Exposure to Anti-LGBTQ+ Violence and Prosocial Attitudes Towards LGBTQ+ People*

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Abstract

Does indirect exposure to anti-LGBTQ+ violence engender prosocial attitudes toward LGBTQ+ people among the mass public? Anti-LGBTQ+ violence may reflect heteronormative societal values. Thus, these values may be resistant to introspection after high-profile anti-LGBTQ+ violence. However, psychological insights suggest indirect exposure to violence against marginalized groups may motivate pro-LGBTQ+ beliefs. We adjudicate between these perspectives by evaluating if two prominent U.S. anti-LGBTQ+ violent incidents motivated pro-LGBTQ+ beliefs. Across three studies, we find indirect exposure to anti-LGBTQ+ violence increases support for LGBTQ+ political rights and reduces anti-gay attitudes. However, consistent with theory positing punctuated group marginalization generates a temporally fickle influence on public opinion, we find the adoption of prosocial attitudes is short-term. Our findings suggest unexpected and salient violence against marginalized groups does not sustainably motivate prosocial beliefs toward marginalized groups among the mass public.

Keywords: exposure to violence; prosocial attitudes; intergroup relations; LGBTQ+ politics

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1 Introduction

Since the 1969 Stonewall Uprising, there have been numerous instances of anti-LGBTQ+ violence in the U.S. Anti-LGBTQ+ violence is conducted on the basis LGBTQ+ people violate heteronormative, patriarchal, sexual and gender norms (Herek 1990). Despite some attitudinal and policy progress on LGBTQ+ rights (Flores 2014),[1] anti-LGBTQ+ violence and hate crimes have increased recently (HRC 2020). Perhaps the most prominent instance of recent perceptibly anti-LGBTQ+ violence was the 2016 Pulse massacre, where a gunman killed 49 clubgoers during Latin Night at an LGBTQ+ Orlando nightclub. These prominent violent acts, while extreme, and simultaneously sympathy-inducing within media and amongst political elites, are also reflective of deep heteronormative societal norms resistant to change. Therefore, an open question is whether indirect exposure to prominent anti-LGBTQ+ violence serves as an introspective moment among the mass public, shifting their attitudes in a prosocial manner toward the LGBTQ+ community.

Although the mass public may have limited capacity to empathize with marginalized minority groups (Cikara et al. 2011), violence against marginalized groups may elicit prosocial attitudes among the mass public if the event is perceived as salient and illegitimate (Birkland 1998, Branscombe & Miron 2004, Harth et al. 2008). Thus, we hypothesize indirect exposure to sympathetic media coverage concerning prominent anti-LGBTQ+ violence will elicit prosocial attitudes toward LGBTQ+ among the mass public (Iyengar 1994, Vossen et al. 2017). However, the adoption of prosocial attidudes toward marginalized groups may be short-term. Social group attitudes are typically durable, even in light of salient "focusing" events (Sears 1993, Sigelman et al. 1997, Tuch & Weitzer 1997, Kite et al. 2019). Morever, immediate adoption of pro-LGBTQ+ beliefs after a violent event may be counterbalanced by countervailing information in a heteronormative society (Vuletich & Payne 2019). Pro-LGBTQ+ elite messaging and pressure to support LGBTQ+ may also dissipate after an

[1]There have been recent impositions on LGBTQ+ rights, such as Florida's 2022 "Don't Say Gay" law (source: `https://www.npr.org/2022/03/28/1089221657/dont-say-gay-florida-desantis`).

event loses salience (Downs 1972), undercutting temporally sustainable attitudinal shifts (Zaller et al. 1992, Birkland & Lawrence 2009, Kalla & Broockman 2021).

We find theoretically consistent evidence across three studies evaluating the influence of two prominent instances of anti-LGBTQ+ violence on mass attitudes toward LGBTQ+ and their political rights: the 2016 Pulse massacre (Studies 1, 2) and the 1998 Matthew Shepard murder (Study 3). Study 1 uses a nationally representative survey in the field during the Pulse massacre and an unexpected-event-during-survey-design (UESD, see Muñoz et al. (2020)) to assess if respondents interviewed after the Pulse massacre were more likely to support same-sex marriage. Study 2 uses a large opt-in internet survey with a large number of daily respondents during 2016 and another UESD approach to assess if respondents taking the survey after Pulse hold weaker anti-gay attitudes. Study 3 uses several historical surveys to assess if Shepard's murder decreased beliefs homosexuality is "morally wrong." Across all studies, we find the mass public adopts positive attitudes toward segments of the LGBTQ+ community and their political rights shortly after anti-LGBTQ+ violence. However, the influence of these incidents on prosocial beliefs either does not persist or has an ambiguous long-term effect.

Understanding the adoption of prosocial beliefs concerning marginalized groups after violent events is important in light of several instances of civilian violence against marginalized groups in the U.S. (e.g. the 1996 James Byrd murder, 2015 Charleston Church shooting, 2015 Stanford Sexual Assault Case, 2019 El Paso shooting, 2021 Atlanta spa shooting, 2022 Buffalo shooting). Although some research suggests the mass public or dominant group members adopt prosocial attitudes in response to violence against marginalized groups (Branscombe & Miron 2004, Harth et al. 2008, Mallett et al. 2008), there is less on the *long-term* attitudinal consequences of focusing events related to civilian (or state) violence against marginalized groups (Sigelman et al. 1997, Laniyonu 2021, Reny & Newman 2021). Consistent with old and new insights on the durability of attitudinal shifts after high-profile violent events (Tuch & Weitzer 1997, Chudy & Jefferson 2021, Nguyen et al. 2021), a critical contribution inher-

ent to our findings is that we show violent events may not serve as temporally sustainable moments of reevaluation concerning the socio-political status of marginalized groups. Thus, our findings help explain why these events have not led to societal adjustment of beliefs perpetuating social inequalities.

2 Violence Exposure and Prosocial Attitudes

Preexisting theory and evidence demonstrates direct or proximal (e.g. via close social ties, like family/friends) violence exposure during inter-group conflict may harden group boundaries, motivate parochialism, encourage intra-group but not inter-group altruism, and undercut the development of emotional substrates that ensure inter-group prosocial behaviors and attitudes (e.g. positive evaluations of outgroups, support for outgroup political rights) (Beber et al. 2014, Rusch 2014, Lupu & Peisakhin 2017, Mironova & Whitt 2018, Hadzic et al. 2020). Other evidence, building on *post-traumatic growth* and *altruism born of suffering* theory (PTGT, ABS) (Tedeschi & Calhoun 2004, Staub & Vollhardt 2010), demonstrates intergroup violence can motivate prosocial, altruistic attitudes and behaviors toward outgroups (Bakke et al. 2009, Vollhardt & Staub 2011, Hazlett 2020). Some evidence suggests direct/proximal violence exposure motivates inter-group prosociality since victimization generates a basis for empathy (Hartman & Morse 2020). Although prior work suggests direct or proximal exposure to inter-group, mostly inter-ethnic, violence can motivate inter-group prosociality, it is less clear how *one-sided indirect* exposure to violent events targeting marginalized groups along the dimension of queerness may influence prosocial LGBTQ+ beliefs among dominant group members or the mass public.[2]

Indirect exposure to one-sided violence may not motivate prosocial beliefs. Insufficient media coverage and public attention to violent events may not produce agenda-setting effects that mobilize prosocial mass attitudes toward targeted groups (Birkland 1998, Muschert &

[2] "One-sided" violence refers to violence perpetrated by the dominant group. "Indirect," in this context, refers to exposure via news, media.

Carr 2006). Additionally, *Social Identity Theory* (SIT) implies dominant group members garner self-esteem from minority group marginalization (Tajfel & Turner 1982). Thus, the mass public may garner psychic benefits from indirectly observing violence against minority groups (i.e. *schadenfreude*) (Cikara et al. 2014). Consistent with insights from *Inter-group Emotions Theory* (IET), these dynamics may be exacerbated by the absence of direct experiences with analogous violence that serves as a basis for empathy (Sirin et al. 2016). Moreover, the social distance between modal mass public members and, for example, LGBTQ+ people, may generate an empathy gap (Cikara et al. 2011), which, in the context of the Pulse Massacre, may be amplified by the predominantly Latinx victims (Ramirez & Peterson 2020).

However, under some conditions, indirect exposure to one-sided violence against marginalized groups may motivate prosocial attitudes toward the group to ameliorate conditions concomitant with the violence. *Focusing event theory* implies violent incidents with high media salience can mobilize mass attitudes to support marginalized groups (Birkland 1998), especially if elite and media messaging is framed sympathetically (Zaller et al. 1992, Iyengar 1994). Consistent with *Dissonant Identity Priming* theory, sympathetic messages expressed by partisan elites in the aftermath of violence against marginalized groups like LGBTQ+ may motivate socially conservative co-partisans to rethink their prejudicial attitudes (Harrison & Michelson 2017). The media also has a powerful influence on pro-LGBTQ+ mass attitudes. A cross-national study demonstrates positive LGBTQ+ media portrayals motivates support for LGBTQ+ rights (Ayoub & Garretson 2017). Other studies demonstrate parasocial contact (contact via LGBTQ+ media portrayals), reduces anti-LGBTQ+ prejudice and increases support for pro-LGBTQ+ policies (Lissitsa & Kushnirovich 2020, Miller, Flores, Haider-Markel, Lewis, Tadlock & Taylor 2020).[3] In sum, indirect exposure to *salient* and *sympathetic* messaging from media and elites after anti-LGBTQ+ violence may encourage the adoption of prosocial LGBTQ+ attitudes.

Moreover, other insights building on SIT and IET suggest dominant group or mass

[3]However, *negative* LGBTQ+ media portrayals may engender negative attitudes toward LGBTQ+ (Brewer 2003).

public members may feel one-sided civilian mass violence against marginalized groups (e.g. LGBTQ+) is illegitimate and reflects poorly on their stigmatizing beliefs (e.g. heteronormative attitudes), even if minority group marginalization otherwise facilitates self-esteem (Harth et al. 2008). Dominant group or mass public members may attempt to emotionally regulate these psychic costs by reacting to violence against marginalized groups with sympathy and/or empathy (among other positive intergroup emotions) (Branscombe & Miron 2004), motivating the downstream adoption of positive attitudes toward marginalized groups and policies ensuring their rights (Iyer et al. 2007). These theoretical propositions are consistent with evidence demonstrating empathetic feelings in response to observing LGBTQ+ discrimination elicits support for LGBTQ+ rights (Stotzer 2009).

- **H1:** Indirect exposure to civilian anti-LGBTQ+ violence will motivate positive attitudes toward LGBTQ+ people and support for their political rights

Evidence on the consequences of U.S. anti-Black police violence corroborates the possibility of prosocial responses from the mass public. Prior research demonstrates high-profile anti-Black police violence motivates the adoption of pro-Black sentiment, acknowledgement of anti-Black discrimination, and police disapproval among the mass public (Tuch & Weitzer 1997, Sigelman et al. 1997, Reny & Newman 2021, Nguyen et al. 2021).

This study builds on prior work along three dimensions. First, we evaluate indirect violence exposure along the dimension of queerness. Consistent with *focusing event* theory, prior research finds high-salience events promoting LGBTQ+ rights motivate pro-LGBTQ+ attitudes (e.g. court decisions) (Flores & Barclay 2016, Kazyak & Stange 2018). Other research finds indirect exposure to anti-LGBTQ+ violence motivates prosocial beliefs among LGBTQ+ (Bowers & Whitley 2018, Page 2018). However, there is less evidence evaluating if high-salience civilian indirect anti-LGBTQ+ violence would motivate attitudinal shifts among the mass public, and the evidence that exists is experimental in nature and may not characterize externally valid attitudinal responses in uncontrolled environments. Second, our study focuses on high-profile *civilian*, as opposed to *state* (police), violence. Understanding

the attitudinal consequences of civilian violence is important since they may be different than state violence. Government-imposed violence may generate stronger attitudinal shifts because it reflects systemic problems inherent in putatively trustworthy institutions that could be constrained through policy change (Oskooii 2016). Although the logic could be used for understanding state violence, civilian-imposed violence against marginalized groups may be more likely to be rationalized as a problem inherent to a troubled individual, as opposed to a society that is willing to, for instance, facilitate heteronormative norms at the expense of LGBTQ+ (Ott & Aoki 2002). Third, we provide theory and evidence on the temporal sustainability of potential attitudinal shifts in response to civilian violence against marginalized groups, which could help explain why several violent incidents have not reshaped social norms toward oppressed groups.[4]

3 Temporal Durability

Although indirect exposure to civilian violence against marginalized groups may motivate the adoption of prosocial attitudes toward targeted groups, attitudinal shifts may not be sustainably long-term even in light of macro-level progressive shifts in LGBTQ+ attitudes (Flores 2014). *Issue-attention cycle* theory posits the mass public may react to dramatic events highlighting relatively ignored social issues, like anti-LGBTQ+ violence, in an initially proactive manner. However, attitudinal shifts that seek to resolve a social ill may not be sustainable when it becomes clear resolving the problem is difficult (e.g. reevaluating heteronormative beliefs that offer a privileged social status) and the problem becomes less salient over time (Downs 1972). Concomitantly, prior theory and evidence implies sympathetic media and elite messaging in the aftermath of targeted violence needs to be persistent to generate sustainable prosocial beliefs (Zaller et al. 1992, Kalla & Broockman 2021).

Moreover, prosocial attitudinal responses may not be genuine, but short-term impres-

[4]Although Tuch & Weitzer (1997) discuss long-term attitudinal shifts toward police in response to the Rodney King beating.

sion management. Outrageous, illegitimate violence that is rejected by society, media, and political elites may motivate prosocial expressions toward the targeted group among the mass public to save face (Harth et al. 2008), but may not result in long-term attitudinal shifts motivated by the difficult task of dismantling hierarchical social relations (Nguyen et al. 2021). Short-term impression management may not be capable of undermining long-standing predispositions toward marginalized groups often rooted in pre-adult socialization (Sears 1993, Kite et al. 2019). Long-term attitudinal shifts may also be undercut by countervailing pressure to adhere to queerphobic norms in an otherwise heteronormative society during day-to-day interactions after the violent event (Vuletich & Payne 2019).

In addition, framing theory may help explain the potential absence of long-term prosocial attitudinal shifts. Story framing affects how the public assigns responsibility to an event in addition to preferred policy and societal outcomes (Kingdon 1995). Media outlets may adopt episodic or thematic frames in their news coverage (Iyengar 1994). Episodic frames emphasize event-centered information with attention toward an individual's actions (e.g. the perpetrator of anti-LGBTQ+ violence) whereas thematic frames emphasize broader societal problems (e.g. queerphobia, heteronormativity). Ott & Aoki (2002) and Zahzah (2019) posit media frames of prominent anti-LGBTQ+ violence, such as the 1998 Matthew Shepard murder and the Pulse massacre, often emphasize the gratuitous violence of the perpetrator instead of heteronormative and queerphobic undercurrents in U.S. society. These episodic frames may allow mass public members to simply express prosocial attitudes toward LGBTQ+ to absolve oneself of guilt in the short-term but lose sight of reflecting over their potential quotidian role and participation in a queerphobic and heteronormative society in the long-term (Ott & Aoki 2002, Nguyen et al. 2021).

- **H2:** Indirect exposure to civilian anti-LGBTQ+ violence will not produce temporally sustainable prosocial attitudes toward LGBTQ+ people and their political rights

Preexisting evidence aligns with our hypothesis. Birkland & Lawrence (2009) demonstrate the Columbine shooting produced more support for gun control in the short-term,

but the increase in support was not sustainable. Consistent with *focusing event* theory, they posit recurrence of events reflecting societal problems is necessary to maintain sustainable attitudinal shifts. In the context of violence against marginalized groups, police evaluations declined immediately after the Rodney King beating, but rebounded in the long-run (Tuch & Weitzer 1997). Moreover, BLM support increased rapidly after anti-Black murders and concomitant protests in 2020. But, support declined in the long-run to the pre-protest equilibrium (Chudy & Jefferson 2021, Nguyen et al. 2021).

4 Context 1: The Pulse Nightclub Massacre

Studies 1 and 2 test **H1** and **H2** by evaluating the consequences of the Pulse nightclub massacre. The massacre was a terrorist attack and mass shooting that occurred between 2:00-5:00 AM EDT on June 12, 2016 in Orlando, Florida. The massacre was perpetrated by Omar Mateen, a lone wolf domestic terrorist who pledged allegiance to ISIS. Mateen, armed with a semi-automatic pistol and rifle, killed 49 clubgoers and injured 53 others.[5] After taking hostages, Mateen was killed by the police. The massacre was the deadliest anti-LGBTQ+ incident in U.S. history, deadliest U.S. terrorist attack since 9/11, and deadliest mass shooting until the 2017 Las Vegas shooting.[6] During the massacre, Pulse was hosting "Latin Night." 80% of victims were Latinx.[7]

The nation reacted with shock and sympathy after the massacre. Republican Florida Governor Rick Scott expressed support for those affected while instituting a state of emergency. The Obama administration expressed condolences and ordered the federal government to provide assistance in the investigation and to the community. In a press conference, Obama described the massacre as an "act of hate." Many on social media, including 2016 presidential election candidates, congresspeople, political figures, foreign leaders, and celebri-

[5] https://www.cnn.com/2016/06/12/us/orlando-shooter-omar-mateen/index.html

[6] https://www.washingtonpost.com/news/wonk/wp/2016/06/12/in-the-modern-history-of-mass-shootings-in-america-orlando-is-the-absolute-worst/

[7] https://www.theguardian.com/us-news/2016/jun/14/latino-hispanic-orlando-shooting-victims

ties expressed shock and condolences to those affected.

The event was a highly salient "focusing event" amongst the mass public. 90% of adults surveyed immediately after the massacre indicated they were closely following the incident. The shooting was followed more than other salient issues such as ISIS, the 2016 election, health care premiums, the Zika virus, the Opioid crisis, and the Stanford sexual assault case (Figure A1). Media coverage of topics related to Pulse, LGBTQ issues, and terrorism discontinuously increased after the massacre (Figure A2). At the same time, Google searches related to the same topics peak the moment the massacre occurs (Figure A3). Importantly, media coverage and Google searches related to these topics were either declining or limited pre-massacre, suggesting anticipatory effects are unlikely to drive attitudinal shifts toward LGBTQ+ issues or people post-massacre. However, consistent with *issue-attention cycle* theory, media coverage and searches decline to their pre-incident levels by July, suggesting attitudinal responses to the massacre may be short-lived. Additionally, a Chicago Council on Global Affairs survey during the massacre (June 10-26) suggests the public was aware of the mass shooting (Figure A4). Respondents interviewed after the massacre were more likely to report they felt less safe since 9/11 (Panel A), terror attacks were likely in the future (Panel B), international terrorism poses a critical threat (Panel C), and worried about both terrorism and gun violence (Panels D-E).

The massacre was not simply interpreted as a terrorist attack, but a targeted anti-LGBTQ+ attack.[8] Consistent with Obama's characterization of the massacre as an "act of hate," the vast majority of the public understood the massacre as a anti-LGBTQ+ hate crime. In two polls, 85% and 70% of adults believed the shooting was an LGBTQ+ hate crime (Figure A5).[9] These statistics suggest the mass public believed the massacre was an illegitimate use of violence against LGBTQ+.

