385, p <

.001. More specifically, 17% of those who read elevation stories, 19% of those who read surprise stories, and 5% of those who read admiration stories experienced some disgust.

Hypothesis 4. Given the skewness of the disgust measure, we dichotomized it as per Hypothesis 3. PROCESS, however, cannot manage dichotomous mediators. Therefore, we performed this additional analysis with the *lavaan* package for R 3.5.0. Again, the path through elevation decreased homophobia $\beta = -.125$, $p < .001$; while the path through disgust was nonsignificant, $\beta = .032$, $p = .210$. The double-mediated effect ($\beta = -.002$, $p = .867$), the direct effect ($\beta = .053$, $p = .273$) and the total effect ($\beta = -.042$, $p = .300$) were all nonsignificant.

Appendix B. Exploring the properties of the elevation and admiration scales in Study 1

The established scales we drew from the literature to measure elevation and admiration contained items that were phrased quasi-identically ("inspired" and "inspiration", respectively). To explore the possibility that these items affected our capacity to distinguish between elevation and admiration, we eliminated the relevant items from both scales.

When the two items were not included, a model with three latent variables (elevation, admiration, and surprise) fit the data better than when both scales had inspiration items, $\chi^2 (25) = 283.30$, $p < .001$. This three-factor model was still a better fit than a two-factor model (kama muta and surprise), $\chi^2 (2) = 376.84$, $p < .001$. However, the fit of this improved three-factor model was still not excellent, CFI = .950, TLI = .937, RMSEA = .097.

Given the imperfect fit of the revised measurement model, we examined the modification indices. We found that the model failed to account for the covariances of several items. Within each of the three scales (elevation, admiration, surprise) we identified the covariance with the highest modification index and included it in a revised model.

Specifically, these were the covariances of "touched" and "meaningful" (within the elevation scale), "admiration" and "respect" (within the admiration scale) and "surprised" and "astonished" (within the surprise scale). This revised model had a good fit, CFI = .975, TLI = .966, RMSEA = .070. This revised model fit the data better than a more complex model where admiration and elevation loaded on an underlying (kama muta) latent variable, χ^2 (3) = 172.04, $p < .001$.

While the revised model above seems to be the best fit for the data, the elevation and admiration scores it produces are almost identical to those given by the original scales. The correlations are almost perfect: for elevation r (591) = .99, $p < .001$; for admiration, r (591) = .98, $p < .001$.

Appendix C. Exploring more complex mediation models in Study 1

In our initial mediation models (see Figure 1), we used a dichotomous variable (elevation stories vs. other stories) as a predictor. In order to compare elevation stories with admiration stories, we coded our three story conditions (elevation v admiration v surprise) as Helmert contrasts, and used the resulting two dummy variables in a similar mediation model. Specifically, for the first dummy variable, elevation, admiration, and surprise inducing stories were coded as 1, 1, and -2, respectively (kama muta v surprise contrast). For the second dummy variable, they were coded as 1, -1, and 0, respectively (elevation v admiration contrast). We performed the analyses above using elevation scores computed from the revised measurement model (see Appendix B). These analyses aim to replicate the analyses under Hypothesis 4 in the main text of the article and in Appendix A.

First, we tested the model in Figure 1A. The kama muta vs. surprise contrast had the direct effect to increase homophobia, $\beta = 0.157$, $p = .001$. Its mediated effect through disgust was to decrease homophobia, $\beta = -.087$, $p = .002$; through elevation, to decrease homophobia, $\beta = -.121$, $p < .001$. The double mediation ($\beta = .013$, $p = .214$) and the total

effect (β = -.038, p = .349) were nonsignificant. The elevation vs. admiration contrast had no direct (β = - .023, p = .459) or total effect (β = -.027, p = .533). Mediated by disgust, it increased homophobia, β = .086, p = .007; mediated by elevation, it decreased homophobia, β = - .100, p < .001. The double mediation had no effect, β = .011, p = .216.

We then tested the model in Figure 1B. The kama muta vs. surprise contrast had the direct effect to increase homophobia, β = 0.162, p = .001. Its mediated effect through disgust was to decrease homophobia, β = - .077, p = .005; through admiration, to decrease homophobia, β = - .127, p < .001. The double mediation (β = .005, p = .690) and the total effect (β = -.038, p = .349) were nonsignificant. The elevation vs. admiration contrast had no direct (β = - .067, p = .175) or total effect (β = -.027, p = .533). Mediated by disgust, it increased homophobia, β = .092, p = .003; mediated by admiration, it decreased homophobia, β = - .053, p < .001. The double mediation had no effect, β = .002, p = .691.