[8]Omar Mateen was not motivated by anti-LGBTQ attitudes. Mateen randomly targeted nightclubs for the purposes of inflicting mass casualties without regard to the clubgoer composition (see `https://www.nbcnews.com/feature/nbc-out/what-really-happened-night-pulse-n882571`). However, surveys suggest the mass public *perceived* the massacre as anti-LGBTQ+ violence regardless of the facts on the ground (Figure A5).

[9]See Appendix A.6 and A.10 for details on Figure A5 data.

4.1 Study 1: TAPS

4.1.1 Data and Design

Study 1 uses The American Panel Survey (TAPS, Wave 55), to assess if anti-LGBTQ+ violence exposure motivates support for policies benefiting segments of the LGBTQ+ community. TAPS is a monthly online survey administered by the WashU-St. Louis Weidenbaum Center, with national probability sampling conducted by GfK/Knowledge Networks. TAPS includes post-stratification population weights for English-speaking adults.

The outcome is same-sex marriage support (*SSM support*). SSM is an important LGBTQ+ rights dimension. SSM approval is near-unimous among LGBTQ+ people. 60% of LGBTQ+ people say SSM should be a top priority even if it takes attention away from other issues (Taylor 2013). TAPS asks respondents if they "generally support or oppose same-sex marriage," with an option to indicate "no opinion."[10] We measure *SSM support* as a binary indicator equal to 1 if the respondent indicates they support SSM and 0 otherwise.

Our independent variable is being interviewed after the Pulse massacre (*post-Pulse*). TAPS was fielded between 06/08/2016-07/08/2016. Pulse occurs on 06/12/2016, allowing us to implement an Unexpected Event During Survey Design (UESD) with TAPS comparing *SSM support* for respondents interviewed pre- and post-Pulse (Muñoz et al. 2020). *Post-Pulse* is a binary indicator equal to 1 if a respondent is interviewed after 06/12/2016, 6AM EST. Since we cannot be certain respondents perceived the massacre, the *post-Pulse* coefficient is interpreted as an "intent-to-treat" effect (ITT). However, Figures A1-A4 suggest the public was informed of and attentive to the massacre. Moreover, TAPS respondents are more likely to believe ISIS is an important issue *post-Pulse* (Figure B14), suggesting they "received the treatment" since the massacre's perpetrator pledged fealty to ISIS.

Online survey respondent inattentiveness produces low quality responses that attenuate associations of interest (Read et al. 2021). Attention is critical for question comprehension and retrieval of relevant information from memory to form a judgement (Krosnick &

[10] See Section B.1 for outcome measurement details.

Alwin 1987). Our design depends upon respondents cognitively making connections between violence against marginalized groups they observe in mass media and their policy preferences implicating said groups. Prior research suggests very quick and very slow survey response times are associated with lower attention and quality responses (Malhotra 2008, Paas & Morren 2018, Read et al. 2021). In TAPS (Wave 55), the minimum response time was 3 minutes, insufficient to process a ∼250 item survey. Furthermore, the maximum response time is 34,586 minutes, raising the possibility some respondents were multi-tasking, distracted, or intermittently engaging the survey with low effort. Thus, in the absence of internal attention checks, we truncate the sample to respondents who completed the survey in a "reasonable duration" of time, defined as those who took between 15-60 minutes to complete the survey. Our truncation is consistent with the rule of thumb by Roßmann (2010), who suggest removing respondents below 60% the median completion time.

The final TAPS data contain $N = 1142$ respondents, with 682 (60%) interviewed before Pulse and 460 after (40%). Truncation is unlikely to undercut generalizability. There are limited differences between inattentive and attentive TAPS respondents (Figure B15, Panel A). Additionally, the truncated sample is compositionally similar to the full TAPS sample and the "gold standard" in election studies, the 2016 ANES (Figure B15, Panel B, Table B2). Moreover, although our truncation is based on arbitrary thresholds, we follow best practices (Greszki et al. 2015), and demonstrate the results are insensitive to using the initial raw data or alternative response time cut-offs for "reasonable duration (Figure B15, Panel C)."[11]

Before we describe the Study 1 results, we demonstrate the *post-Pulse* coefficient is insulated from bias by validating UESD identification assumptions. The first assumption is ignorability. Treatment status should be independent of potential outcomes conditional on random sampling (Muñoz et al. 2020). Consequently, respondents interviewed before and after Pulse should be compositionally similar in TAPS. Figure 1, Panel A supports the as-

[11]Another beneficial property of the truncated data is the reduction in imbalance between respondents interviewed before and after the Pulse massacre. The truncated sample is imbalanced on 1/20 baseline covariates, whereas the full sample is imbalanced on 3/20 covariates.

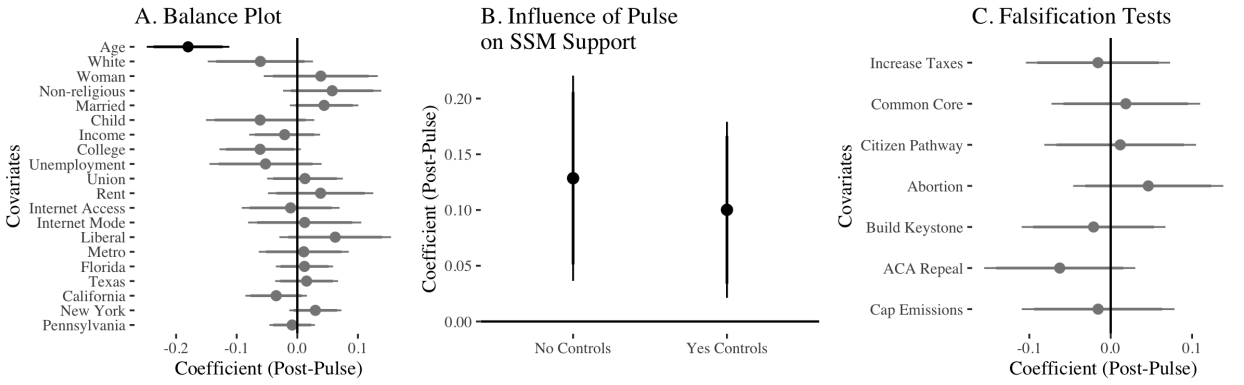

Figure 1: Same Sex Marriage Support Increases After Pulse. Panel A displays covariate balance for respondent characteristics before and after Pulse. Panel B characterizes the *post-Pulse* ITT effect on *SSM support* with and without covariate adjustment. Panel C displays falsification tests characterizing the unadjusted ITT effect of *post-Pulse* on policy outcomes unrelated to LGBTQ+ rights. Black coefficients are statistically significant, grey otherwise. All estimates use population weights to ensure representativeness. All covariates scaled between 0-1. 95% CIs displayed from HC2 robust standard errors. See Tables B5, B6, and B7 for regression tables characterizing the reported coefficients in this figure.

sumption. Respondents interviewed *post-Pulse* are compositionally similar to respondents interviewed pre-Pulse across 20 baseline demographic, economic, political, and geographic covariates with the exception of age (see Section B.4 for more information on baseline covariate measurement), a finding consistent with multiple testing.

Excludability is another key UESD identification assumption: any difference between respondents interviewed before and after Pulse should be the sole consequence of the event (Muñoz et al. 2020). It is important to note the "treatment" is not just the massacre itself but also collateral media attention, much of which was sympathetic to the massacre's victims. However, outside the massacre, there are no punctuated moments of media attention over LGBTQ+ issues or anti-LGBTQ+ violence during the month TAPS was fielded (June, Figures A2 and A3), suggesting the absence of simultaneous events that could motivate pro-LGBTQ+ attitudes. In addition, it is unlikely preexisting time trends in support of SSM are driving the result (Muñoz et al. 2020). We subset TAPS to the pre-Pulse period and assess the placebo "effect" of being interviewed after the median pre-treatment date and find statistically null results (Table B4).

4.1.2 Results

Figure 1, Panel B characterizes the influence of being interviewed *post-Pulse* on *SSM support*. Consistent with **H1**, respondents interviewed *post-Pulse* are 13 and 10 percentage points (pp.) more likely to support SSM not adjusting and adjusting for baseline covariates ($p < 0.01$, $p < 0.05$). These coefficients are equivalent to 20-26% of the outcome standard deviation. Our findings are likely not driven by secular dynamics outside the massacre. Falsification tests on treatment irrelevant outcomes such as support for increasing taxes, common core, a citizenship pathway, abortion, the Keystone pipeline, ACA repeal and emission caps are statistically null (Figure 1, Panel C). The results are not driven by outcome item non-response since non-response is balanced pre- and post-Pulse respondents (Table B3). We demonstrate the results are not driven by seasonal trends by showing the influence of Pulse is unique to 2016. Leveraging 3 surveys fielded in June 2012, 2013, and 2017, we show the influence of being interviewed after the calendar day of the massacre on *SSM support* is statistically null (Figure B18), suggesting there are no secular dynamics intrinsic to the month of June that could explain our findings (e.g. Pride Month). Our findings are also robust to small temporal bandwidths before and after the massacre that are less susceptible to secular temporal trends that could influence *SSM support* (Figure B19). Moreover, the pattern of results are the same using an ordinal *SSM support* measure (Table B9). Our results are also robust to excluding survey weights (Table B10).

4.1.3 Temporal Persistence

We test **H2** by assessing if the influence of Pulse on *SSM support* is temporally durable. We remove observations in the days immediately *post-Pulse* but not after those days, and then re-analyze the influence of being surveyed *post-Pulse*. The logic is that respondents interviewed immediately after Pulse may be the most susceptible to shifting attitudes toward segments of the LGBTQ+ community. Removing them may help us evaluate attitudinal decay by comparing respondents interviewed just before Pulse and some days after Pulse.

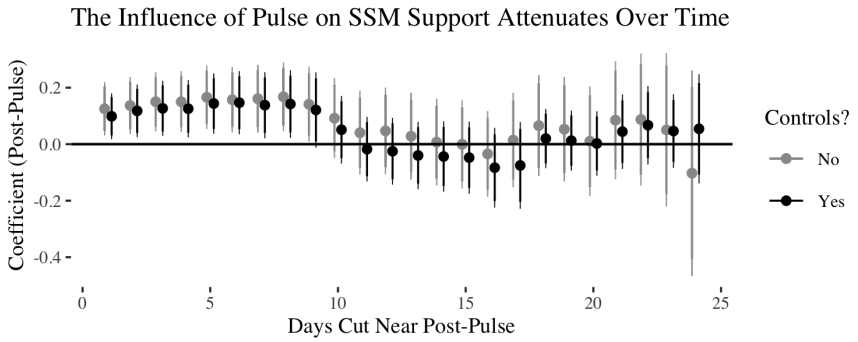

Figure 2: The Influence of Pulse on SSM Support Attenuates Over Time. X-axis is days cut from moment of pulse (with days after kept intact). Y-axis is the *post-Pulse* coefficient. 95% CIs from HC2 robust standard errors

After removing respondents interviewed between 1-10 days *post-Pulse,* the influence of being interviewed *post-Pulse* on *SSM support* is statistically null (Figure 2). In sum, consistent with **H2**, the Pulse massacre motivated an increase in *SSM support*, but the increase was not temporally durable.

4.2 Study 2: PI S-IAT Data

4.2.1 Data and Design

Study 2 examines if the public adopts positive attitudes toward segments of the LGBTQ+ community *post-Pulse*. We use Project Implicit (PI) data on U.S. respondents who self-selected into and completed an internet survey in 2016 asking questions on their explicit attitudes toward gay people in addition to measuring their implicit anti-gay bias via PI's Sexuality Implicit Association Test (S-IAT, $N = 43,950$).[12] On average, 175 U.S. respondents completed the PI S-IAT and explicit attitude survey each day during 2016.[13]

The PI data are not population representative. The PI sample contains more youth (68% aged 18-29 vs. 18%), women (65% vs. 51%), liberals (57% vs. 41%), college educated

[12]Data available here: `https://osf.io/yjqmw/`. See `https://implicit.harvard.edu/implicit/education.html` for more Project Implicit information. See `https://implicit.harvard.edu/implicit/selectatest.html` to take the S-IAT.

[13]We exclude respondents interviewed after 09/08/2016 due to order effects since the S-IAT measurement changes from 188 to 200 trials by cutting a task block at that moment (Klauer & Mierke 2005).

(44% vs. 29%), and non-whites (36% vs. 22%) than TAPS. However, although the PI sample is disproportionately composed of respondent attributes associated with pro-LGBTQ+ attitudes, the empirical conclusions we draw from the PI sample may translate to a representative population. Prior research demonstrates non-representative internet survey samples respond similarly to external stimuli as representative samples (Coppock 2019). Other research shows trends in the PI S-IAT data respond similarly to external events as trends in nationally representative surveys (Ofosu et al. 2019). If Study 2 corroborates results from a nationally representative sample (Study 1), then we may have some confidence Study 2's findings are generalizable.

The three Study 2 outcomes are the S-IAT *D-score*, *straight bias*, and *heterocentrism*. The S-IAT acquires respondents mean *compatible response latency* (CRL) and *incompatible response latency* (IRL) (in milliseconds). The CRL is an average of how quickly a respondent associates "good" (e.g. happy, terrific) and "bad" (e.g. evil, rotten) words in addition to "gay" (e.g. homosexual, woman/woman image) or "straight" (e.g. heterosexual, man/woman image) words/images to a left or right-sided bin that characterize associations designed to be easy for people who prefer straight to gay people (e.g. gay/bad, straight/good). The IRL measures the same thing but where the left or right-sided bins characterize associations designed to be difficult for people who prefer straight to gay people (e.g. gay/good, straight/bad). The S-IAT assumes implicitly biased respondents will be faster making congruent than incongruent associations. Consequently, the *D-score* is the $IRL - CRL$ difference divided by the within-individual standard deviation of response latencies calculated across the compatible and incompatible trials. The *D-score* ranges from -2-2, with higher values suggesting implicit bias against gay people (Greenwald et al. 2003).

Given the indirect measurement mechanism (Greenwald & Lai 2020), the *D-score* may be less influenced by impression management to be perceived as pro-gay after the massacre (Greenwald et al. 1998). Although the IAT is not completely insulated from introspection, the modest-to-moderate correlation between the *D-score* and explicit bias measures sug-

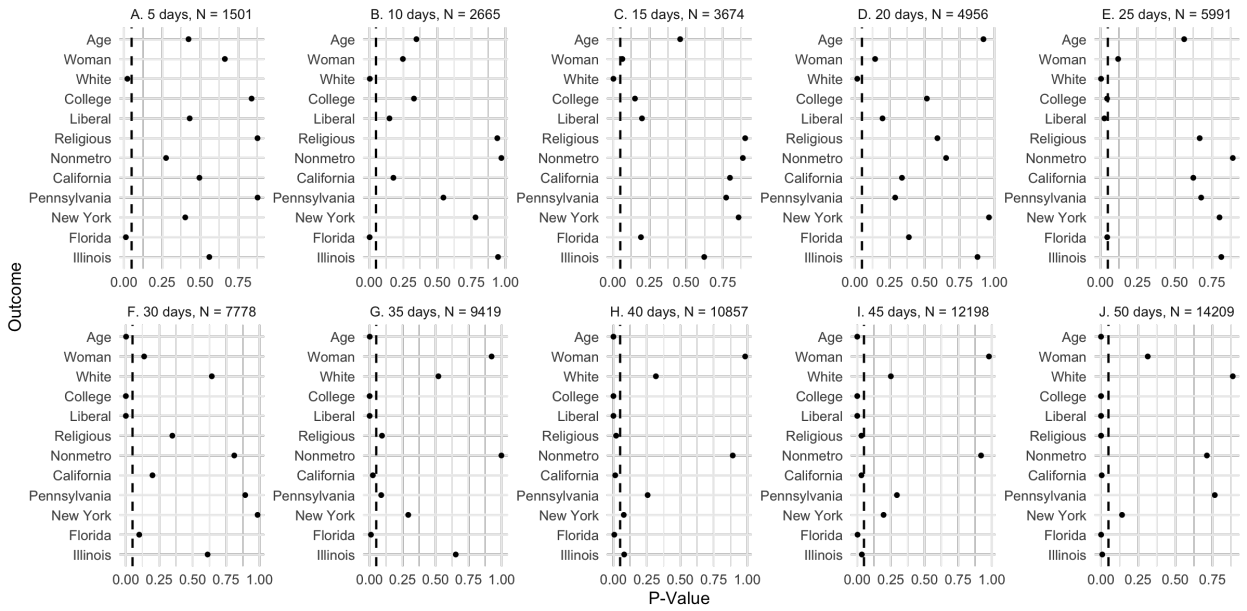

Figure 3: Balance on IAT Taker Composition Before and After the Pulse Massacre. Each panel characterizes covariate balance for different bandwidths (denoted on plot title with respective sample size) in the IAT data. The x-axis is the p-value derived from separate regression models regressing a baseline covariate (y-axis) on *post-Pulse*. See Section C.3.1 for regression tables characterizing these p-value estimates.

gests the IAT measures attitudes that are difficult to manipulate (Ratliff & Smith 2021). The *D-score* is a well-established measure and associated with several objective covariates characterizing subordination vis-a-vis the relevant group (Ratliff & Smith 2021).

Heterocentrism and *straight bias* are explicit anti-gay bias measures. *Heterocentrism* is the difference in 10 point feeling thermometers for straight and gay men. *Straight bias* is a 7 point measure from "I strongly prefer gay to straight people" to "I strongly prefer straight to gay people." These explicit measures are well established as anti-gay commitment measures (Keleher & Smith 2012). The *D-score*, *straight bias*, and *heterocentrism* are rescaled between 0-1. The PI data outcomes are aggregated to a daily time series.

Like Study 1, we use an Unexpected Event During Survey Design (UESD) with the PI S-IAT data to evaluate how anti-gay attiudes shifted *post-Pulse*. Given the large number of individuals who take the S-IAT per day, we estimate the influence of taking the S-IAT *post-Pulse* using respondents taking the PI S-IAT 5-50 days before and after the Pulse massacre

at 5 day increments in addition to the full 2016 sample between January-September.

We validate the ignorability UESD identification assumption, that is, "treatment" is independent of potential outcomes. Unlike Study 1, respondents are not randomly sampled, but self-select, into the PI S-IAT survey. Therefore, sample composition may be more likely to shift due to external events or secular temporal trends. We expect respondents surveyed shortly before and after the Pulse massacre will be compositionally similar. However, respondents may be increasingly dissimilar in samples that include respondents who take the survey well before or after the massacre. Figure 3 verifies our expectation. For samples with respondents who took the PI S-IAT 5-20 days (Panels A-D), there is statistical balance on respondent characteristics surveyed before and after Pulse on 1-2 out of 12 baseline covariates. For samples with respondents who took the PI S-IAT 25-50 days, there is imbalance on 3-7 baseline covariates (Panels E-J). Given the 15 and 20-day bandwidth samples are only imbalanced on whether a respondent is white, we prioritize interpreting the influence of *post-Pulse* on anti-gay attitudes using these samples (yet display all bandwidth sample estimates between 25-50 days for transparency). Given LGBTQ+ attitudes are similar across racial groups (Jenkins et al. 2009), racial imbalance is likely inconsequential for our coefficient estimates. The relatively balanced nature of the 15 and 20-day bandwidth samples also demonstrates that the Pulse massacre may have had a limited effect on changing the composition of PI S-IAT survey takers, which may be cause for concern if new survey takers *post-Pulse* held more progressive LGBTQ+ attitudes. These findings suggest our coefficient estimates, particularly for the 15 and 20-day bandwidth samples, are relatively insulated from omitted variable bias.