We conclude that our previous results are stable across measurement approaches. Elevation stories decrease homophobia through experienced elevation but may increase it through other paths, resulting in a null total effect. Experienced admiration is very closely related to elevation, it works similarly as a mediator of the effect of stories on homophobia.

Appendix D. Additional Analyses for Study 2

Emotion Manipulation Checks. As in Study 1, we performed two analyses of covariance to explore the surprising finding that measured admiration was highest in the elevation story condition. First, measured elevation was found to be significantly different across the emotion conditions when admiration was controlled for, F (2, 584) = 44.21, p <.001, η^2_p = .13 (marginal means by condition: admiration M = 2.27, SE = .04; elevation M = 2.79, SE =.04; surprise M = 2.58, SE = .05). Second, measured admiration was different in the emotion conditions when elevation was controlled for, F (2, 584) = 66.02, p <.001, η^2_p =

.18 (marginal means by condition: admiration $M = 3.31$, $SE = .04$; elevation $M = 2.96$, $SE = .04$; surprise $M = 2.65$, $SE = .04$).

Hypotheses 1 and 2. Similar to Study 1, we re-ran the original ANCOVA controlling for mood, including only the 523 participants that answered the sexuality reading comprehension question correctly. The effect of the covariate of mood, $F\ (1, 516) = 2.45$, $p = .12$, $\eta^2 = .005$, and the effect of protagonist sexuality, $F\ (1, 516) = 1.61$, $p = .21$, $\eta^2 = .003$, were both nonsignificant, but results were otherwise unchanged (all $p > .83$).

Hypothesis 3. We then repeated the analysis only including participants who correctly identified the protagonist's sexuality. The effect of protagonist sexuality, the two-way interaction, and the effect of the covariate mood were nonsignificant, all $p > .16$. The effect of the emotional content of stories remained significant, $F\ (2, 516) = 6.86$, $p = .001$, $\eta^2 = .026$, and in the same direction. Therefore, Hypothesis 3 was not supported. Contrary to the prediction, less disgust was reported in the admiration condition.

Our measure of disgust was extremely skewed, as 78% of the participants had the minimal possible score on disgust. We therefore dichotomized this measure (0 -no disgust; 1 – some disgust). Participants who experienced some disgust were not equally distributed across the three stories, $\chi^2\ (2) = 35.852$, $p < .001$. More specifically, 35% of those who read elevation stories, 21% of those who read surprise stories, and 10% of those who read admiration stories experienced some disgust. Those who read about a gay man were less likely (18%) to express any disgust than those who read an unmarked story (26%), $\chi^2\ (1) = 4.564$, $p < .05$.

The social distance scale was similarly skewed as disgust: 61% of participants had the minimum score. Social distance scores were dichotomized, and an equal number of participants reported some social distance towards gay men across the three story conditions,

χ^2 (2) = 0.005, p = .998, and across the two protagonist sexuality conditions, χ^2 (1) = 0.005, p = .814.

Hypothesis 4. Given the skewness of the disgust measure, we dichotomized it as above. PROCESS, however, cannot manage dichotomous mediators. Therefore, we performed this additional analysis with the *lavaan* package for R3.5.0. Again, the path through elevation decreased homophobia β = -.123, p < .001; while the path through disgust increased it, β = .066, p < .01. The double-mediated effect (β = .010, p = .236), the direct effect (β = .030, p = .547) and the total effect (β = -.017, p = .690) were all nonsignificant.

Appendix E. Exploring the properties of the elevation and admiration scales in Study 2

In this appendix, we present the results for the analyses from Appendix B performed on data from Study 2. Recall that the elevation and admiration scales each contained a quasi-identical item (inspired/inspiration). When the two items were not included, a model with three latent variables (elevation, admiration, and surprise) fit the data better than when both scales had inspiration items, χ^2 (25) = 362.69, p < .001. This three-factor model was still a better fit than a two-factor model (kama muta and surprise), χ^2 (2) = 297.48, p < .001. However, the fit of this improved three-factor model was still not excellent, CFI = .944, TLI = .929, RMSEA = .093.