4.2.2 Results

Figure 4 displays *post-Pulse* coefficients where the outcome is the daily *D-score*, *straight bias*, and *heterocentrism*. Honing in on 15 and 20-day sample bandwidth estimates, respondents surveyed *post-Pulse* have a lower *D-score* (-0.01, $p < 0.10$) and *heterocentrism* (-0.01, $p <$

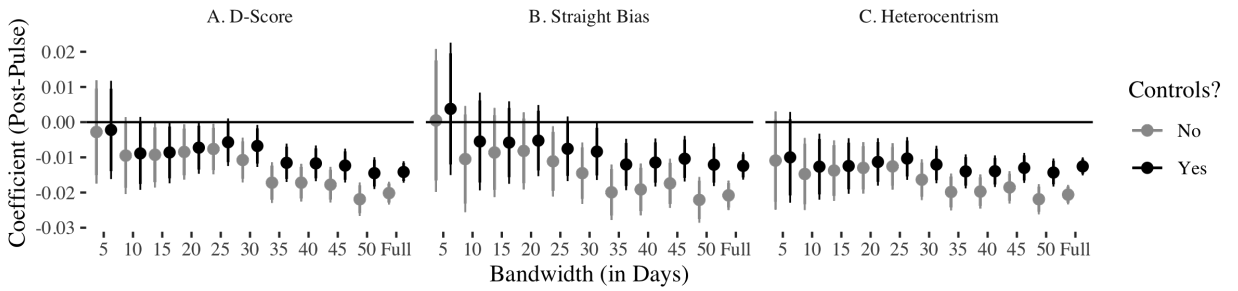

Figure 4: Influence of Pulse massacre on Anti-Gay Attitudes. The x-axis is the bandwidth (in days) used from the PI S-IAT data. The y-axis is the *post-Pulse* coefficient. All covariates rescaled between 0-1. 95% CIs displayed from HC2 robust standard errors. See Sections C.3.2 and C.3.3 for corresponding regression tables.

0.01), equivalent to roughly 7% and 8% of the respective outcome standard deviations pre-Pulse. The massacre does not appear to statistically reduce *straight bias* except in sample bandwidths with higher covariate imbalance (e.g. 25-50 days). Given *straight bias* is a highly explicit measure, the absence of a statistically reliable shift in *straight bias post-Pulse* may be a function of impression management on part of respondents disposed against LGBTQ+ whose attitudes may otherwise shift in favor of LGBTQ+ through indirect bias measurement (Greenwald et al. 1998). In sum, we find support for **H1** that indirect exposure to anti-LGBTQ+ violence motivates positive attitudes toward LGBTQ+ community segments.

We conduct several robustness checks to buttress our conclusions. We show preexisting time trends that may reduce anti-gay attitudes are not driving our results. We estimate the influence of taking the PI S-IAT 15 and 20 days pre-Pulse relative to 16-30 and 21-40 days pre-Pulse on the *D-score* and *heterocentrism*. We also estimate the influence of taking the PI S-IAT after (2016-03-07 to 2016-06-11) relative to before (2016-01-01 to 2016-03-06) the median pre-treatment date. These placebo estimates are all statistically null, suggesting secular pro-LGBTQ+ time trends do not explain our findings (Figure C21).

We attempt to rule out if systematic temporal trends near June motivate pro-LGBTQ+ beliefs other than the massacre. Thus, we assess the influence of placebo estimates comparing *D-score* and *heterocentrism* 15 and 20 days before and after June 12, the Pulse massacre calendar day, during the years 2010-2015 and 2017-2018. We find no consistent influence of

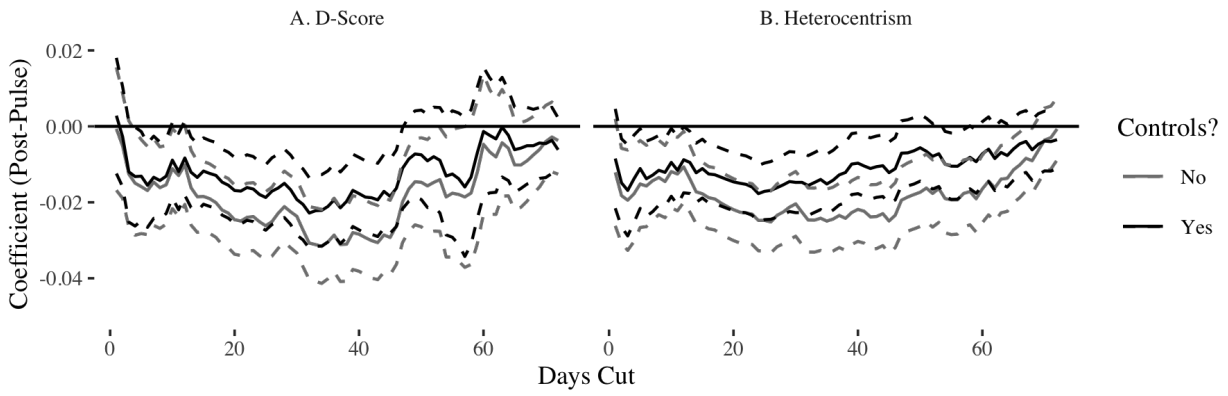

Figure 5: The Influence of Pulse on Reducing Anti-Gay Attitudes Attenuates Over Time. X-axis is days cut from moment of pulse (with 15 days after kept intact). Y-axis is the *post-Pulse* coefficient. 95% CIs from HC2 robust standard errors

these placebo estimates on the *D-score* and *heterocentrism* (Figure C22).

We demonstrate our findings may not be due to a secular attitudinal trend in favor of marginalized groups through a series of falsification tests assessing if attitudes toward Black people, Asians, the differently-abled, Arabs, darker-skin people, and women shifts *post-Pulse* using the 15 and 20-day bandwidth samples.[14] Across 28 statistical tests examining how being surveyed *post-Pulse* affects attitudes toward non-LGBTQ+ marginalized groups, only 3 are statistically significant (Section C.6), suggesting our findings are not driven by secular liberal attitudinal trends toward marginalized groups.

4.2.3 Temporal Persistence

We examine if the decrease in the *D-score* and *heterocentrism* is temporally sustainable. First, consistent with **H2**, loess models fit on the daily mean *D-score* and *heterocentrism* over time in 2016 suggest that anti-gay attitudes decreased *post-Pulse*, but later rebounded to pre-Pulse levels around August (Figure C20). Second, we conduct a formal test of the sustainability of attitudinal shifts *post-Pulse* and compare PI S-IAT respondents surveyed 15 days pre-Pulse to those surveyed 15 days after 1-72 days *post-Pulse* (leaving at least 15

[14]Data on falsification tests comes from separate Project Implicit surveys on anti-Black, anti-Asian, anti-differently-abled, anti-Arab, anti-dark-skin, and anti-women attitudes co-currently available to take in addition to the survey on anti-gay attitudes.

days up to the end of the post-treatment sample in the 2016 PI S-IAT data). This exercise allows us to compare individuals surveyed prior to Pulse to those surveyed some time away from Pulse at multiple time intervals. Respondents in time intervals that cut more days *post-Pulse* are temporally further away from the massacre and potentially more subject to attitudinal decay in pro-LGBTQ+ beliefs. Figure 5 demonstrates the decrease in the *D-score* and *heterocentrism* was fairly sustainable, up to 40 days after the Pulse massacre. However, after 40 days *post-Pulse*, and consistent with **H2**, the influence of *post-Pulse* begins to attenuate toward 0 statistically and substantively. In sum, like Study 1, Study 2 suggests the Pulse massacre motivated pro-LGBTQ+ beliefs, but these beliefs were not temporally durable.

5 Context 2: Matthew Shepard's Murder

Although we provide evidence Studies 1-2 are internally valid, they may not be externally valid. The Pulse massacre is a highly unique instance of anti-LGBTQ+ violence. The massacre is the deadliest instance of anti-LGBTQ+ violence, is the second deadliest mass shooting, has predominantly Latinx victims, was an instance of ISIS-inspired terrorism, and occurred after seminal gay rights victories (e.g. gay marriage). Therefore, it may be prudent to assess if a distinct instance of anti-LGBTQ+ violence also motivates pro-LGBTQ+ beliefs. Consequently, we examine how the prominent 1998 murder of Matthew Shepard, a white gay Wyoming college student, by two white men, influenced the public's beliefs toward gay people during a relatively more homophobic temporal context.

On October 6, 1998, Shepard was offered a ride home from the Fireside Lounge in Laramie, WY, by Aaron McKinney and Russell Henderson. They subsequently drove to a secluded rural area and proceeded to rob, pistol whip, and torture Shepard. The incident was picked up and heavily covered by national media. On the month of Shepard's murder, the number of gay-related news articles was 150% (NYT) and 172% (WashPo) of the average

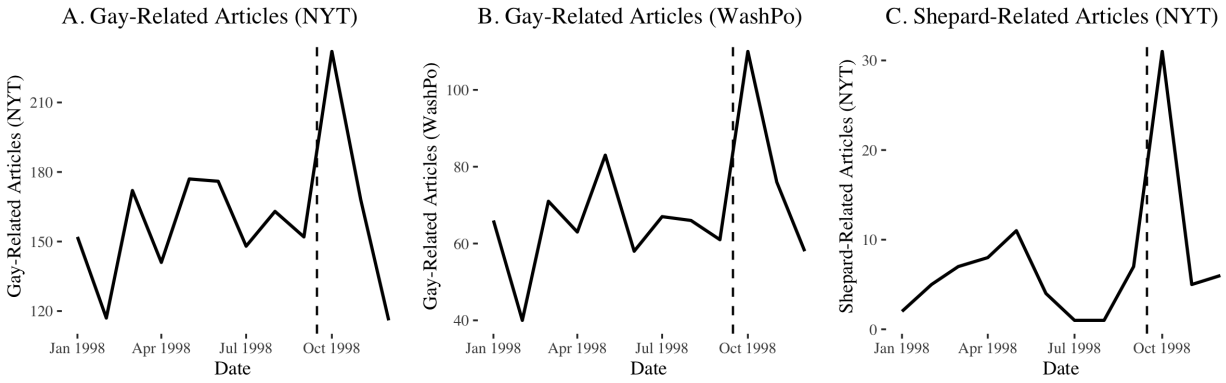

Figure 6: Media Coverage of Gay-Related Content in 1998. Panels A/B display the number of NYT/Washington Post gay-related articles (y-axis) by month (x-axis). Panel C displays the number of gay-related articles that relate to Matthew Shepard or anti-gay violence by month. Dashed vertical line denotes the period Shepard is murdered.

number of gay-related news articles for Jan-Sep 1998 (Figure 6).[15] Multiple media outlets highlighted the violent nature of the attack, noting how Shepard was so brutally beaten that his face was completely covered in blood, except where it had been partially cleansed by Shepard's tears (Loffreda 2001). After being found in a coma by a passerby the following day, Shepard was transported to hospital. However, he died six days after the attack at 12:53 am October 12, 1998. Consistent with *issue-attention cycle* and *focusing event* theory, media attention to Shepard's murder was intense at the moment of the event but quickly declined, suggesting attitudinal responses to the event may be short-lived.

The nation reacted with outrage and sympathy towards Shepard's murder (Brooke 1998). Former Wyoming Senator Alan K. Simpson, a Republican, decried Shepard's murder as an "ugly, ugly butchering," and urged that "the people of my state and the University of Wyoming [where the perpetrators had been students] want you to know that this is not who we are" (Lengel 1998). Members of Congress also offered their condolences to Shepard's parents and urged Congress to pass hate crime legislation. Responding to Shepard's murder, Senator Edward M. Kennedy (D-Mass) said that "hate crimes are crimes against our country," and that Congress needed to "send the strongest possible signal that these crimes

[15]See Appendix D.1 for details on media data.

will not be tolerated in the United States" (Lengel 1998). At a vigil outside the steps of the US Capitol, on October 15, 1998, thousands of individuals, including current and former Congresspeople, celebrities, and members of the public, gathered to pay their respects to Shepard. Advocates also anecdotally note how Shepard's murder engendered a "seismic shift in attitudes towards the LGBTQ community" (Compton 2018). Indeed, more than a decade after Shephard's murder, Congress passed the Matthew Shepard and James Byrd, Jr. Hate Crimes Prevention Act, a federal statute that expanded the power of the Department of Justice to investigate and prosecute hate crimes based on sexuality and gender.

5.1 Study 3

5.1.1 Data and Design

To evaluate if exposure to Shepard's murder decreased anti-gay attitudes, we identify surveys with similar items characterizing attitudes toward gay people shortly before and after Shepard's murder.[16] We identify two nationally representative CNN telephone polls asking respondents if they believe homosexuality is "morally wrong" (*moral wrong*) 4 months before and 2 days after Shepard's death (CNN Jun. 1998, $N = 1016$; CNN Oct. 1998, $N = 1036$).[17] We stack these datasets and identify overlapping control covariates from each survey. We

[16] We use the search terms "homosexuality" OR "homosexual" OR "gay" in Roper iPoll between 1996-2000 to identify gay-related items around Shepard's murder.

[17] We found two other items that could serve as potential candidates for assessing the influence of Shepard's murder on attitudes toward LGBTQ+, however, we do not use them for various reasons. One item measured support for *legal recognition* of "marriages between homosexuals." But, there is a 3-year interval between the two surveys including this outcome item (Gallup Mar. 1996, $N = 1008$, Gallup Feb. 1999, $N = 1054$), and there are no surveys with comparable items concerning legal recognition of marriages between homosexuals prior to the baseline time period to conduct temporal placebo tests. Nevertheless, respondents surveyed *post-Shepard* are more likely to support legally recognizing same-sex marriage, consistent with **H1** (see Section D.4 for details). Another item measures support for homosexuals serving in the armed forces using two surveys 7 months apart (*hire military*, Newsweek Jul. 1998, $N = 602$; Gallup Feb. 1999, $N = 1054$). Consistent with **H1**, we find respondents interviewed *post-Shepard* were more likely to support homosexuals serving in the military (Figure D24, Panel B). However, these effects may be a function of a secular attitudinal trend in support of incorporating homosexuals in the military, perhaps buttressed by Bill Clinton's efforts to implement Don't Ask Don't Tell in the 1990s. We demonstrate this is the case by showing that support for hiring gay people in the military is on an increasing trend from 1977-1996 (Figure D24, Panel C). Conversely, the *moral wrong* outcome is remarkably stable prior to Shepard's murder, making it an ideal candidate for assessing attitudinal shifts *post-Shepard* and their temporal sustainability (Figure 8).

then compare respondents interviewed after Shepard's murder (*post-Shepard*) to those before to assess if anti-gay violence exposure decreased the belief homosexuality is morally wrong, consistent with **H1**. We focus on surveys with the *moral wrong* outcome for 2 reasons. First, it is asked on three surveys after Shepard's murder (in 1998, 2001, 2004), allowing an assessment of long-term attitudinal shifts. Second, there are multiple pre-Shepard surveys with the same item, allowing us to conduct placebo tests to rule out if the *post-Shepard* effects we identify are a function of secular progressive attitudinal trends concerning the morality of homosexuality.

Our approach has shortcomings we attempt to assuage. First, given the absence of auxiliary data on attention to the murder, we cannot be certain respondents "received the treatment." Therefore, we interpret *post-Shepard* as an ITT effect. However, Figure 6 suggests the murder received significant nationalized media attention such that it might shift the mass public's attitudes.

Second, given possible differences in sampling between the two surveys, our statistical conclusions may be a function of sample composition. Balance tests on baseline demographic, socio-economic, and political covariates between the two surveys for each outcome demonstrate limited covariate imbalance (Figure 7, Panel A), suggesting sample composition may not drive our results.

Third, unlike Studies 1 and 2, we cannot assess an immediate effect of anti-gay violence exposure even though the surveys we use were fielded near Shepard's murder. There are 4 (Jun.-Oct. 1998) months in between the surveys with the *moral wrong* outcome. Therefore, our *post-Shepard* estimates may be due to intervening factors or secular progressive time trends. However, there are no other nationalized instances of anti-gay violence in this time period with the level of media coverage Shepard's murder garnered in between the field periods (Figure 6). Moreover, we rule out if our results are due to secular outcome time trends by conducting a temporal placebo test and demonstrating *moral wrong* levels do not

change between Apr. 1997-Jun. 1998 (Figure 7, Panel B).[18] These results are important since they suggest prominent pre-study events, such as Ellen DeGeneres' publicly televised coming out in April 1997, are not driving our results. In summary, despite several shortcomings to Study 3's design, we believe the design provides sufficient complementary evidence to Studies 1 and 2 along with suggestive evidence our theory is generalizable to other incidents besides Pulse.

5.1.2 Results

Consistent with **H1**, Figure 7, Panel B shows respondents interviewed *post-Shepard* were 10 percentage points less likely to report homosexuality is morally wrong with or without covariate adjustment, 20% of the outcome standard deviation ($p < 0.001$).

We conduct several falsification tests on outcomes unrelated to gay people or rights but related to other marginalized groups to rule out secular supportive trends toward marginalized groups that may drive our results (Figure 7, Panel C). We assess the influence of *post-Shepard* on support for banning abortion, affirmative action, the death penalty, the belief Black people are unintelligent, the belief Black people are lazy, spending more to help Black people, the belief Black-white inequality is due to discrimination/ability/education/motivation, not living with Black people, allowing abortion in any circumstance, women politicians, and the notion working women are bad for children in addition to a Black feeling thermometer.[19] Only 4 of the 18 outcomes are statistically significant, suggesting the absence of a systematic secular trend in favor of marginalized groups. Moreover, there does not appear to be a consistent pattern demonstrating the mass public is increasingly supporting marginalized groups. The Black feeling thermometer shifts in a favorable direction for Black people *post-Shepard*. However, the mass public increasingly attributes Black-White inequality to in-born ability *post-Shepard*, not discrimination, a putatively unfavorable position toward Black people. Moreover, the mass public is less likely to believe women can establish a warm

[18] See Section D.2 for more details on the temporal placebo test.
[19] See Appendix D.7 for more details on the falsification test outcomes.