Given the imperfect fit of the revised measurement model, we examined the modification indices. We found that the model failed to account for the covariances of several items. Within each of the three scales (elevation, admiration, surprise) we identified the covariance with the highest modification index and included it in a revised model. Specifically, these were the covariances of “touched” and “meaningful” (within the elevation scale), “admiration” and “respect” (within the admiration scale) and “surprised” and

"astonished" (within the surprise scale). This revised model had a good fit, CFI = .969, TLI = .959, RMSEA = .070. This revised model fit the data better than a more complex model where admiration and elevation loaded on an underlying (kama muta) latent variable, χ^2 (3) = 144.75, $p < .001$.

While the revised model above seems to be the best fit for the data, the elevation and admiration scores it produces are almost identical to those given by the original scales. The correlations are almost perfect: for elevation r (586) = .99, $p < .001$; admiration r (586) = .97, $p < .001$.

Appendix F. Exploring more complex mediation models in Study 2

In this appendix, we present the results of the additional analyses from Appendix C performed on the data from Study 2. We aimed to replicate the analyses under Hypothesis 4 under Study 2 in the main text and in Appendix D. For measured elevation and measured admiration, we used the scores from the well-fitting measurement model developed in Appendix E.

First, we tested the model in Figure 1A. The kama muta vs. surprise contrast had the direct effect to increase homophobia, β = 0.172, $p < .001$. Its mediated effect through disgust was nonsignificant, β = - .024, $p = .242$; through elevation, to decrease homophobia, β = -.147, $p < .001$. The double mediation path marginally increased homophobia, β = .020, $p = .053$. The total effect was nonsignificant, β = .021, $p = .600$. The elevation vs. admiration contrast had no direct (β = - .038, $p = .429$) or total effect (β = -.032, $p = .449$). Mediated by disgust, it increased homophobia, β = .088, $p < .001$; mediated by elevation, it decreased homophobia, β = - .096, $p < .001$. The double mediation path marginally increased homophobia, β = .013, $p = .056$.

We then tested the model in Figure 1B. The kama muta vs. surprise contrast had the direct effect to increase homophobia, β = .187, $p < .001$. Its mediated effect through disgust

was nonsignificant, β = - .019, p = .345; through admiration, to decrease homophobia, β = -.162, p < .001. The double mediation path was nonsignificant, β = .015, p = .156. The total effect was nonsignificant, β = .021, p = .600. The elevation vs. admiration contrast had no direct (β = - .084, p = .071) or total effect (β = -.032, p = .449). Mediated by disgust, it increased homophobia, β = .094, p < .001; mediated by admiration, it decreased homophobia, β = - .047, p < .001. The double mediation path was nonsignificant, β = .004, p = .175.

Similarly to Study 1 (see Appendix C), we concluded that our main analyses are robust to different statistical approaches. Elevation stories decreased homophobia by increasing measured elevation (or measured admiration), but not through other paths.

Figure 1. Elevation-disgust sequential mediation paths with measured elevation (A) and measured admiration (B) as the first mediator.