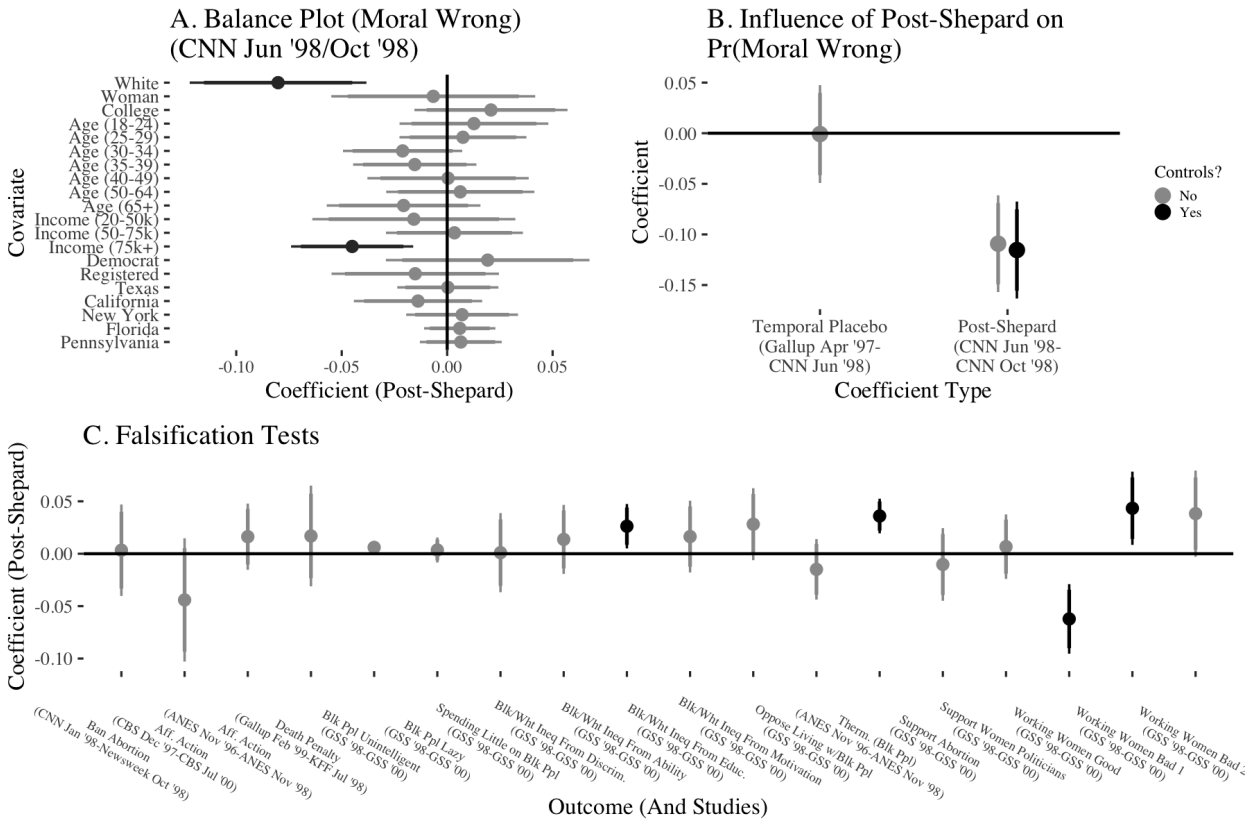

Figure 7: Respondents Interviewed After Shepard's Murder Were Less Likely To Believe Homosexuality is Morally Wrong. Panel A characterizes covariate balance between respondents interviewed before and after Shepard's murder. Black coefficients are statistically significant, grey ones otherwise. Panel B characterizes a) the influence of being interviewed on June 1998 relative to April 1997 on the belief homosexuality is morally wrong (temporal placebo) and b) the influence of being interviewed after Shepard's murder on *moral wrong*. Black coefficients include covariate adjustment, grey coefficients do not. Panel C characterizes falsification tests assessing the influence of *post-Shepard* on attitudes related to non-LGBTQ+ groups. 95% CIs displayed derived from HC2 robust SEs. See Tables D23, D24, D25, and D26 for regression tables on balance tests, the temporal placebo, the *post-Shepard* coefficient estimates, and falsification tests.

relationship with their children if they work (Panel C, "working women good" outcome) and more likely to believe a child will suffer if their mother works (Panel C, "working women bad 1") *post-Shepard*, a putatively unfavorable attitudinal shift toward women. These tests suggest there is no consistent secular supportive trend toward marginalized groups among the mass public driving our results.

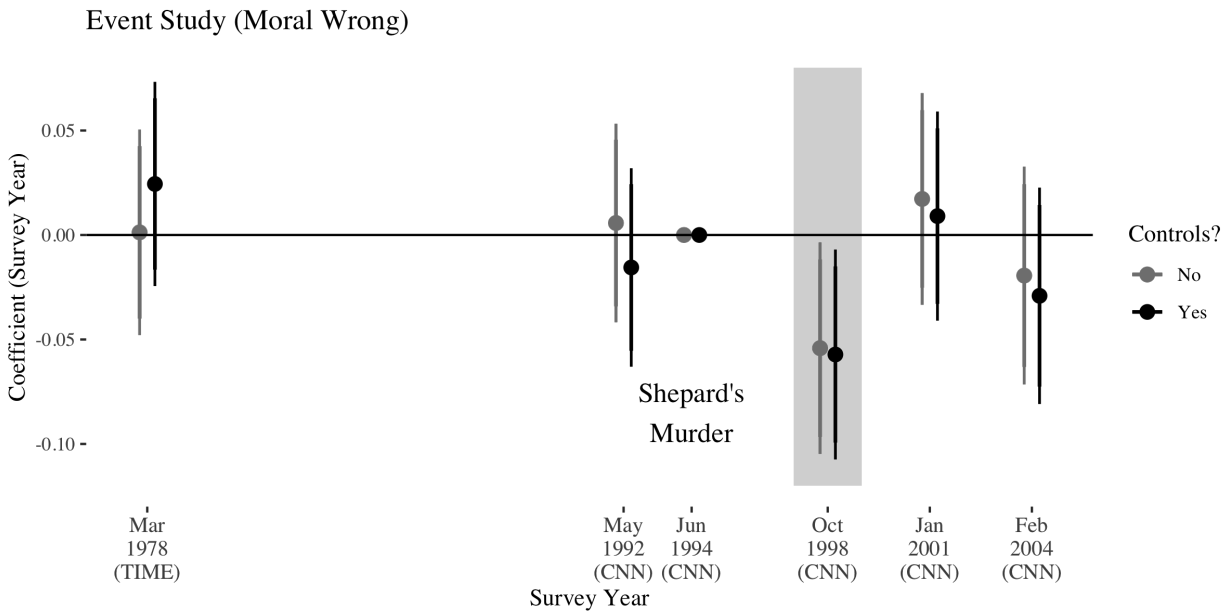

Figure 8: Belief in *Moral Wrong* is Stable Between 1978-2004 With the Exception of the Moment Shepard Was Murdered. Reference study is the 1994 CNN poll (hence no CIs displayed). Color denotes the inclusion/exclusion of controls adjusting for age, education, gender, partisanship, and race. Shaded estimate denotes moment of Shepard's murder (Oct. 1998). All estimates use survey weights. All covariates scaled between 0-1. See Table D27 for a regression table characterizing this figure. 95% CIs displayed derived from HC2 robust standard errors.

5.1.3 Temporal Persistence

To assess the temporal persistence of attitudinal shifts toward gay people *post-Shepard*, we identify 6 surveys between 1978-2004 where the *moral wrong* item as asked,[20] allowing us to evaluate temporal trends in the mass public's belief that homosexuality was morally wrong pre- and *post-Shepard*. Figure 8 displays event study estimates comparing *moral wrong* levels in 5 surveys between 1978-2004 to a survey fielded prior to Shepard's murder in 1994.[21]

[20] See Section D.6 for details on the 6 surveys used for the temporal persistence analysis.

[21] We do not use the CNN June 1998 poll in the event study on Figure 8. This is because the *moral wrong* item in the CNN June 1998 poll references "homosexual behavior" as opposed to "homosexual relationships between consenting adults." Therefore, we focus on surveys with *moral wrong* outcome items using the "consenting adults" wording for the event study. However, two concerns may arise. First, one may be concerned using the "consenting adults" item in our main analysis on Figure 7 may inflate the *post-Shepard* coefficient since it may make respondents more comfortable with "homosexual relationships." Yet, we still observe a negative *post-Shepard* coefficient (-0.06) from the event study comparing a CNN 1994 poll to the CNN October 1998 poll. Second, one may be concerned the alternative analysis comparing polls between 1994-1998 may be biased by secular attitudinal time trends in support of gay people. But the absence of temporal trends in the "homosexual behavior" items (Figure 7, Panel B) between 1997-1998 suggests this

From 1978-1994, belief in the notion homosexuality is morally wrong is remarkably stable. Respondents surveyed in 1994 are not statistically distinct from respondents surveyed in 1992 or 1978. Consistent with our initial temporal placebo test, these findings suggest an absence of progressive attitudinal trends toward gay people prior to Shepard's murder. However, in October 1998, immediately after Shepard's murder, there is a statistically distinguishable decrease in the belief homosexuality is morally wrong. But, the mass public's beliefs in *moral wrong* reverses back to levels prior to Shepard's murder by 2001 and 2004. In summary, consistent with **H2** and Studies 1 and 2, our results suggest Shepard's murder motivated a decrease in negative beliefs concerning "homosexuals," but this decrease was not temporally sustainable.

6 Discussion and Conclusion

Across three studies and two contexts, we provide evidence that salient and indirect civilian anti-LGBTQ+ violence exposure increases prosocial attitudes toward segments of the LGBTQ+ community. However, consistent with *issue-attention cycle* and *focusing event* theory, along with theoretical insights on the stability of group-oriented attitudes, these prosocial responses are not temporally sustainable.

Our study teaches us how the mass public might respond to prominent instances of civilian-perpetrated violence against marginalized groups. In the U.S., these events are common, including, but not limited to, the 1963 Birmingham bombing, 1996 James Byrd murder, 2015 Charleston Church shooting, 2015 Stanford sexual assault case, 2019 El Paso shooting, 2021 Atlanta spa shooting, and the 2022 Buffalo shooting. Our theoretical synthesis and evidence provides a nuanced understanding of mass attitudinal reactions to these violent incidents. Consistent with work on anti-Black state violence (Reny & Newman 2021, Sigelman et al. 1997), the mass public and dominant group members may express positive attitudes to-

is unlikely. In addition, the stability of the "consenting adults" version of the *moral wrong* outcome from 1978-1994 suggests secular attitudinal time trends are not influencing the *post-Shepard* coefficient.

ward marginalized groups in the immediate aftermath of their subjection to civilian violence. However, consistent with prior evidence demonstrating fickle attitudinal shifts after unexpected violent events (Tuch & Weitzer 1997, Birkland & Lawrence 2009, Chudy & Jefferson 2021, Nguyen et al. 2021), a key contribution inherent to this study is that we repeatedly demonstrate indirect exposure to salient civilian violence against marginalized groups may not serve as a sustainable moment of introspection undercutting negative attitudes toward these groups among dominant group members and the mass public.

What would generate temporally sustainable effects? Birkland & Lawrence (2009) suggest sustained media attention over long time periods may motivate sustained mass attitudinal shifts. Perhaps direct or proximal (e.g. friends, family), as opposed to indirect (e.g. via media), exposure to violence is necessary to durably shift mass attitudes. Prior work shows direct violence exposure may produce temporally sustainable consequences on mass attitudes and behavior (Hersh 2013, Lupu & Peisakhin 2017, Mironova & Whitt 2018, Hadzic et al. 2020). Based on our evidence, we do not believe the temporally unsustainable prosocial consequences of indirect anti-LGBTQ+ violence exposure is due to victim group characteristics, perpetrator group characteristics, or the scale of violence. Between Shepard's murder and the Pulse massacre, our results replicate between white and Latinx victims, white and non-white perpetrators, and individualized versus mass violence. Moreover, other evidence demonstrates racial state violence may also not produce temporally durable prosocial attitudes (Tuch & Weitzer 1997, Chudy & Jefferson 2021). Future research should continue to assess if differences in the scale, degree, type, exposure level, perpetrator profile, and victim profile of violent events affects the temporal persistence of mass attitudinal responses.

Our study poses some limitations future research should reconcile. First, we only evaluate civilian-perpetrated targeted violence on the basis of queerness. This is due to difficulties in identifying surveys with consistent outcome measurement around violent events targeting other groups and the necessity for in-depth knowledge on specific violent events. We have done our due diligence to replicate our findings across two prominent anti-LGBTQ+ events,

but future work should assess if salient civilian violence against other groups (i.e. immigrants, Black people, Asians, Latinxs, women) differentially motivates prosocial responses.

Second, our evidence is light on mechanisms. This is because we opt to use publicly available data collected near violent incidents. Our design is advantageous in that we can assess the first-order effects of violence exposure on prosocial attitudes in an uncontrolled environment with plausible identification assumptions, undercutting the prospect of demand effects or external invalidity. But, the data were not directly collected to test our hypotheses, making mechanism tests difficult.

However, honing in on the TAPS data (Study 1),[22] we evaluate several mechanisms informed by preexisting literature. Prior research suggests shared marginalization experiences may encourage empathetic responses to group-targeted violence (i.e. being a woman, Latino, or Black, see Sirin et al. (2016)). Prior research also suggests social contact with LGBTQ+ may prime individuals to adopt pro-LGBTQ+ attitudes in response to anti-LGBTQ+ violence (Tadlock et al. 2017). Other research suggests mass public members attentive to politics and media may be more likely to shift their attitudes in response to a salient violent event with high media coverage (Reny & Newman 2021). Moreover, political liberals may be more inclined to support LGBTQ+ in the aftermath of anti-LGBTQ+ violence (Flores 2014). However, we do not find respondents who are marginalized group members (Table B11, Models 1-3), live in geographic regions with more LGBTQ+ (and ostensibly have more contact with LGBTQ+, Models 4-5), more politically interested or media attentive (Models 6-7), or politically liberal are more inclined to support SSM post-Pulse (Model 8).[23]

Future research should continue to test other mechanisms. Insights from social psychology are promising. Violence exposure's influence on prosocial beliefs and their temporal sustainability may be mediated through positive emotional responses toward marginalized

[22]We focus on TAPS due to the wide array of covariates collected we can use to assess mechanisms (e.g. zipcode geographic indicators).

[23]We also use the PI S-IAT data (Study 2) to demonstrate being a member of a marginalized group or politically liberal does not moderate the influence of post-Pulse on the *D-Score* or *heterocentrism* outcomes (Table C22).

groups among the mass public (e.g. empathy, sympathy, anger, and guilt) (Branscombe & Miron 2004, Iyer et al. 2007, Harth et al. 2008). Additionally, future research should assess how media frames of civilian violence against marginalized groups condition the mass public's attitudinal responses. In the cases of Shepard's murder and Pulse, the media and political elites framed the victims sympathetically (as opposed to unsympathetically). At the same time, prior research suggests the media used episodic frames focusing on individual perpetrator motivations instead of thematic frames emphasizing societal queerphobia as a root cause of anti-LGBTQ+ violence (Ott & Aoki 2002, Zahzah 2019). It may be prudent to evaluate if framing differences affect prosocial responses and their temporal durability.

Third, our outcomes only explicitly implicate gay men and lesbians, not other LGBTQ+ community segments. Future research should assess if anti-gay or broader anti-LGBTQ+ violence generates prosocial attitudes, even if temporally fickle, toward other LGBTQ+ subgroups such as transgender or non-binary people, who often face higher levels of societal derogation (Norton & Herek 2013).

Fourth, the violence we focus on is accessible and salient civilian violence. Exposure to smaller-scale, quotidian violence (e.g. observation of hate crimes, assault, verbal abuse, micro-aggressions) may have a weaker influence on prosocial attitudes. But, because exposure to less salient quotidian violence is more direct for observers, it may have a stronger and durable impact on prosocial beliefs. Future research should explore how other kinds of violence inform prosocial beliefs toward marginalized groups.

Fifth, our study only explores attitudinal shifts, not behavior. Behavioral shifts may not be commensurate with attitudinal changes, especially since survey responses are subject to impression management (LaPiere 1934). However, we do not believe our lack of emphasis on behavior is a shortcoming. The temporally fickle attitudinal shifts we identify suggest the mass public may have engaged in short-term impression management until anti-LGBTQ+ violence was no longer salient, making them more comfortable to express their original beliefs. Nevertheless, we assess if the Pulse massacre motivated three different measures of pro/anti-

LGBTQ+ behavior we could identify: anti-LGBTQ+ hate crimes, donations to Florida-based pro-LGBTQ+ organizations, and blood donations. We find the massacre motivated an increase in anti-LGBTQ+ hate crimes, consistent with prior research suggesting violence has a contagious effect (see Section A.11.1 for details) (Towers et al. 2015). However, Pulse did not motivate an increase in monetary donations to Orlando LGBTQ+-serving organizations (see Section A.11.7 for details). But, the Pulse massacre motivated blood donations for victims (See Section A.11.8 for details). These findings suggest the massacre motivated both pro- and anti-social behavior, but given we use aggregate data, we cannot determine if this is due to behavioral *changes* or behavioral *priming* of those who are predisposed to either be anti-social or pro-social toward LGBTQ+ people. Future research should continue to explore the behavioral consequences of exposure to salient civilian violence against marginalized groups in addition to attitudinal consequences.

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Supplemental Information

A Pulse Context

A.1 Demonstrating Pulse Was Salient

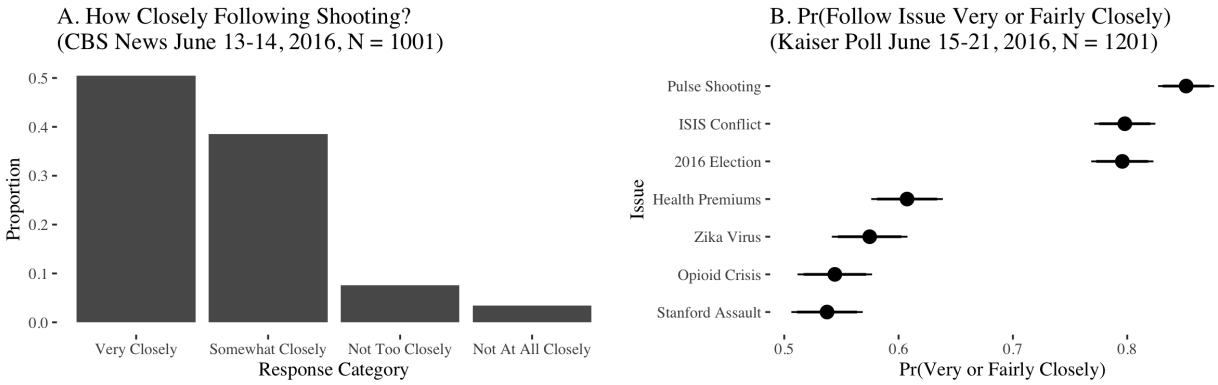

Figure A1: Survey Data Demonstrate the Pulse Massacre Was Salient. Panels A and B display how closely respondents were following the Pulse shooting in a June 2016 CBS and Kaiser poll respectively. Panel B compares attention to Pulse (x-axis) relative to other issues (y-axis). All estimates are population weighted. 95% CIs displayed from 1000 bootstrap simulations. See Section A.6 for more details on Figure A1 polls.