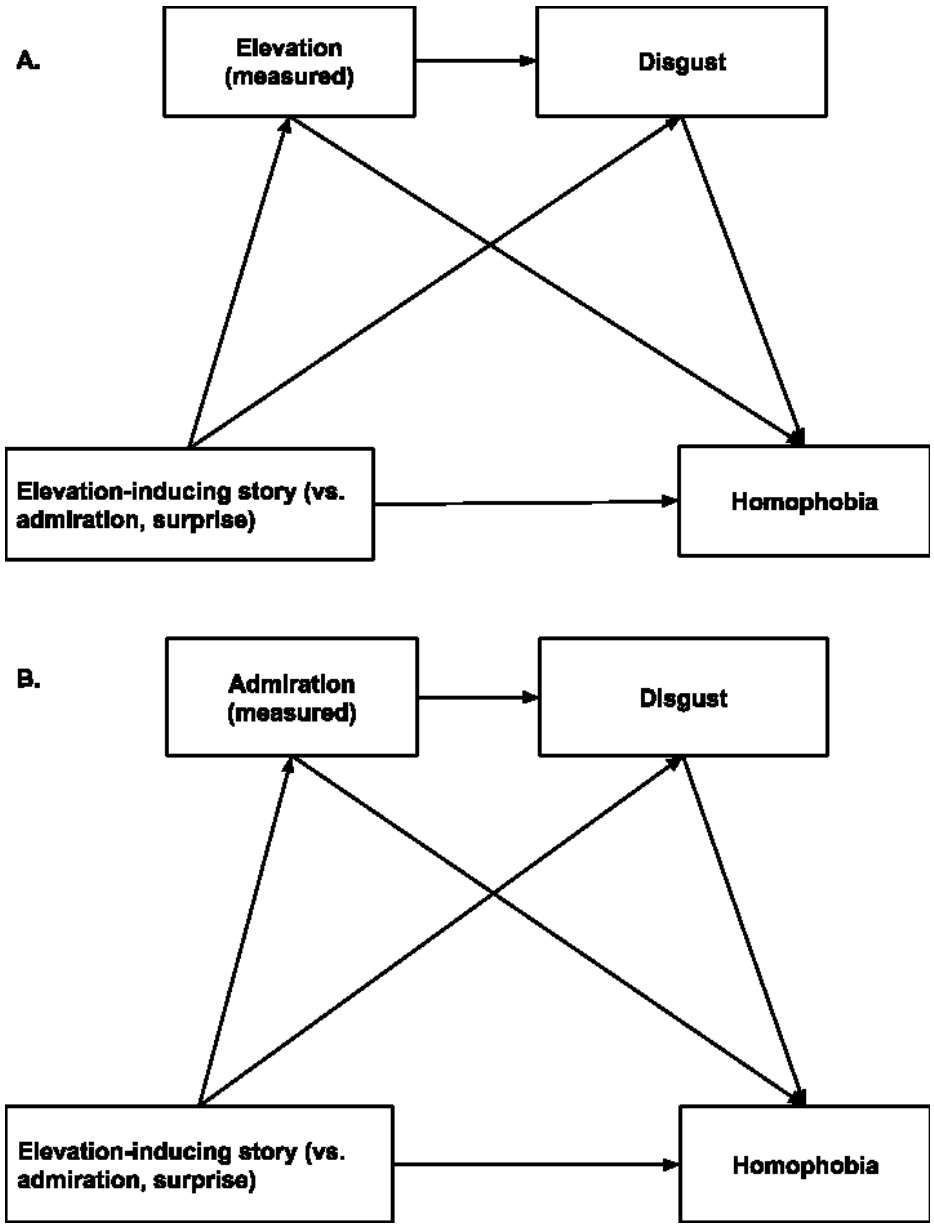

Table 1. *Pearson Correlation Coefficients Among Key Variables*

Study 1				
	Disgust	Homophobia	Elevation	Admiration
Homophobia	.23**			
Elevation	.07	-.23**		
Admiration	-.005	-.21**	.83**	
Surprise	.15**	-.08	.49**	.49**

Study 2						
	Disgust	Homophobia	Elevation	Admiration	Surprise	Social Distance
Homophobia	.13**					
Elevation	15**	-.21**				
Admiration	.07	-.20**	.85**			
Surprise	.19**	-.06	.52**	.55**		
Social Distance	.19**	.44**	-.09*	-14**	.06	
Disgust sensitivity	.16**	.02	.09*	.06	.09*	.13**

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

Table 2. *Measured Positive Emotions by Experimental Condition*

		Conditions		
		Elevation	Admiration	Surprise
Study 1 Continuous Measures	Elevation	3.51 (0.98)[a]	2.60 (0.94)[b]	2.06 (1.00)[c]
	Admiration	3.77 (0.89)[a]	3.31 (0.99)[b]	2.24 (0.99)[c]
	Surprise	2.72 (1.15)[a]	2.64 (1.13)[a]	2.58 (1.10)[a]
Study 2 Continuous Measures	Elevation	3.25 (1.03)[a]	2.53(0.96)[b]	1.85 (0.86)[c]
	Admiration	3.54 (0.95)[a]	3.29 (0.98)[b]	2.07 (0.93)[c]
	Surprise	2.50 (1.07)[a]	2.72 (1.08)[b]	2.46 (0.97)[a]
Study 2 Forced Choice Items	Elevation	61 (31%)	30 (15%)	24 (12%)
	Admiration	133 (67%)	144 (74%)	63 (33 %)
	Surprise	5 (2%)	21 (11%)	107 (55%)

Note. Means are presented with standard errors in parentheses. Different superscripts denote significantly different means.