A.2 Media Coverage Over Time

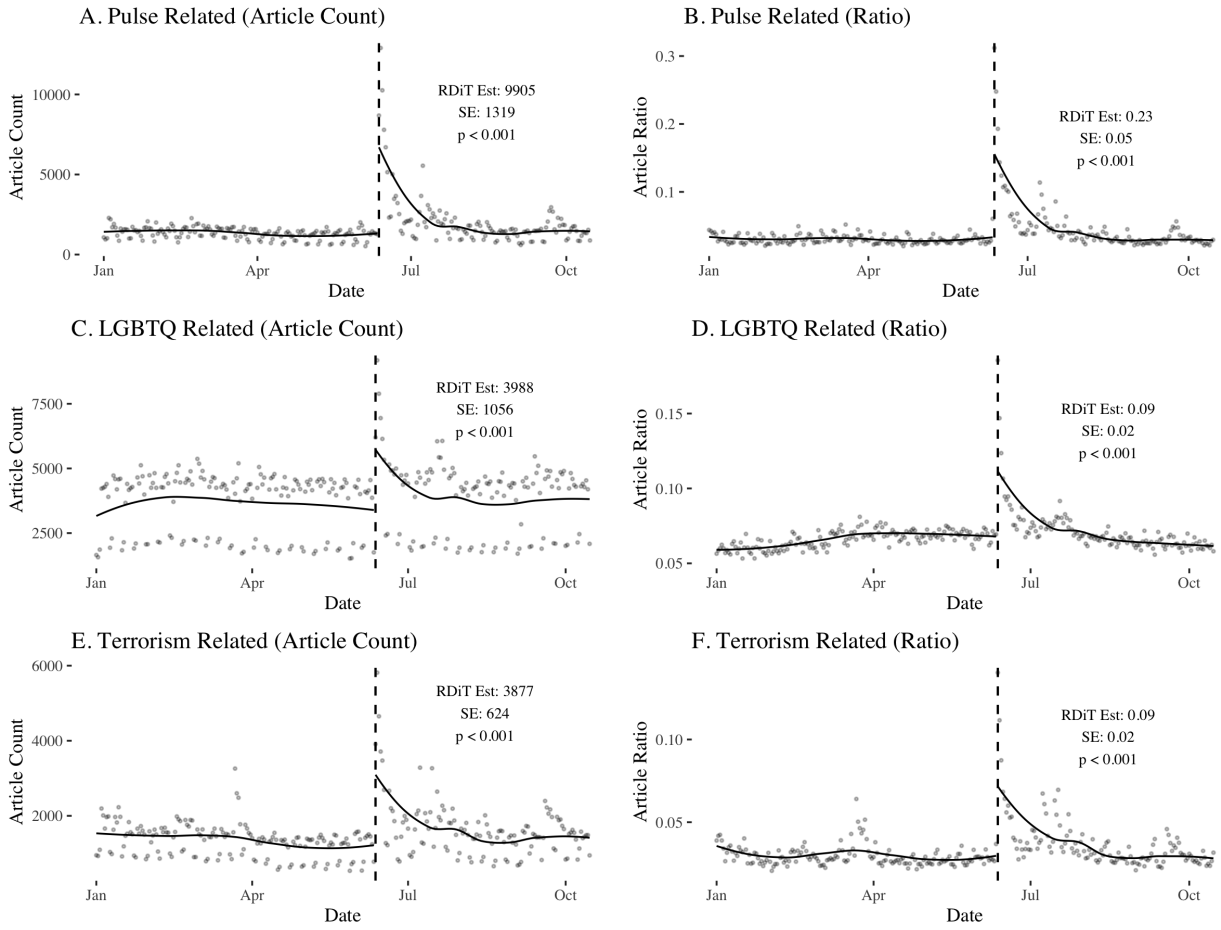

Figure A2: Media Coverage of Topics Related to the Pulse Massacre Over Time. Panels A, C, and E display the count of Pulse-, LGBTQ-, and terrorism-related stories between January-October 2016. Panels B, D, and F display the ratio of Pulse-, LGBTQ-, and terrorism-related stories relative to the total number of stories in digital news. Loess models fit on each side of the moment the massacre occurs. Annotations denote RDiT estimates for the effect of Pulse on the article count and ratio using MSE optimal bandwidth selection (Calonico et al. 2015) (running variable degree = 1). See Appendix A.7 for more details on Figure A2 data.

A.3 Search Behavior Over Time

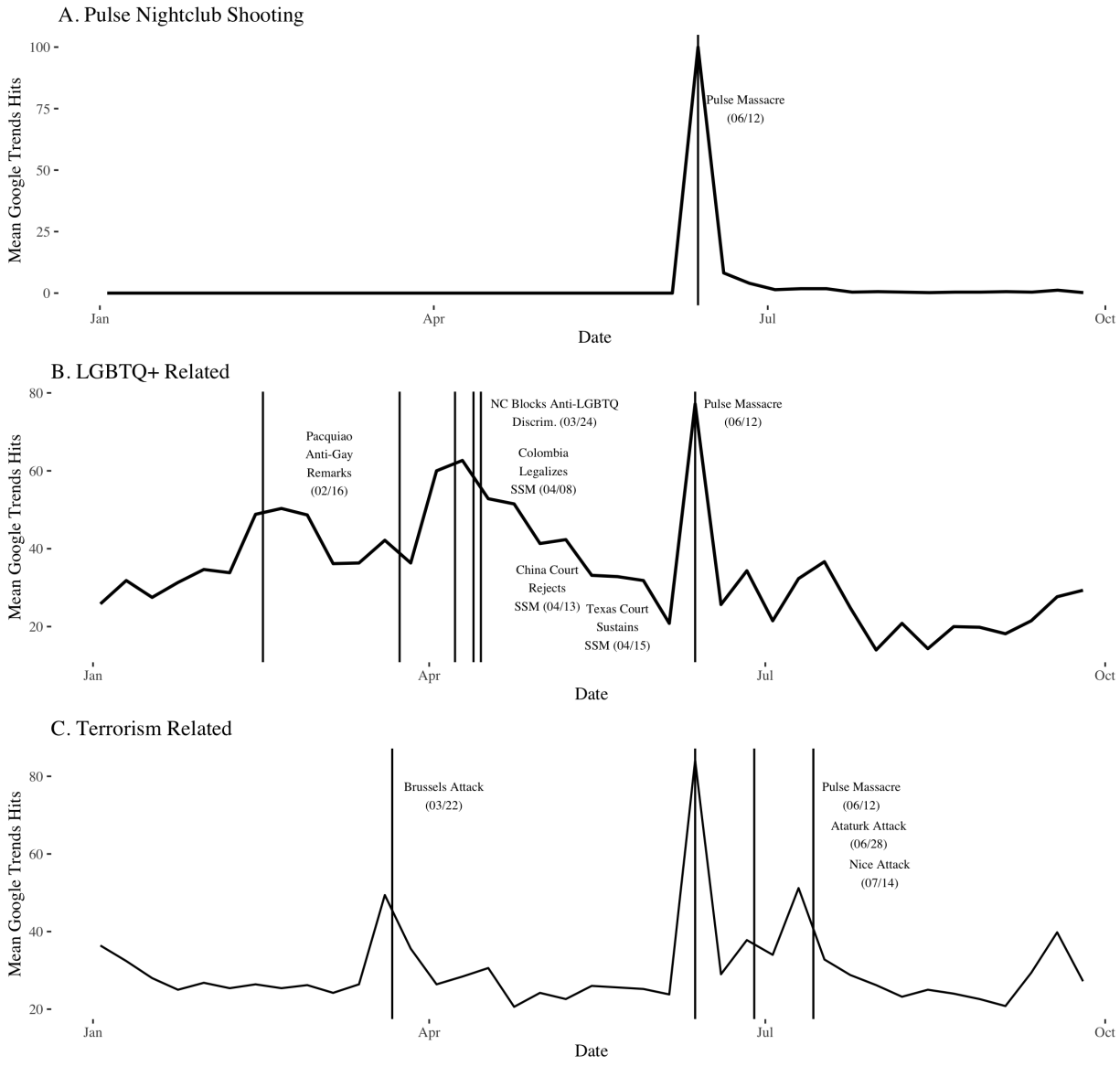

Figure A3: Search Behavior From Google Trends Demonstrates the Pulse Massacre Was Salient and Unexpected. Panels A, B, and C display the average search intensity for Pulse massacre-, LGBTQ-, and terrorism-related terms between January-October 2016. Vertical lines and annotations denote key events related to respective topics. See Appendix A.9 for more details on Figure A3 data.

A.4 Demonstrating Public Perceived Pulse

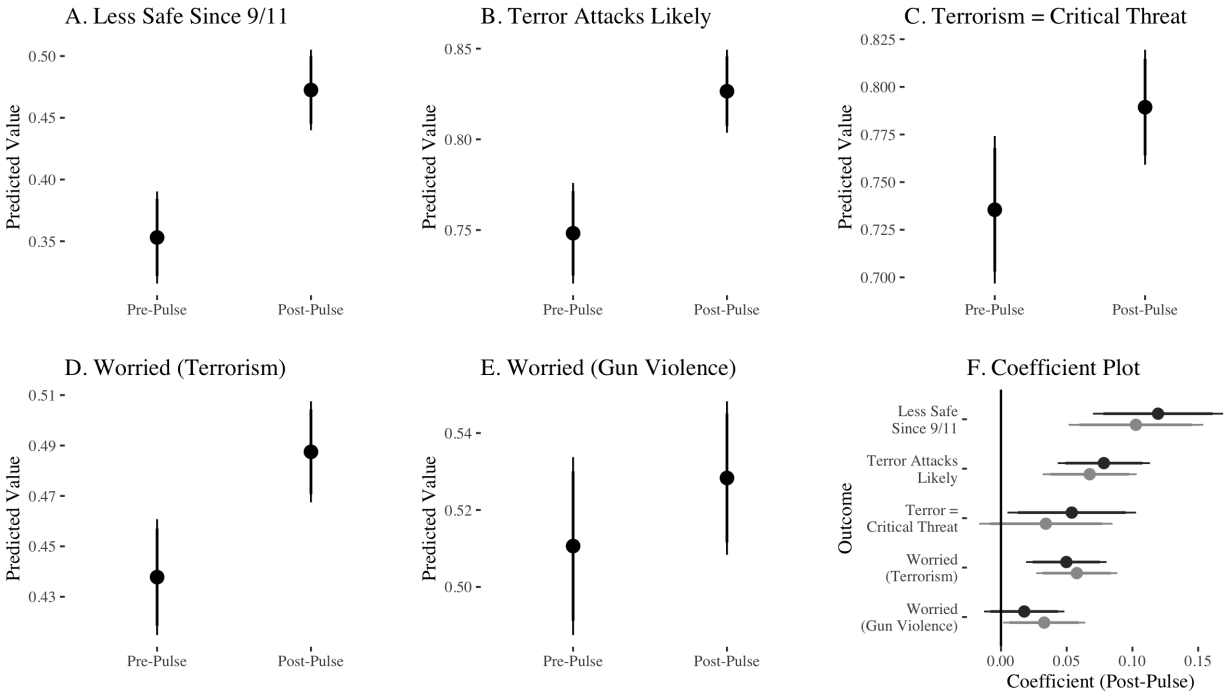

Figure A4: The Pulse Massacre Was Perceived by the Mass Public. Panels A-E characterize predicted values of belief country is less safe since 9/11, terror attacks are likely in the future, international terrorism is a critical threat, worry about terrorism, and worry about gun violence respectively. Panel F characterizes the the influence of Pulse (x-axis) on the aforementioned outcomes (y-axis) adjusting and not for imbalanced covariates (black = with controls, grey otherwise, see Figure A6 for balance plot). All covariates rescaled between 0-1. 95% CIs displayed derived from HC2 robust standard errors. See Section A.8 for more details on Chicago Council data. See also Table A1.

A.5 Demonstrating Public Perceived Massacre as Hate Crime

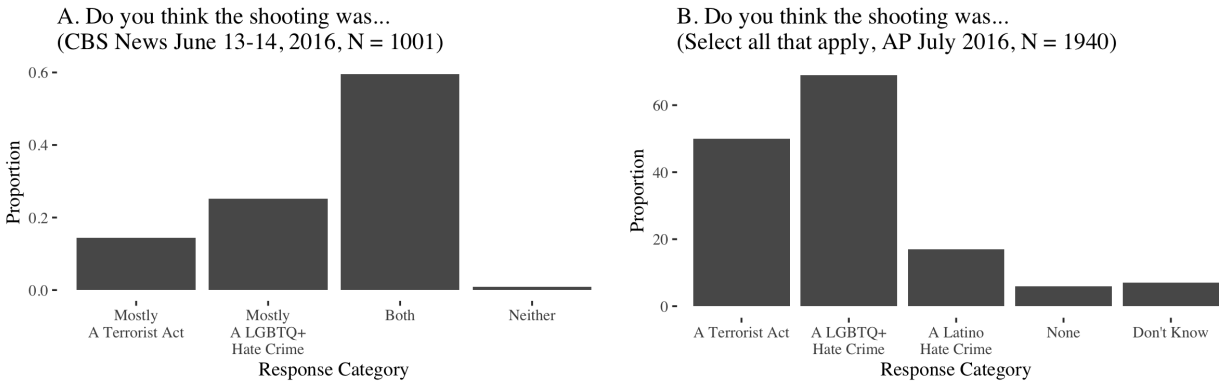

Figure A5: The Pulse Massacre Was Perceived as Targeted Anti-LGBTQ+ Violence. Panels A and B display beliefs the public felt the shooting was an anti-LGBTQ+ hate crime in a June 2016 CBS poll (Panel A) and July 2016 AP poll (Panel B). All estimates are population weighted.

A.6 Salience Data Details

CBS News June 13-14 Poll is a nationally representative adult survey ($N = 1001$). The poll used a random digit dial methodology. Interviews were conducted in English and Spanish using live interviewers. The data are weighted to reflect U.S. census figures on demographic variables. The margin of error for the weighted data is $\pm$ 4 percentage points. The item of interest on Figure A1, Panel A is: "How closely have you been following news about the recent shooting at a nightclub frequented by gays and lesbians in Orlando, Florida where at least 49 people were killed – very closely, somewhat closely, not too closely, or not at all closely?" The item of interest on Figure A5, Panel A is "Do you think the shooting at the nightclub in Orlando, Florida was (mostly a terrorist act), (mostly a hate crime against people who are gay and lesbian), or both?"

Kaiser Family Foundation June 15-21 Poll is a nationally representative adult survey ($N = 1201$). The poll used a random digit dial methodology. The item of interest on Figure A1, Panel A is: "How closely have you been following news about the recent shooting at a nightclub frequented by gays and lesbians in Orlando, Florida where at least 49 people were killed – very closely, somewhat closely, not too closely, or not at all closely?"

A.7 Media Attention Data Details

We acquired media data on the daily number of web articles related to the topics of interest from Mediacloud's Explorer Search Tool (`https://explorer.mediacloud.org/`) from January 1, 2016 to October 15, 2016 to generate Figure A2. The reason we do not include data after October 15, 2016 in our analyses is because we do not want our analyses to be perturbed by the 2016 election, which increased attention to LGBTQ-related topics due to Trump's anti-LGBTQ positions. The two measures of media attention we evaluate are the *article count* and *article ratio*. The article count is the raw number of web articles including a specific search term(s). The article ratio is the number of web articles including a specific search term(s) normalized over the total number of web articles.

We acquire article count and ratio data on three topics.

1. Pulse-related topics
2. LGBTQ-related topics
3. Terrorism-related topics.

Pulse-related topics are the article count sum and article ratio mean for queries on the terms "orlando massacre," "orlando shooting," "pulse nightclub," "pulse shooting." LGBTQ-related topics are the article count sum and article ratio mean for queries on the terms "anti-gay," "anti-lgbt," "gay marriage," "gay rights," "hate crime," and "same sex marriage." Terrorism-related topics are the article count sum and ratio mean for queries on the terms "isis," "lone wolf," "mass shooting," "terror attack," and "terrorism."

A.8 Chicago Council Study

A.8.1 Data Details

The Chicago Council on Global Affairs Poll is a nationally representative adult survey fielded between June 10-26, 2016 ($N = 2061$). The survey was conducted by GfK Knowledge Networks. The margin of sampling error for the weighted data is $\pm$ 2.4 percentage points. The data are subsetted to respondents who took between 10-60 minutes to complete the roughly 120 item survey ($N = 1704$).

A.8.2 Outcome Items

"Less Safe Since 9/11" Do you think that, as a country, we are more safe, about as safe, or less safe than we were before the terrorist attacks of September 11th, 2001? 1) More safe, 2) About as safe 3) Less safe. Measured binary = 1 if respondent indicates "less safe."

"Terror Attacks Likely" How likely is it that occasional acts of terrorism in the U.S. will be part of life in the future? 1) Very likely, 2) Somewhat likely, 3) Not very likely, 4) Not at all likely. Re-scaled from 0-1 with 1 = very likely.

"Terrorism = Critical Threat" Below is a list of possible threats to the vital interest of the United States in the next 10 years. For each one, please select whether you see this as a critical threat, an important but not critical threat, or not an important threat at all: International terrorism. 1) Critical threat, 2) Important but not critical threat, 3) Not an important threat. Measured binary = 1 if respondent indicates "critical threat."

"Worried (Terrorism)" Are you very worried, somewhat worried, not very worried or not worried at all that: You or someone you know will be the target of a terrorist attack. 1) Very worried, 2) Somewhat worried, 3) Not very worried, 4) Not at all worried. Re-scaled from 0-1 with 1 = very worried.

"Worried (Gun Violence)" Are you very worried, somewhat worried, not very worried or not worried at all that: You or someone you know will be the target of gun violence. 1) Very worried, 2) Somewhat worried, 3) Not very worried, 4) Not at all worried. Re-scaled from 0-1 with 1 = very worried.

A.8.3 Balance Plot

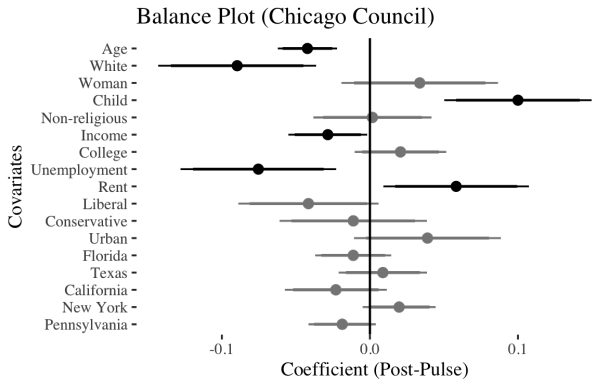

Figure A6: Covariate Balance for Survey Respondent Characteristics Before and After the Pulse Massacre in the Chicago Council on Global Affairs Survey (June 2016). Black coefficients are statistically significant, grey otherwise. All estimates use post-stratification survey weights to ensure representativeness. All covariates scaled between 0-1. 95% CIs displayed derived from HC2 robust standard errors.

A.8.4 Regression Table

Table A1: The Pulse Massacre Was Perceived by the Mass Public

	Less Safe		Terror Likely		Terror Threat		Worry (Terror)		Worry (Gun Violence)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Post-Pulse	0.10***	0.12***	0.07***	0.08***	0.03	0.05*	0.06***	0.05**	0.03*	0.02
	(0.03)	(0.03)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age		0.19*		0.09		0.24**		−0.06		−0.07
		(0.08)		(0.05)		(0.08)		(0.05)		(0.05)
White		0.10**		0.05*		0.01		−0.05**		−0.06**
		(0.03)		(0.02)		(0.03)		(0.02)		(0.02)
Woman		0.03		0.02		0.07**		0.09***		0.09***
		(0.03)		(0.02)		(0.02)		(0.02)		(0.02)
Child		−0.01		−0.03		−0.09**		−0.01		0.00
		(0.03)		(0.02)		(0.03)		(0.02)		(0.02)
Non-Religious		−0.07		−0.02		−0.14***		−0.08***		−0.03
		(0.04)		(0.02)		(0.04)		(0.02)		(0.02)
Income		−0.09		0.13**		0.23***		−0.02		−0.03
		(0.06)		(0.05)		(0.06)		(0.04)		(0.04)
College		−0.05		−0.03		−0.03		−0.02		0.00
		(0.04)		(0.02)		(0.03)		(0.02)		(0.02)
Unemployed		−0.01		0.01		−0.04		0.01		−0.00
		(0.03)		(0.02)		(0.03)		(0.02)		(0.02)
Rent		−0.02		0.01		0.09**		0.01		0.03
		(0.03)		(0.02)		(0.03)		(0.02)		(0.02)
Liberal		−0.08*		−0.02		−0.02		−0.04		0.03
		(0.03)		(0.02)		(0.03)		(0.02)		(0.02)
Conservative		0.16***		0.04		0.05		0.02		−0.06**
		(0.03)		(0.02)		(0.03)		(0.02)		(0.02)
Urban		−0.02		−0.02		−0.00		0.01		0.02
		(0.03)		(0.02)		(0.03)		(0.02)		(0.02)
State FE	N	Y	N	Y	N	Y	N	Y	N	Y
R^2	0.01	0.09	0.02	0.10	0.00	0.08	0.01	0.07	0.00	0.08
N	1704	1704	836	836	1415	1415	1693	1693	1696	1696

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. Models 1, 3, 5, 7, 9 do not adjust for control covariates while Models 2, 4, 6, 8, and 10 do. All models use weights for representativeness. HC2 robust standard errors in parentheses.

A.9 Google Trends Data Details

We acquired Google Trends search data at the weekly level from the `gtrendsR` R package. We generate three different search intensity measures capturing interest in the Pulse nightclub shooting, LGBTQ-related issues, and terrorism-related issues. The Pulse-related issue measure is the average of the Google Trends search intensity measures for separate queries on the "pulse nightclub," "pulse shooting," "orlando massacre," and "orlando shooting." The LGBTQ-related issue measure is the average of the Google Trends search intensity measures for separate queries on "gay rights," "gay marriage," "same-sex marriage," "hate crime," "anti-gay," and "anti-lgbt." The terrorism-related issue measure is the average of the Google Trends search intensity measures for separate queries on "terrorism," "terror attack," "lone wolf," "ISIS," and "mass shooting."

The search intensity measure is the number of total searches divided by the total searches of the geography (United States) and time range (January 1, 2016-October 1, 2016) it represents to compare relative popularity. The numbers are scaled on a range of 0-100 based on a topic's proportion to all searches on all topics. For more information see `https://support.google.com/trends/answer/4365533?hl=en`

A.10 Hate Crime Perceptions Data Details

The AP/Black Youth Project July Poll is a nationally representative adult survey ($N = 1940$) fielded between July 9, 2016 and July 12, 2016 The data are weighted to reflect U.S. census figures on demographic variables. The margin of error for the weighted data is $\pm$ 4 percentage points. The item of interest on Figure A5, Panel B is: "You may recall that last month (June 2016), 49 people were shot and killed (and 53 people were injured) by 29-year-old Omar Mateen at Pulse nightclub in Orlando, Florida. From what you remember, do you think the shooting at the nightclub in Orlando, Florida was a terrorist act, a hate crime against people who are gay, lesbian, bisexual, and transgender, a hate crime against Latinos/Hispanics, or none of the above? Please select all that apply."

A.11 Behavioral Shifts Post-Pulse

A.11.1 Anti-LGBTQ+ Hate Crimes: Details

We evaluate if the Pulse massacre motivated anti-LGBTQ+ hate crimes, consistent with prior research suggesting mass violence may have a contagion or "copy-cat" effect (Towers et al. 2015). To assess trends in hate crimes, we use data from the FBI Uniform Crime Report on hate crimes across the United States at the daily level between January 1, 2016, and December 31, 2016. Importantly, because the Pulse massacre was understood as a terrorist attack not necessarily motivated by anti-LGBTQ+ bias, it was not classified as a hate crime, even though it was perceived by the mass public as an anti-LGBTQ+ hate crime (Figure A5). Therefore, our analyses assessing the effect of the Pulse massacre on hate crimes is not driven by the massacre itself.

Figure A7 displays anti-LGBTQ+ (Panel A), anti-Black (Panel B), anti-Jewish (Panel C), and anti-Latino (Panel D) hate crimes during 2016 at the daily-level over time. The descriptive statistics suggest anti-LGBTQ+ hate crimes increased for a brief period after the Pulse massacre, but not anti-Black, anti-Jewish, and anti-Latino hate crimes.

Regression discontinuity-in-time estimates using the Calonico et al. (2015) optimal bandwidth selection approach corroborates the descriptive statistics (Figure A8). Immediately after Pulse, there's an increase in roughly 2 daily anti-LGBTQ+ hate crimes. However, there is 0 increase in the number of daily anti-Black, anti-Jewish, or anti-Latino hate crimes. These findings are robust to a variety of kernel and polynomial specifications for the running variable (days to Pulse).

The regression discontinuity estimates characterizing are robust. They hold using a variety of bandwidths from 10-100 days (Figure A9), and many of the coefficients are larger than at least 90% of the effects from pre-treatment placebo discontinuities (Figure A10). These effects are also not driven by Pride month, since they do not manifest in years prior to Pulse (2010-2015) or years after Pulse (2017-2019) (Figure A11).

A.11.2 Anti-LGBTQ+ Hate Crimes: Descriptive Statistics

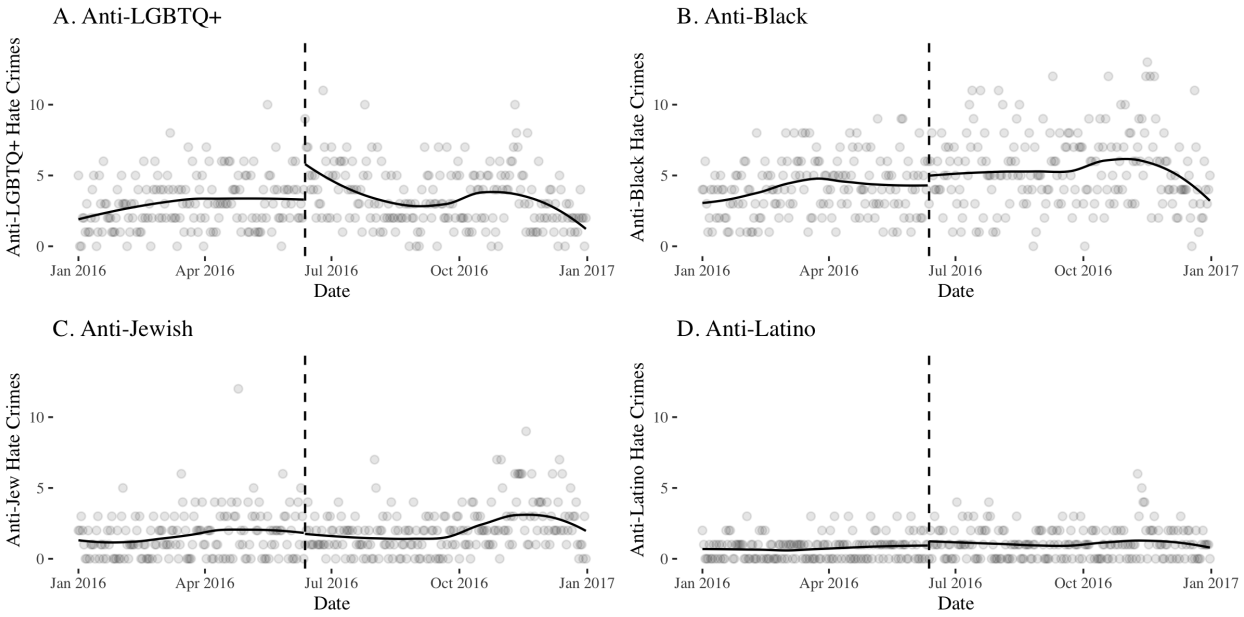

Figure A7: Descriptive Statistics Characterizing Different Hate Crimes Over Time in 2016. The x-axis is the date. The y-axis is the number of hate crimes in a given day. Dashed vertical line denotes the moment the Pulse massacre occurred (June 12). Loess lines fit on each side of the moment the Pulse massacre occurred. Panels A-D display anti-LGBTQ+, anti-Black, anti-Jewish, and anti-Latino hate crimes.

A.11.3 Anti-LGBTQ+ Hate Crimes: RDiT Estimates

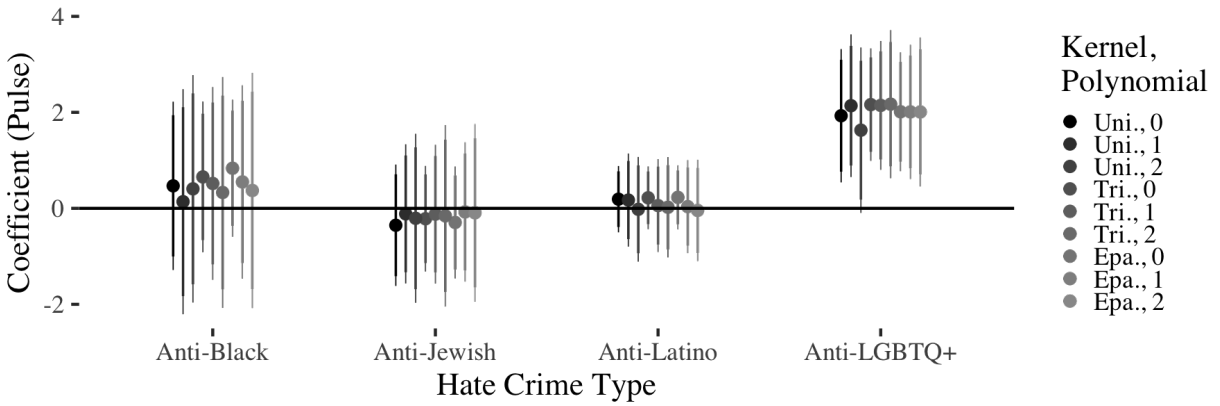

Figure A8: Regression Discontinuity-in-Time *Post-Pulse* Coefficient Estimates and Hate Crimes The x-axis is the hate crime type. The y-axis is the *Post-Pulse* coefficient. Color denotes kernel and polynomial degree at use. 95% CIs displayed from robust standard errors.

A.11.4 Anti-LGBTQ+ Hate Crimes: Close to Bandwidth Estimates

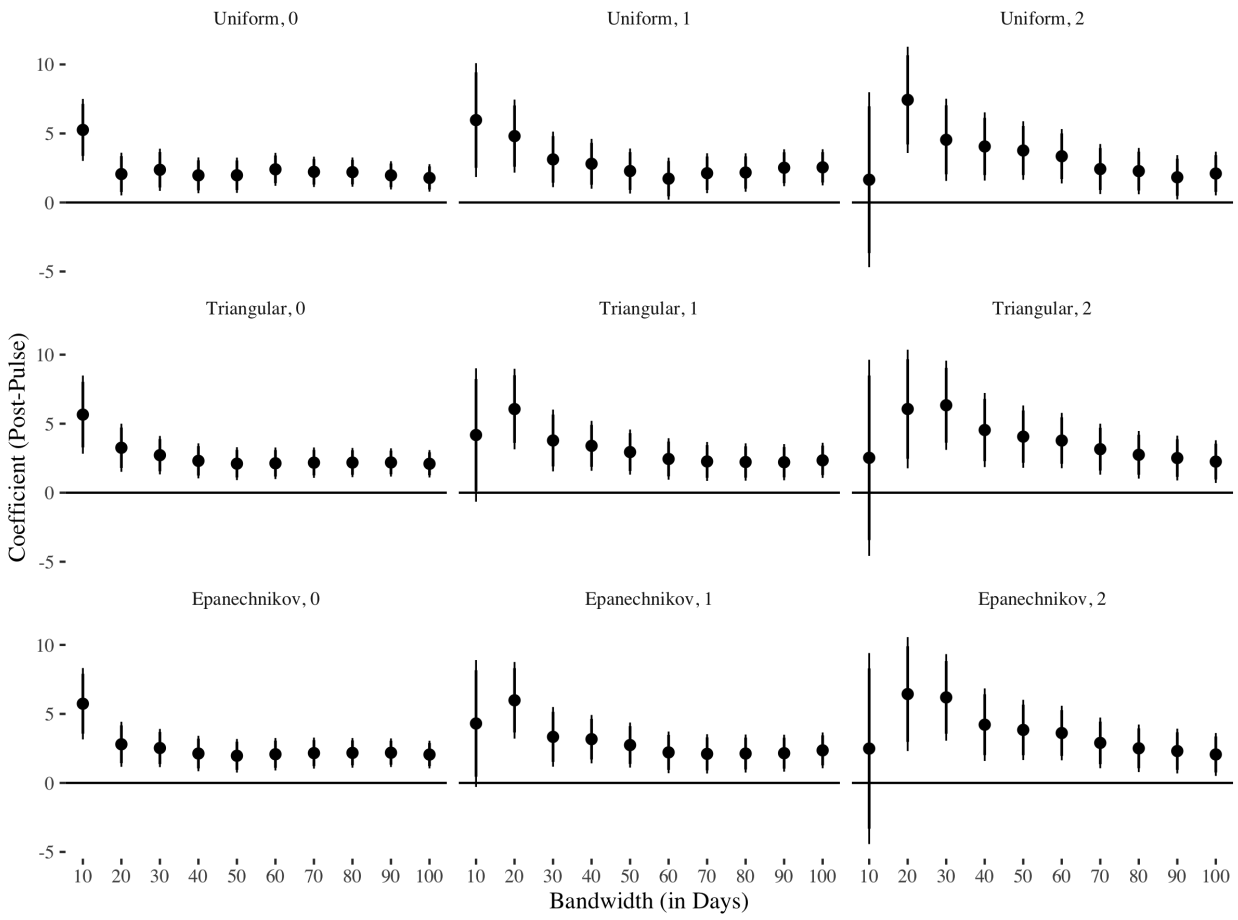

Figure A9: Regression Discontinuity-in-Time *Post-Pulse* Coefficient Estimates Using Bandwidths Close to Discontinuity The x-axis is the bandwidth (in days). The y-axis is the *Post-Pulse* coefficient. Each panel denotes the kernel at use and running variable polynomial degree (0-2). 95% CIs displayed from robust standard errors.

A.11.5 Anti-LGBTQ+ Hate Crimes: Pre-Pulse Temporal Placebo

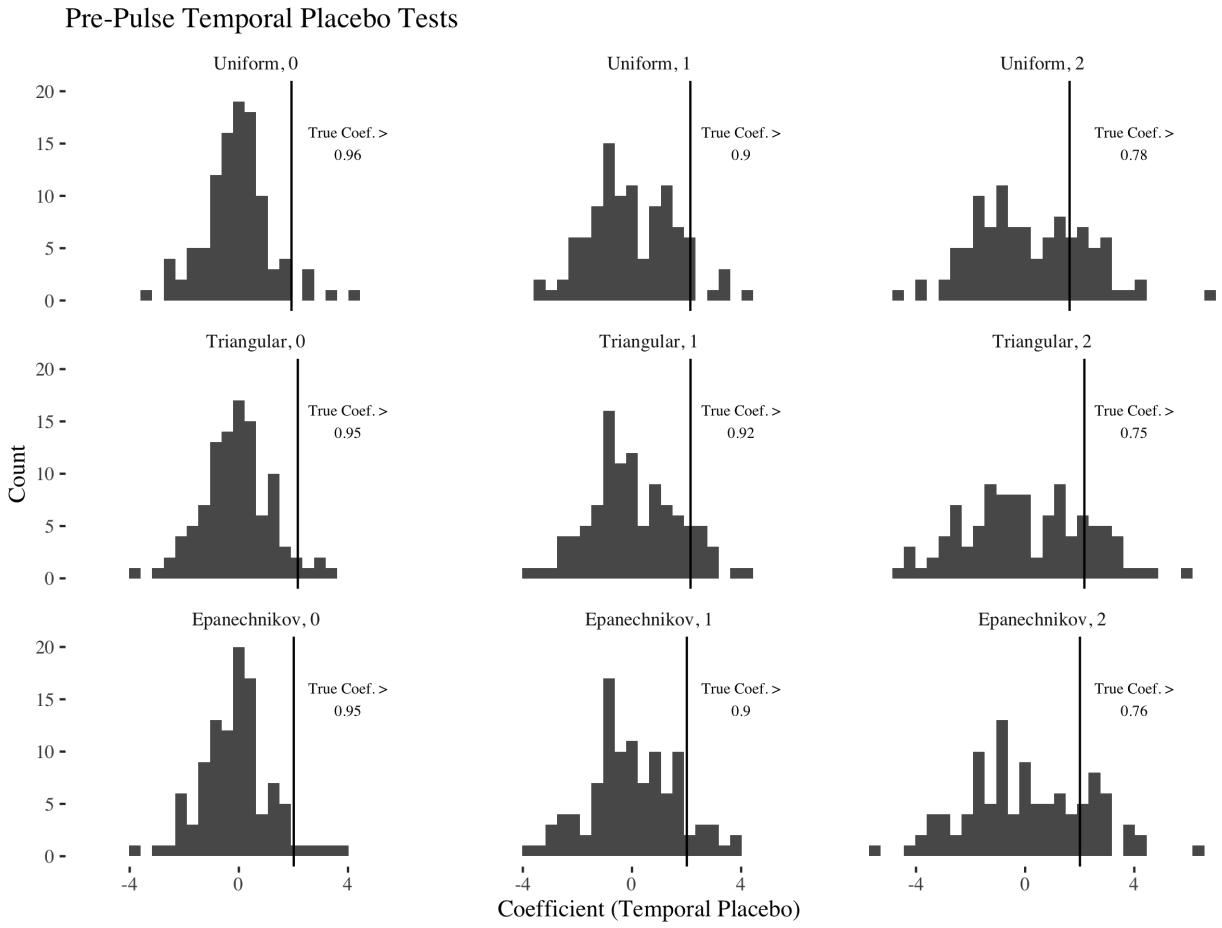

Figure A10: Comparing *Post-Pulse* Coefficient with Temporal Placebo Tests Prior to Pulse The x-axis is the temporal placebo coefficient size. Vertical line denotes true *post-Pulse* coefficient size. Annotation denotes the proportion of placebo coefficients the true coefficient is larger than. Panels denote kernel and polynomial degrees (0-2). 95% CIs displayed from robust standard errors.

A.11.6 Anti-LGBTQ+ Hate Crimes: Other Year Temporal Placebo

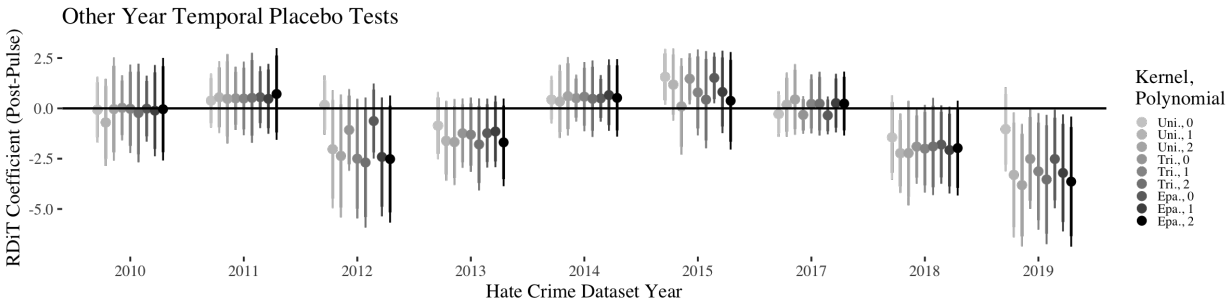

Figure A11: Post-June 12 Placebo Tests on Years Prior to and After Pulse. The x-axis denotes the hate crime dataset year (2010-2015, 2017-2019). The y-axis characterizes the RDiT coefficient of a placebo indicator equal to 1 after June 12, the calendar date of the Pulse massacre. Color denotes kernel and polynomial degree at use (0-2). 95% CIs displayed from robust standard errors.