Table 3. *Homophobia and Disgust by Experimental Condition*

			Elevation	Admiration	Surprise
Study 1	*Homophobia*	Gay	2.45 (.08)	2.59 (.08)	2.60 (.08)
		Unmarked	2.62 (.08)	2.58 (.08)	2.64 (.08)
	Disgust	Gay	1.25 (.06)	1.08 (.06)	1.21 (.05)
		Unmarked	1.13 (.05)	1.06 (.06)	1.25 (.05)
Study 2	*Homophobia*	Gay	2.50 (.08)	2.55 (.08)	2.45 (.08)
		Unmarked	2.58 (.08)	2.67 (.08)	2.63 (.08)
	Disgust	Gay	1.25 (.05)	1.14 (.05)	1.13 (.05)
		Unmarked	1.35 (.05)	1.06 (.05)	1.19 (.05)

Note. Means are presented with standard errors in parentheses. Means presented account for the covariate of mood.

Table S1. *SPSS (PROCESS) Output for a Model Predicting Homophobia with Elevation and Disgust as Mediators (Study 1)*

```
************* PROCESS Procedure for SPSS Release 2.16.3 ******************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com

**************************************************************************
Model = 6
    Y = mhs (Modern Homonegativity Scale, homophobia)
    X = elevate (elevation-inducing story)
   M1 = elevatio (measured elevation)
   M2 = disgust

Statistical Controls:
CONTROL= Mood

Sample size
        593

**************************************************************************
Outcome: elevatio

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .550      .302      .919   136.462     2.000   590.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.951      .105    28.070      .000     2.745     3.158
elevate      1.170      .082    14.186      .000     1.008     1.332
Mood         -.157      .023    -6.743      .000     -.203     -.111

**************************************************************************
Outcome: disgust

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .116      .013      .297     1.688     3.000   589.000      .168

Model
             coeff        se         t         p      LLCI      ULCI
constant      .921      .104     8.862      .000      .717     1.125
elevatio      .048      .031     1.555      .120     -.013      .108
elevate      -.018      .060     -.309      .758     -.136      .099
Mood          .030      .016     1.897      .058     -.001      .061

**************************************************************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .346      .120      .543    18.059     4.000   588.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.631      .133    19.849      .000     2.371     2.892
elevatio     -.196      .032    -6.131      .000     -.259     -.133
disgust       .350      .057     6.188      .000      .239      .461
elevate       .146      .077     1.910      .057     -.004      .297
Mood          .006      .016      .376      .707     -.026      .038

************************ TOTAL EFFECT MODEL ****************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .113      .013      .607     4.014     2.000   590.000      .019

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.425      .076    31.745      .000     2.275     2.575
elevate      -.070      .069    -1.018      .309     -.205      .065
Mood          .045      .017     2.639      .009      .011      .078
```

```
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS ********************

Total effect of X on Y
    Effect         SE          t          p       LLCI       ULCI
     -.070       .069     -1.018       .309      -.205       .065

Direct effect of X on Y
    Effect         SE          t          p       LLCI       ULCI
      .146       .077      1.910       .057      -.004       .297

Indirect effect(s) of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.216      .045     -.309     -.133
Ind1 :     -.229      .042     -.322     -.154
Ind2 :      .020      .012     -.003      .045
Ind3 :     -.006      .021     -.050      .032
(C1)       -.249      .045     -.348     -.169
(C2)       -.223      .045     -.321     -.142
(C3)        .026      .030     -.026      .092

Partially standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.278      .055     -.388     -.171
Ind1 :     -.294      .051     -.404     -.201
Ind2 :      .025      .016     -.004      .058
Ind3 :     -.008      .027     -.064      .041

Completely standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.131      .026     -.184     -.081
Ind1 :     -.139      .024     -.193     -.094
Ind2 :      .012      .007     -.002      .028
Ind3 :     -.004      .013     -.030      .019

Ratio of indirect to total effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     3.096   356.044    -3.070   359.744
Ind1 :     3.283   352.284    -3.210   380.447
Ind2 :     -.280    23.096   -39.835      .188
Ind3 :      .092    30.086    -1.216     4.017

Ratio of indirect to direct effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:    -1.477   115.416   -12.629     -.604
Ind1 :    -1.567   125.137   -15.594     -.705
Ind2 :      .134    11.418     -.072     1.531
Ind3 :     -.044     2.945     -.711      .601

Indirect effect key
 Ind1 :   elevate  ->       elevatio ->       mhs
 Ind2 :   elevate  ->       elevatio ->       disgust  ->       mhs
 Ind3 :   elevate  ->       disgust  ->       mhs

Specific indirect effect contrast definitions
(C1)   Ind1       minus      Ind2
(C2)   Ind1       minus      Ind3
(C3)   Ind2       minus      Ind3

******************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

------ END MATRIX -----
```

Table S2. *SPSS (PROCESS) Output for a Model Predicting Homophobia with Admiration and Disgust as Mediators (Study 1)*

```
************* PROCESS Procedure for SPSS Release 2.16.3 ******************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 6
    Y = mhs (Modern Homonegativity Scale, homophobia)
    X = elevate (elevation-inducing story)
   M1 = admirati (measured admiration)
   M2 = disgust

Statistical Controls:
CONTROL= Mood

Sample size
        593

**************************************************************************
Outcome: admirati

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .481      .231     1.026    92.760     2.000   590.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     3.397      .111    30.601      .000     3.179     3.615
elevate       .986      .082    11.996      .000      .824     1.147
Mood         -.158      .026    -6.145      .000     -.209     -.108

**************************************************************************
Outcome: disgust

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .080      .006      .299      .837     3.000   589.000      .474

Model
             coeff        se         t         p      LLCI      ULCI
constant     1.060      .119     8.927      .000      .827     1.293
admirati      .000      .027      .018      .986     -.053      .054
elevate       .037      .053      .701      .484     -.067      .140
Mood          .023      .016     1.381      .168     -.010      .055

**************************************************************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .316      .100      .555    15.232     4.000   588.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.589      .145    17.903      .000     2.305     2.873
admirati     -.149      .031    -4.771      .000     -.210     -.088
disgust       .321      .056     5.719      .000      .211      .432
elevate       .065      .074      .873      .383     -.081      .210
Mood          .014      .017      .838      .402     -.019      .047

************************** TOTAL EFFECT MODEL ****************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .113      .013      .607     4.014     2.000   590.000      .019

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.425      .076    31.745      .000     2.275     2.575
elevate      -.070      .069    -1.018      .309     -.205      .065
```

```
Mood          .045      .017     2.639      .009      .011      .078

***************** TOTAL, DIRECT, AND INDIRECT EFFECTS ********************

Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
     -.070      .069    -1.018      .309     -.205      .065

Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .065      .074      .873      .383     -.081      .210

Indirect effect(s) of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.135      .037     -.210     -.064
Ind1 :     -.147      .034     -.217     -.085
Ind2 :      .000      .009     -.020      .015
Ind3 :      .012      .017     -.021      .045
(C1)       -.147      .035     -.221     -.084
(C2)       -.159      .038     -.241     -.091
(C3)       -.012      .022     -.057      .030

Partially standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.173      .046     -.264     -.082
Ind1 :     -.188      .042     -.275     -.110
Ind2 :      .000      .011     -.025      .020
Ind3 :      .015      .022     -.026      .058

Completely standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.082      .022     -.126     -.039
Ind1 :     -.089      .020     -.131     -.052
Ind2 :      .000      .005     -.012      .009
Ind3 :      .007      .010     -.013      .027

Ratio of indirect to total effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     1.927  2201.608    -1.977   159.204
Ind1 :     2.100  2064.716    -2.318   182.955
Ind2 :     -.002   132.457    -1.154      .803
Ind3 :     -.170    41.978   -19.268      .463

Ratio of indirect to direct effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:    -2.078   147.747  -197.196     1.542
Ind1 :    -2.264   144.346  -216.366     1.615
Ind2 :      .002    12.250    -1.121      .951
Ind3 :      .183     6.068     -.398    16.519

Indirect effect key
 Ind1 :   elevate  ->       admirati ->       mhs
 Ind2 :   elevate  ->       admirati ->       disgust  ->       mhs
 Ind3 :   elevate  ->       disgust  ->       mhs

Specific indirect effect contrast definitions
(C1)   Ind1       minus      Ind2
(C2)   Ind1       minus      Ind3
(C3)   Ind2       minus      Ind3

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     5000

Level of confidence for all confidence intervals in output:
    95.00

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

------ END MATRIX -----
```