A.11.7 Donations to Pro-LGBTQ+ Organizations

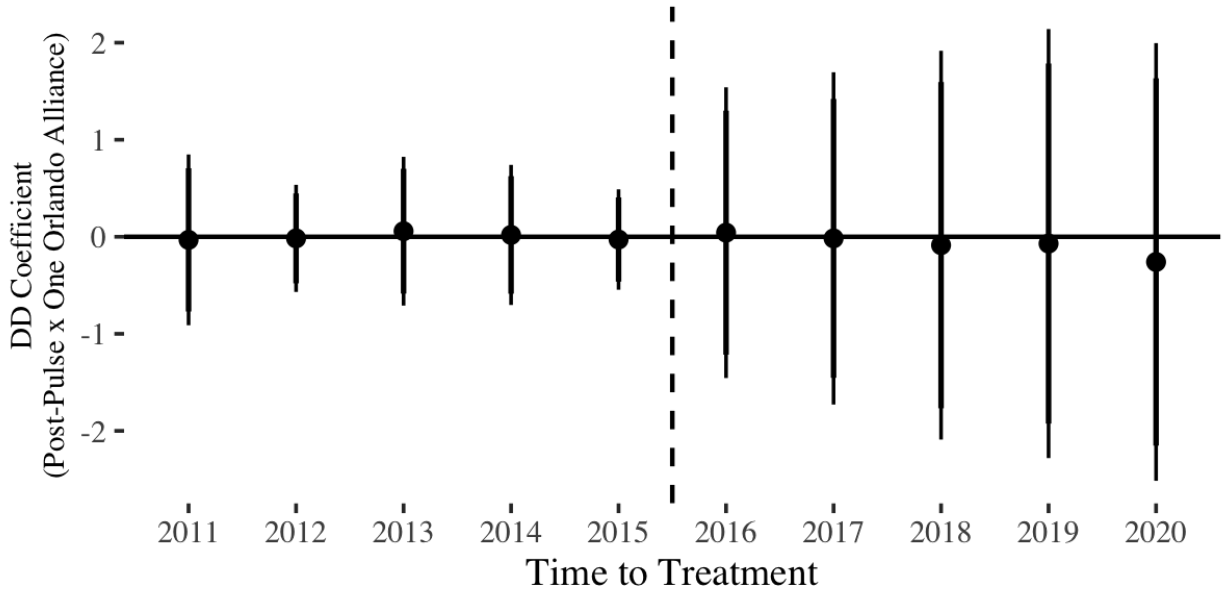

Figure A12: The Pulse Massacre Did Not Motivate A Differential Increase in Donations to Pro-LGBTQ+ Organizations in Florida. The y-axis is the differential effect of Pulse on the logged donations to Florida pro-LGBTQ+ organizations that are a part of the One Orlando Alliance. The x-axis is the time to treatment (tax years 2011-2020). Dashed line denotes *post-Pulse* coefficients. 95% CIs displayed.

To assess if the Pulse massacre motivated support for pro-LGBTQ+ organizations serving the Orlando LGBTQ+ community, we assess if contributions (i.e. donations) to non-profit pro-LGBTQ+ organizations serving Orlando differentially increased relative to other non-profit organizations after the Pulse massacre. We used two different datasets to conduct this assessment. First, we used tax return information on the universe of non-profits that submitted tax returns between 2011-2020 from the Internal Revenue Service (IRS).[24] This data includes our outcome of interest, the amount of monetary *contributions* declared in a given tax year (inflation adjusted to 2011 U.S. dollars). We log the contributions outcome (plus 1 to ensure identification, *log(contributions + 1)*). Second, we merged this information with data we collected identifying non-profits who were serving the Orlando LGBTQ+ community and were soliciting monetary support through the One Orlando Alliance, a conglomerate of LGBTQ+ serving organizations in Central Florida that engaged in resource sharing after the Pulse massacre.[25] Consistent with the sample we derived from the IRS data, we only included One Orlando organizations who filed tax returns for each year between 2011-2020 (suggesting they existed across the entire temporal domain of the panel) and were local, not national organizations (e.g. the Human Rights Campaign, ACLU). We exclude national organizations identified on the One Orlando Alliance member list from the IRS data as well.[26]

[24]Source: `https://www.irs.gov/charities-non-profits/form-990-series-downloads`

[25]Source: `https://oneorlandoalliance.org/our-history/`

[26]See `https://oneorlandoalliance.org/our-members/` for the complete list of One Orlando Alliance

One Orlando Alliance non-profit organizations are coded 1 if they are a part of the Alliance and 0 otherwise in the IRS data (*alliance*).

Figure A12 displays event study estimates from a synthetic controls approach developed by Xu (2017) characterizing the differential effect of Pulse on One Orlando Alliance organization donation receipts. We use the synthetic controls approach to reweight pre-treatment outcome data from the set of untreated non-profit organizations to generate a counterfactual that satisfies the parallel trends assumption to derive the plausibly causal effect of Pulse on contributions to One Orlando Alliance organizations. The event study demonstrates the effect of Pulse on differential donations to Orlando LGBTQ+-serving organizations is 0, suggesting Pulse did not motivate an increase in donations or contributions to key Orlando LGBTQ+-serving organizations.

affiliated organizations, the organizations included in the sample are: 1) Community Legal Services of Mid Florida, 2) Equality Florida, 3) Family Equality, 4) Hope & Help, 5) Hope Community Center, 6) Legal Aid Society of the Orange County Bar Association, 7) Mental Health Organization of Central Florida, 8) Miracle of Love, 9) Orlando Gay Chorus, 10) Planned Parenthood of Southwest and Central Florida 11) Victim Service Center of Central Florida.

A.11.8 Blood Donations

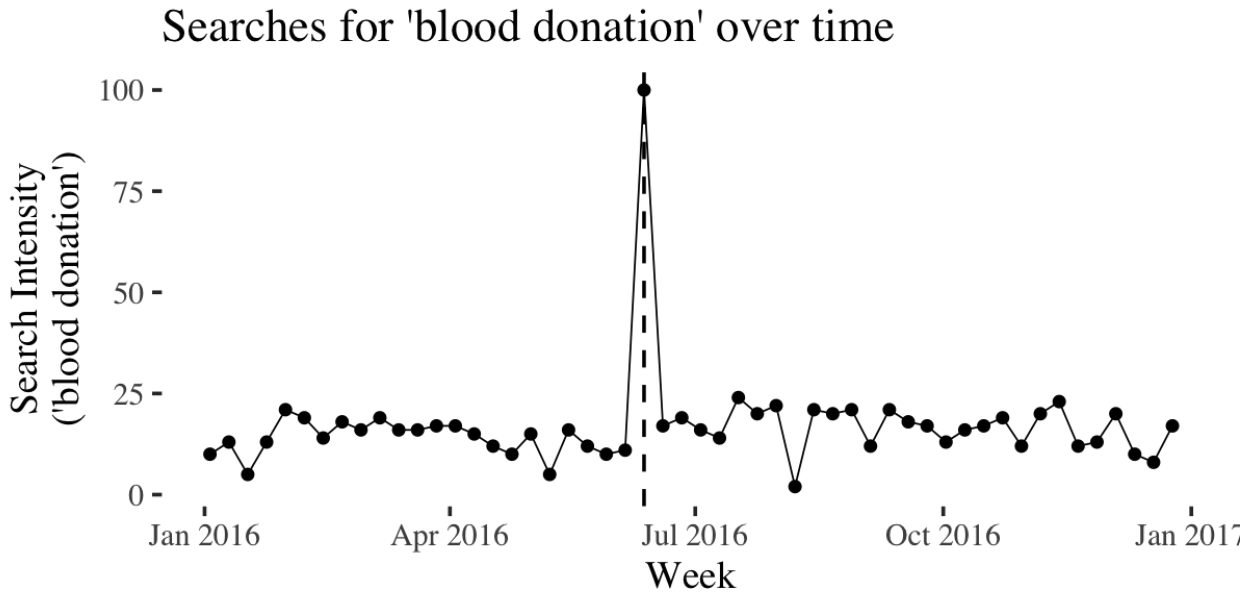

Figure A13: The Pulse Massacre Increased Search Interest in Donating Blood.

Given we do not possess direct data on blood donations for victims of the Pulse massacre, we use Google Trends data to identify the intensity of search interest in "blood donation" over time for the year 2016. Figure A13 clearly demonstrates search interest in "blood donation" substantially increases during the week of the Pulse massacre, but quickly drops off in the following weeks. Although search interest in "blood donation" may not necessarily translate into real-world behavioral action to donate blood, we are confident that our Google Trends analysis provides a rough proxy of real-world blood donation behavior due to qualitative accounts of blood donation after the Pulse massacre. According to the Orlando Sentinel,[27] Orlando hospitals who took in Pulse massacre victims "never had a shortage of blood and no victim experienced a delay in getting the right type of blood." This is because "Thousands of people began donating blood, throughout Florida and even in other states, starting hours after the June 12 shooting. The donations far exceeded the blood needed for the shooting." Moreover, "In the week after the attack, OneBlood took in 28,000 pints of blood; the agency's average weekly volume is about 18,000 pints...It was the biggest response since the Sept. 11 terror attacks in 2001."

The search intensity measure is the number of total searches concerning blood donations divided by the total searches of the geography (United States) and time range (January 1, 2016-December 31, 2016) it represents to compare relative popularity. The numbers are scaled on a range of 0-100 based on a topic's proportion to all searches on all topics. For more information see `https://support.google.com/trends/answer/4365533?hl=en`

[27]Source: `https://www.orlandosentinel.com/news/pulse-orlando-nightclub-shooting/os-oneblood-ceo-pulse-20160629-story.html`

B Study 1: TAPS

B.1 Outcome Measurement

To measure support for same-sex marriage, we use an item in the June 2016 TAPS survey asking respondents if "you generally support or oppose same-sex marriage." with options to choose: 1) Support; 2) Oppose; and 3) No opinion.

B.2 Manipulation Check

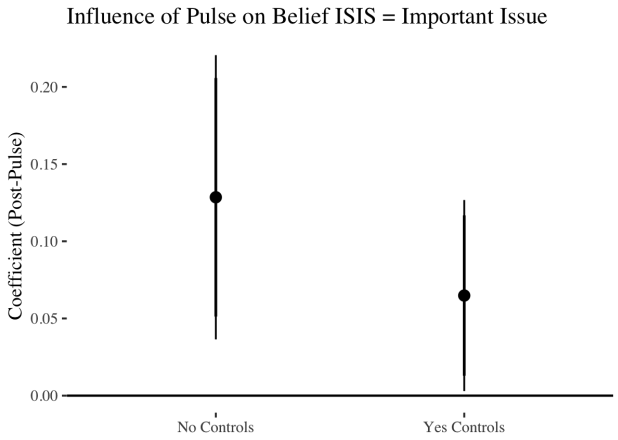

Figure B14: Belief ISIS = Most Important Issue Increases After Pulse. All estimates use post-stratification survey weights to ensure representativeness. All covariates scaled between 0-1. 95% CIs displayed derived from HC2 robust standard errors.

B.3 Insensitivity to Truncation

Table B2: Comparison Between truncated TAPS June '16 Sample and ANES '16 Sample

Covariate	TAPS Jun. '16	ANES '16	Diff.	T-test p-value
Woman	0.51	0.51	0.01	0.73
White	0.78	0.78	0.01	0.71
Age (18-29)	0.20	0.18	0.03	0.03
Age (30-44)	0.24	0.23	0.00	0.76
Age (45-59)	0.29	0.32	-0.02	0.13
Age (60+)	0.26	0.27	-0.01	0.55
College	0.31	0.29	0.02	0.16
Liberal	0.39	0.41	-0.02	0.32
California	0.10	0.09	0.01	0.49
New York	0.05	0.04	0.01	0.36
Florida	0.05	0.06	-0.01	0.22
Pennsylvania	0.05	0.05	-0.00	0.93
Texas	0.07	0.08	-0.01	0.18

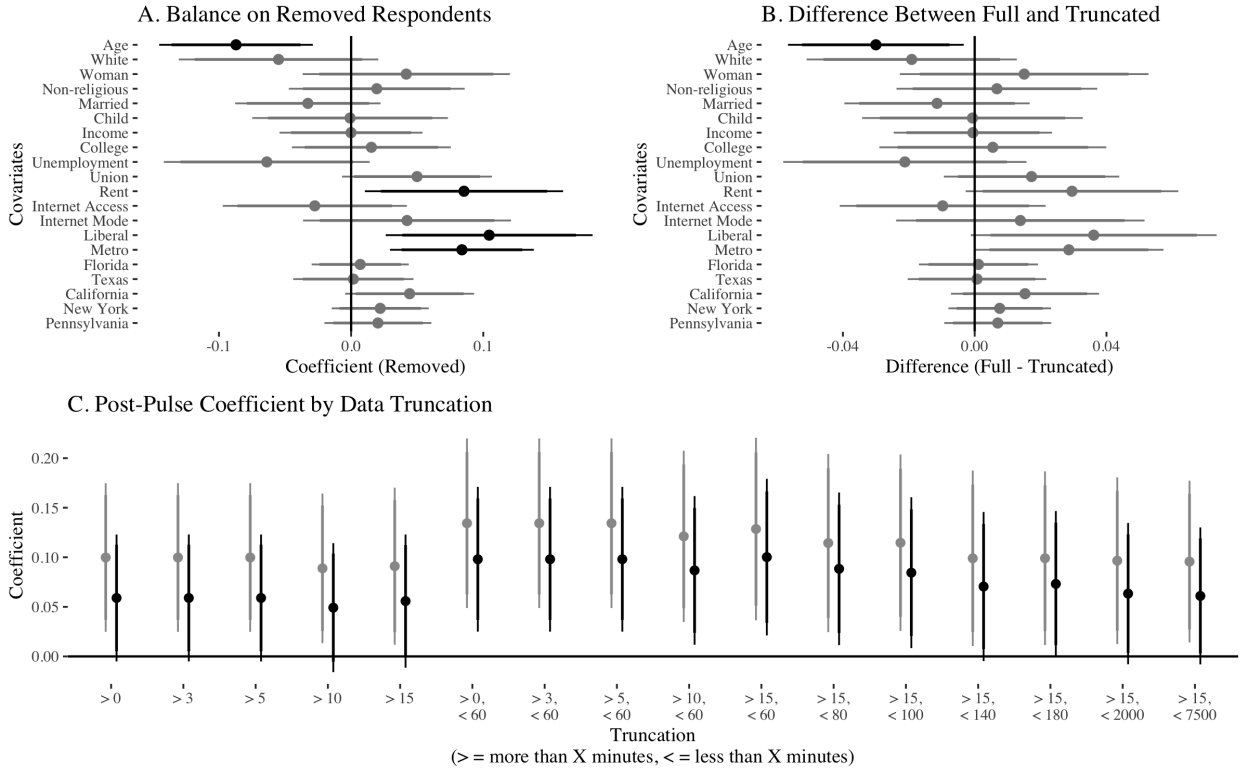

Figure B15: Truncated Estimates. Panel A displays balance between removed respondents (who finished the survey in less than 15 minutes, more than 60) and respondents that were not removed. Panel B displays balance between the full and the truncated sample. Panel C displays coefficients characterizing the influence of *post-Pulse* on *SSM support* based on various samples removing respondents who took more than or less than a particular number of minutes (defined on the x-axis).

B.4 Baseline Covariate Measurement

Age is a 4 category index from 0-3 characterizing respondents aged 18-29, 30-44, 45-59, 60+. Scaled between 0-1.

White is a binary indicator equal to 1 if the respondent indicates that "white" is a race they currently identify as.

Woman is a binary indicator equal to 1 if the respondent indicates they are "female" in response to a question asking if they are female or male.

Child is a binary indicator equal to 1 if the respondent indicates they have children in response to an item asking if they have biological or adopted children.

Non-religious is a binary indicator equal to 1 if the respondent indicates they are "not religious" in response to an item asking if they consider themself Christian, Jewish, Muslim, Buddhist, Hindu, or another religion.

Married is a binary indicator equal to 1 if the respondent did not indicate they were divorced, widowed, separated from their partner, or never married.

Income is a 0-5 scale of the respondents self-reported household income from $<$ \$10,000, \$10-29,999, \$30-49,999, \$50-79,999, \$80-99,999, \$100,000 or more. Scaled between 0-1.

College is a binary indicator equal to 1 if the respondent reports the highest level of school they have completed is at or above a bachelor's degree.

Unemployment is a binary indicator equal to 1 if the respondent reports they are not working at a job for pay.

Union is a binary indicator equal to 1 if the respondent reports they or someone in their household is a member of a labor union.

Rent is a binary indicator equal to 1 if the respondent reports they rent when asked if they rent or own their home.

Internet Access is a binary indicator equal to 1 if the respondent reports they have household internet access.

Internet Mode is a binary indicator equal to 1 if the respondent was recruited via an online mechanism instead of mail, call-in, or outbound calls.

Liberal is a binary indicator equal to 1 if the respondent indicates they are "slightly liberal," "liberal," or "very liberal" in addition to indicating that they are "liberal if they had to choose" in an additional question conditional on indicating "don't know" or "moderate" in the initial question.

Metro is a binary indicator equal to 1 if the respondent lives in a zipcode that is a metropolitan area.

State indicators (Florida, Texas, California, New York, Pennsylvania) are equal to 1 if the respondent self-reports they live in the respective states.

B.5 SSM Support By Interview Date

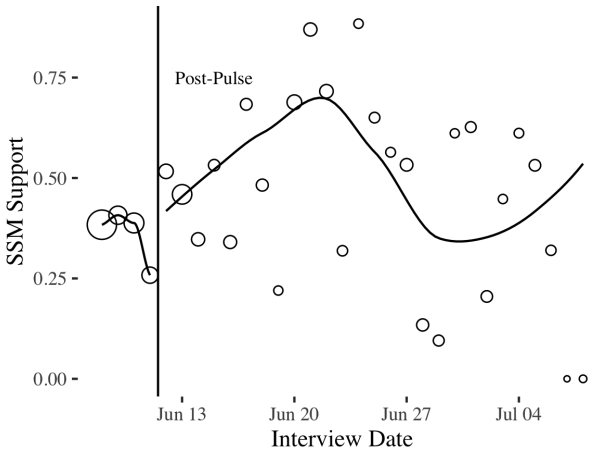

Figure B16: Support for Same Sex Marriage (y-axis) Across Interview Dates (x-axis). Vertical line is the moment the Pulse nightclub shooting occurred. Loess models are fit on each side of the moment the Pulse shooting occurred and are weighted based on the interview date sample size. Larger circles denote more interviews on a given date. All covariates re-scaled between 0-1.