Table S3. *SPSS (PROCESS) Output for a Model Predicting Homophobia with Elevation and Disgust as Mediators (Study 2)*

```
************* PROCESS Procedure for SPSS Release 2.16.3 ******************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com

**************************************************************************
Model = 6
    Y = mhs (Modern Homonegativity Scale, homophobia)
    X = elevate (elevation-inducing story)
   M1 = elevatio (measured elevation)
   M2 = disgust

Statistical Controls:
CONTROL= Mood

Sample size
        588

**************************************************************************
Outcome: elevatio

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .523      .273      .899   118.390     2.000   585.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.857      .110    26.073      .000     2.642     3.072
elevate      1.068      .084    12.731      .000      .904     1.233
Mood         -.157      .022    -6.982      .000     -.201     -.113

**************************************************************************
Outcome: disgust

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .191      .036      .245     6.102     3.000   584.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant      .961      .095    10.160      .000      .776     1.147
elevatio      .051      .023     2.254      .025      .007      .096
elevate       .118      .053     2.227      .026      .014      .222
Mood          .013      .016      .786      .432     -.019      .045

**************************************************************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .275      .075      .591     9.216     4.000   583.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.696      .152    17.781      .000     2.398     2.993
elevatio     -.190      .035    -5.405      .000     -.260     -.121
disgust       .255      .077     3.324      .001      .104      .405
elevate       .130      .076     1.716      .087     -.019      .279
Mood          .001      .019      .067      .946     -.036      .038

************************ TOTAL EFFECT MODEL ****************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .078      .006      .633     1.663     2.000   585.000      .191

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.434      .084    28.842      .000     2.268     2.600
elevate      -.029      .067     -.439      .661     -.160      .101
Mood          .032      .018     1.782      .075     -.003      .068
```

```
****************** TOTAL, DIRECT, AND INDIRECT EFFECTS ********************

Total effect of X on Y
    Effect         SE          t          p       LLCI       ULCI
     -.029       .067      -.439       .661      -.160       .101

Direct effect of X on Y
    Effect         SE          t          p       LLCI       ULCI
      .130       .076      1.716       .087      -.019       .279

Indirect effect(s) of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.159      .044     -.251     -.080
Ind1 :     -.203      .042     -.291     -.128
Ind2 :      .014      .009      .002      .036
Ind3 :      .030      .016      .004      .068
(C1)       -.217      .044     -.309     -.139
(C2)       -.234      .045     -.327     -.152
(C3)       -.016      .018     -.054      .019

Partially standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.200      .054     -.311     -.101
Ind1 :     -.256      .051     -.361     -.162
Ind2 :      .018      .011      .002      .045
Ind3 :      .038      .020      .006      .086

Completely standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.095      .026     -.148     -.049
Ind1 :     -.121      .024     -.172     -.077
Ind2 :      .008      .005      .001      .021
Ind3 :      .018      .009      .003      .041

Ratio of indirect to total effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     5.458   129.553     1.581  5669.731
Ind1 :     6.968   169.067     1.983  7716.422
Ind2 :     -.480    12.097  -409.348     -.080
Ind3 :    -1.030    30.133 -1693.670     -.218

Ratio of indirect to direct effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:    -1.224    45.637   -13.203      .905
Ind1 :    -1.563    56.982   -16.597     2.309
Ind2 :      .108     4.576     -.269     1.157
Ind3 :      .231     7.827     -.111     3.535

Indirect effect key
 Ind1 :   elevate  ->       elevatio ->       mhs
 Ind2 :   elevate  ->       elevatio ->       disgust  ->       mhs
 Ind3 :   elevate  ->       disgust  ->       mhs

Specific indirect effect contrast definitions
(C1)   Ind1       minus      Ind2
(C2)   Ind1       minus      Ind3
(C3)   Ind2       minus      Ind3

******************** ANALYSIS NOTES AND WARNINGS ************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     5000

WARNING: Bootstrap CI endpoints below not trustworthy.  Decrease confidence or increase
bootstraps
 -1693.670

Level of confidence for all confidence intervals in output:
    95.00

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

------ END MATRIX -----
```

Table S4. *SPSS (PROCESS) Output for a Model Predicting Homophobia with Admiration and Disgust as Mediators (Study 2)*

```
************* PROCESS Procedure for SPSS Release 2.16.3 ******************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 6
    Y = mhs (Modern Homonegativity Scale, homophobia)
    X = elevate (elevation-inducing story)
   M1 = admirati (measured admiration)
   M2 = disgust

Statistical Controls:
CONTROL= Mood

Sample size
        588

**************************************************************************
Outcome: admirati

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .439      .193     1.071    78.914     2.000   585.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     3.369      .119    28.386      .000     3.136     3.602
elevate       .865      .085    10.141      .000      .697     1.032
Mood         -.161      .024    -6.661      .000     -.209     -.114

**************************************************************************
Outcome: disgust

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .166      .027      .247     4.555     3.000   584.000      .004

Model
             coeff        se         t         p      LLCI      ULCI
constant     1.076      .096    11.199      .000      .887     1.265
admirati      .010      .020      .479      .632     -.030      .049
elevate       .165      .049     3.353      .001      .068      .261
Mood          .006      .016      .399      .690     -.025      .038

**************************************************************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .252      .064      .598     7.520     4.000   583.000      .000

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.698      .160    16.860      .000     2.383     3.012
admirati     -.152      .032    -4.707      .000     -.216     -.089
disgust       .225      .075     2.995      .003      .078      .373
elevate       .064      .072      .880      .379     -.078      .206
Mood          .007      .019      .353      .724     -.030      .043

************************** TOTAL EFFECT MODEL ****************************
Outcome: mhs

Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .078      .006      .633     1.663     2.000   585.000      .191

Model
             coeff        se         t         p      LLCI      ULCI
constant     2.434      .084    28.842      .000     2.268     2.600
elevate      -.029      .067     -.439      .661     -.160      .101
```

```
Mood          .032      .018     1.782      .075     -.003      .068

***************** TOTAL, DIRECT, AND INDIRECT EFFECTS ********************

Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
     -.029      .067     -.439      .661     -.160      .101

Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .064      .072      .880      .379     -.078      .206

Indirect effect(s) of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.093      .035     -.164     -.028
Ind1 :     -.132      .031     -.197     -.075
Ind2 :      .002      .004     -.005      .013
Ind3 :      .037      .015      .012      .073
(C1)       -.134      .032     -.199     -.076
(C2)       -.169      .035     -.242     -.105
(C3)       -.035      .015     -.072     -.010

Partially standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.117      .043     -.204     -.035
Ind1 :     -.166      .038     -.246     -.095
Ind2 :      .002      .005     -.006      .016
Ind3 :      .047      .019      .015      .093

Completely standardized indirect effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     -.055      .021     -.097     -.016
Ind1 :     -.079      .018     -.117     -.046
Ind2 :      .001      .003     -.003      .007
Ind3 :      .022      .009      .007      .044

Ratio of indirect to total effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:     3.178   737.329      .920 48792.439
Ind1 :     4.514   806.796     1.407 51319.696
Ind2 :     -.064    12.297   -23.661      .044
Ind3 :    -1.272    90.905 -2764.428     -.351

Ratio of indirect to direct effect of X on Y
          Effect   Boot SE  BootLLCI  BootULCI
Total:    -1.459    69.067  -280.513      .724
Ind1 :    -2.072   103.383  -462.545     1.419
Ind2 :      .029     8.331     -.132     2.453
Ind3 :      .584    37.808     -.495   151.788

Indirect effect key
 Ind1 :   elevate  ->       admirati ->       mhs
 Ind2 :   elevate  ->       admirati ->       disgust  ->       mhs
 Ind3 :   elevate  ->       disgust  ->       mhs

Specific indirect effect contrast definitions
(C1)   Ind1       minus      Ind2
(C2)   Ind1       minus      Ind3
(C3)   Ind2       minus      Ind3

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
     5000

WARNING: Bootstrap CI endpoints below not trustworthy.  Decrease confidence or increase
bootstraps
 -2764.428

Level of confidence for all confidence intervals in output:
    95.00

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

------ END MATRIX -----
```