B.6 Outcome Item Non-response Balance

Table B3: Outcome Item Non-response is Balanced Between Pre and Post-Pulse Periods

	SSM Item Non-Response
Post-Pulse	0.008
	(0.005)
R^2	0.003
N	1142

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. HC2 robust standard errors in parentheses.

B.7 Ruling Out Pre-Treatment Time Trends

Table B4: The Effect of Pulse On SSM Support is Not Driven by Pre-Treatment Time Trends

	SSM Support
Post-Pulse Placebo	−0.035
	(0.063)
R^2	0.001
N	679

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. HC2 robust standard errors in parentheses.

B.8 RDiT Approach

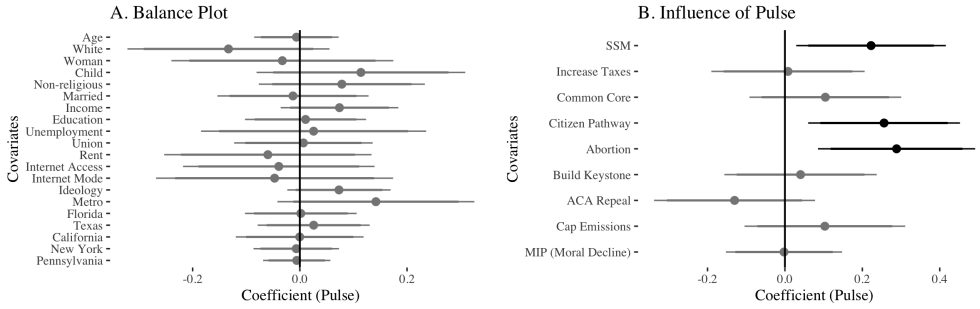

Figure B17: Regression Discontinuity-In-Time Estimates Characterizing Pre/Post Pulse Covariate Balance (Panel A) and the Influence of the Pulse Nightclub Shooting on Policy Preferences (Panel B). 95% CIs displayed derived from HC2 robust standard errors.

B.9 Regression Tables

B.9.1 Balance Plot

Table B5: Balance Plot for TAPS data.

Outcome	Post-Pulse Coef.	SE	p	N
Age	-0.18	0.03	0.00	1142
White	-0.06	0.04	0.17	1142
Woman	0.04	0.05	0.42	1142
Non-religious	0.06	0.04	0.16	1142
Married	0.04	0.03	0.13	1142
Child	-0.06	0.05	0.18	1142
Income	-0.02	0.03	0.48	1142
College	-0.06	0.03	0.07	1140
Unemployment	-0.05	0.05	0.27	1142
Union	0.01	0.03	0.69	1142
Rent	0.04	0.04	0.39	1142
Internet Access	-0.01	0.04	0.79	1142
Internet Mode	0.01	0.05	0.80	1142
Liberal	0.06	0.05	0.18	1142
Metro	0.01	0.04	0.78	1142
Florida	0.01	0.02	0.62	1142
Texas	0.02	0.03	0.56	1142
California	-0.03	0.03	0.18	1142
New York	0.03	0.02	0.17	1142
Pennsylvania	-0.01	0.02	0.66	1142

HC2 robust SEs displayed. Each coefficient is from a separate regression where the outcome is on the left hand side of the linear regression and the *post-Pulse* indicator is on the right hand side of the regression.

B.9.2 Post-Pulse Influence on SSM Support

Table B6: Support for Same Sex Marriage Increases After Pulse

	SSM Support	
	(1)	(2)
Post-Pulse	0.13**	0.10*
	(0.05)	(0.04)
Age		0.02
		(0.07)
White		0.20***
		(0.05)
Woman		0.05
		(0.04)
Non-religious		0.25***
		(0.06)
Married		−0.01
		(0.05)
Child		−0.09
		(0.05)
Income		0.03
		(0.07)
College		0.11**
		(0.04)
Unemployed		−0.03
		(0.05)
Union		−0.05
		(0.05)
Renter		0.03
		(0.06)
Internet Access		−0.02
		(0.05)
Internet Mode		0.01
		(0.04)
Liberal		0.38***
		(0.04)
Metro Area		0.06
		(0.05)
State FE	N	Y
R^2	0.02	0.35
N	1134	1132

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. HC2 robust standard errors in parentheses.

B.9.3 Falsification Tests

Table B7: LGBTQ-Irrelevant Attitudes Do Not Change Post-Pulse

	Increase Taxes	Common Core	Citizen Pathway	Abortion	Build Keystone	Repeal ACA	Cap Emissions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Post-Pulse	−0.02	0.02	0.01	0.05	−0.02	−0.06	−0.02
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
R^2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N	1135	1138	1137	1132	1136	1137	1135

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. HC2 robust standard errors in parentheses.

B.9.4 Temporal Persistence

Table B8: Table Characterizing Post-Pulse Coefficients Cutting Days Immediately After the Pulse Massacre

Post-Pulse Coef.	SE	p-value	N	Days Cut	Controls
0.13	0.05	0.01	1111	1	No
0.14	0.05	0.01	1020	2	No
0.15	0.05	0.01	980	3	No
0.15	0.05	0.01	956	4	No
0.17	0.06	0.00	927	5	No
0.16	0.06	0.01	907	6	No
0.16	0.06	0.01	888	7	No
0.17	0.06	0.01	878	8	No
0.14	0.07	0.04	842	9	No
0.09	0.07	0.20	818	10	No
0.04	0.08	0.59	799	11	No
0.05	0.08	0.55	791	12	No
0.03	0.08	0.72	787	13	No
0.01	0.08	0.93	780	14	No
-0.00	0.08	1.00	775	15	No
-0.03	0.08	0.66	762	16	No
0.01	0.09	0.87	753	17	No
0.07	0.09	0.47	744	18	No
0.05	0.09	0.57	737	19	No
0.01	0.10	0.92	725	20	No
0.08	0.11	0.43	717	21	No
0.09	0.12	0.46	708	22	No
0.05	0.14	0.72	701	23	No
-0.10	0.19	0.58	688	24	No
0.10	0.04	0.02	1109	1	Yes
0.12	0.05	0.01	1018	2	Yes
0.13	0.05	0.01	979	3	Yes
0.13	0.05	0.02	955	4	Yes
0.14	0.05	0.01	926	5	Yes
0.15	0.06	0.01	906	6	Yes
0.14	0.06	0.02	887	7	Yes
0.14	0.06	0.02	877	8	Yes
0.12	0.07	0.08	841	9	Yes
0.05	0.06	0.40	817	10	Yes
-0.02	0.06	0.76	798	11	Yes
-0.03	0.06	0.68	790	12	Yes
-0.04	0.06	0.51	786	13	Yes
-0.04	0.06	0.49	779	14	Yes
-0.05	0.07	0.47	774	15	Yes
-0.08	0.07	0.25	761	16	Yes
-0.08	0.08	0.34	752	17	Yes
0.02	0.05	0.71	743	18	Yes
0.01	0.05	0.82	736	19	Yes
0.00	0.06	0.97	724	20	Yes
0.04	0.07	0.51	716	21	Yes
0.07	0.07	0.34	707	22	Yes
0.05	0.07	0.48	700	23	Yes
0.05	0.10	0.58	687	24	Yes

B.10 Temporal Placebo Tests

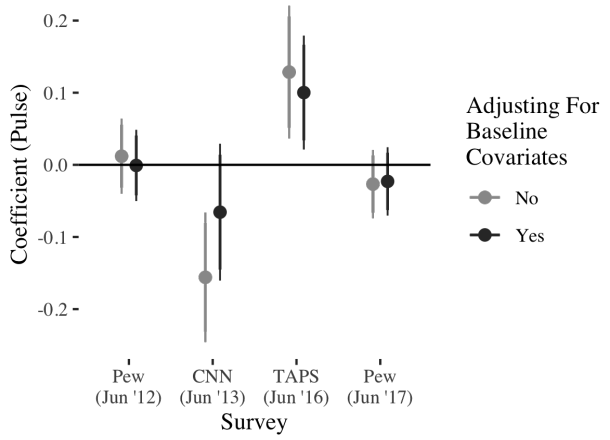

Figure B18: The Effect of Pulse is Unique to 2016. The x-axis is the survey at use. The y-axis is the coefficient for a binary indicator if the respondent was interviewed the calendar day after the Pulse massacre in 2012, 2013, 2016, and 2017 respectively. The outcome for all studies/models is support for same sex marriage. Color denotes the inclusion/exclusion of adjustment for baseline covariates between respondents interviewed before and after the calendar day of the Pulse massacre. All covariates rescaled between 0-1. 95% CIs displayed from HC2 robust standard errors.

B.10.1 Temporal Placebo Test Survey Information

Pew 2012: The 2012 Pew Voter Attitude Survey obtained telephone interviews with a nationally representative sample of $N = 2013$ adults living in the United States. The interviews were conducted by Princeton Survey Research Associates International between June 7, 2012 to June 17, 2012. The margin of sampling error for the complete set of weighted data is $\pm$ 2.6 percentage points. The same sex marriage outcome asks respondents if they "strongly favor, favor, oppose or strongly oppose allowing gays and lesbians to marry legally." The outcome is coded 1 if the respondent indicates strongly favor or favor, 0 otherwise.

CNN 2013: The 2013 CNN poll is a nationally representative survey using landline and cell phone sampling ($N = 1014$). The poll was in the field between June 11, 2013 and June 13, 2013. The same sex marriage outcome asks respondents if they "think marriages between gay and lesbian couples should or should not be recognized by the law as valid, with the same rights as traditional marriages?" The outcome is coded 1 if the respondent indicates gay and lesbian couples should be recognized by the law, and 0 otherwise.

Pew 2017: The 2017 Pew Political Landscape Survey was in the field between June 8, 2017 and June 18, 2017. It is a nationally representative survey of 2504 respondents. Interviews were conducted via landline and cell phone. The survey was conducted by Princeton Survey

Research Associates International. The margin of error is ± 1.6 percentage points. The same sex marriage outcome asks respondents if they "strongly favor, favwor, oppose or strongly oppose allowing gays and lesbians to marry legally." The outcome is coded 1 if the respondent indicates strongly favor or favor, 0 otherwise.

B.11 Alternative Bandwidths

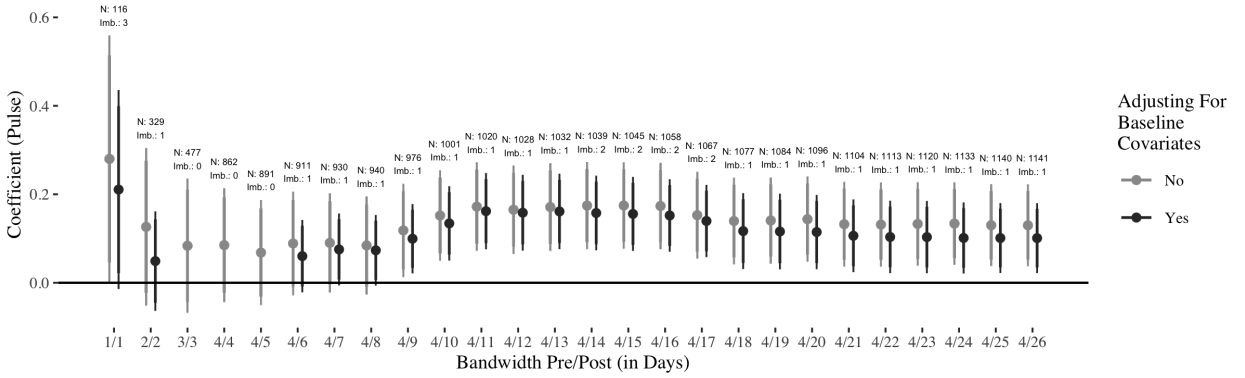

Figure B19: The Effect of Pulse is Robust to Alternate Bandwidths. The x-axis is the bandwidth (in days) for the pre and post Pulse period. The y-axis is the coefficient for a binary indicator if the respondent was interviewed after the Pulse nightclub shooting. Color denotes the inclusion/exclusion of control covariates adjusting for covariate imbalance between respondents interviewed before and after the Pulse nightclub shooting. Annotations denote sample size for each estimate in addition to the number of imbalanced covariates. All covariates re-scaled between 0-1. 95% CIs displayed from HC2 robust standard errors.

B.12 Ordinal Outcome Re-estimation

Table B9: Findings Are Robust To Using Ordinal Outcome

	SSM Support (Ordinal)	
	(1)	(2)
Post-Pulse	0.102*	0.068†
	(0.044)	(0.038)
R^2	0.012	0.351
N	1134	1132
Controls	N	Y

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$. All covariates re-scaled between 0-1. HC2 robust standard errors in parentheses.

B.13 Insensitivity to Weighting

Table B10: Support for Same Sex Marriage Increases After Pulse (Unweighted Estimates)

	SSM Support	
	(1)	(2)
Post-Pulse	0.07*	0.05†
	(0.03)	(0.03)
Age		−0.09*
		(0.04)
White		0.18***
		(0.04)
Woman		0.08**
		(0.03)
Non-religious		0.21***
		(0.03)
Married		−0.01
		(0.03)
Child		−0.08*
		(0.03)
Income		0.09†
		(0.05)
College		0.10***
		(0.03)
Unemployed		−0.01
		(0.03)
Union		0.02
		(0.03)
Renter		−0.00
		(0.04)
Internet Access		0.04
		(0.03)
Internet Mode		0.00
		(0.02)
Liberal		0.44***
		(0.03)
Metro Area		0.09**
		(0.03)
R^2	0.00	0.38
N	1134	1132

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$. All covariates re-scaled between 0-1. HC2 robust standard errors in parentheses.

B.14 Evaluating Mechanisms

Table B11: Evaluating Different Mechanisms That Motivate SSM Support Post-Pulse

	SSM Support							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post-Pulse x Black	0.11							
	(0.12)							
Post-Pulse x Latino		−0.03						
		(0.11)						
Post-Pulse x Woman			−0.09					
			(0.08)					
Post-Pulse x % LGBTQ (State)				−0.02				
				(0.77)				
Post-Pulse x SS Couple Density					−0.20			
					(0.34)			
Post-Pulse x Political Interest						0.03		
						(0.08)		
Post-Pulse x News Freq.							−0.02	
							(0.08)	
Post-Pulse x Liberal								0.01
								(0.08)
R^2	0.37	0.36	0.36	0.36	0.36	0.36	0.36	0.35
N	1132	1132	1132	1132	1132	1132	1132	1132

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All models are fully specified, this table only presents the interaction between the *post-pulse* indicator and mechanisms that may explain the adoption of SSM support. HC2 robust standard errors in parentheses. SEs in Models 4, 5 are clustered at the state and county-level respectively. All variables are scaled between 0-1. All estimates are population-weighted.

C Study 2: PI S-IAT

C.1 Baseline Covariate Measurement

Age: Self-reported age, rescaled between 0-1.

Woman: 1 if respondent indicates they are "female," 0 otherwise.

White: 1 if respondent indicates they are "white," 0 otherwise.

College: 1 if respondent indicates the highest level of education they have is a "bachelor's degree," "some graduate school," a "master's degree," a "J.D.," a "M.D.," a "PhD," an other "advanced degree" or a "M.B.A." 0 otherwise.

Liberal: 1 if respondent indicates their political identity is "slightly liberal," "moderately liberal," or "strongly liberal." 0 otherwise.

Religious: 1 if respondent indicates they are not "not at all religious," 0 otherwise

Non-Metro: 1 if respondent is not from a "nonmetropolitian area," 0 otherwise.

California/Pennsylvania/New York/Florida/Illinois: 1 if respondent indicates their state of residence is California/Pennsylvania/New York/Florida/Illinois, 0 otherwise.

C.2 Anti-Gay Attitudes Over Time

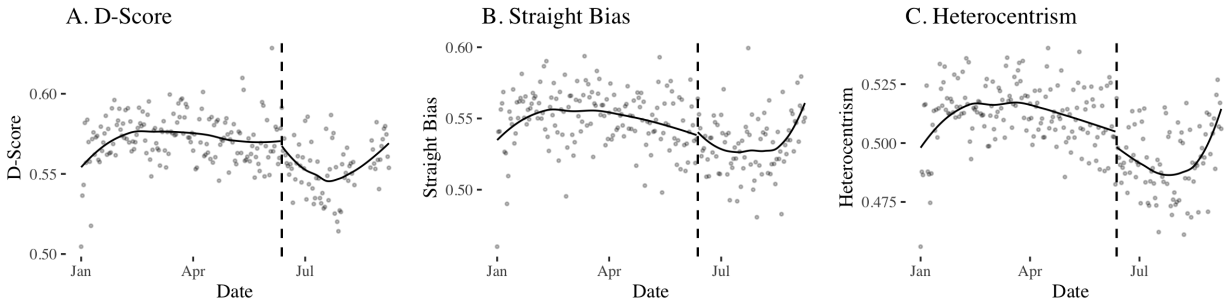

Figure C20: Anti-Gay Attitudes (y-axis) Over Time (x-axis, in days) Between 2016-01-01 and 2016-09-07. Dashed vertical line is the moment the Pulse nightclub massacre occurred. Loess models are fit on each side of the moment Pulse occurred. All covariates re-scaled between 0-1.

C.3 Regression Tables

C.3.1 Balance Tests

Table C12: Balance Tests (Part 1)

Outcome	Post-Pulse Coef.	SE	p	Bandwidth	N
Age	-0.01	0.01	0.42	5 days	1501
Age	-0.01	0.01	0.35	10 days	2665
Age	-0.00	0.00	0.46	15 days	3674
Age	-0.00	0.00	0.92	20 days	4956
Age	0.00	0.00	0.56	25 days	5991
Age	0.01	0.00	0.00	30 days	7778
Age	0.01	0.00	0.00	35 days	9419
Age	0.01	0.00	0.00	40 days	10857
Age	0.02	0.00	0.00	45 days	12198
Age	0.03	0.00	0.00	50 days	14209
Woman	0.01	0.02	0.66	5 days	1501
Woman	0.02	0.02	0.25	10 days	2665
Woman	0.03	0.02	0.06	15 days	3674
Woman	0.02	0.01	0.14	20 days	4956
Woman	0.02	0.01	0.12	25 days	5991
Woman	0.02	0.01	0.14	30 days	7778
Woman	-0.00	0.01	0.92	35 days	9419
Woman	0.00	0.01	0.98	40 days	10857
Woman	-0.00	0.01	0.98	45 days	12198
Woman	-0.01	0.01	0.31	50 days	14209
White	-0.06	0.02	0.02	5 days	1501
White	-0.05	0.02	0.00	10 days	2665
White	-0.05	0.02	0.00	15 days	3674
White	-0.03	0.01	0.02	20 days	4956
White	-0.04	0.01	0.00	25 days	5991
White	-0.00	0.01	0.64	30 days	7778
White	-0.01	0.01	0.52	35 days	9419
White	-0.01	0.01	0.32	40 days	10857
White	-0.01	0.01	0.25	45 days	12198
White	0.00	0.01	0.89	50 days	14209
College	-0.01	0.03	0.84	5 days	1501
College	-0.02	0.02	0.33	10 days	2665
College	-0.02	0.02	0.15	15 days	3674
College	-0.01	0.01	0.52	20 days	4956
College	0.03	0.01	0.04	25 days	5991
College	0.06	0.01	0.00	30 days	7778
College	0.09	0.01	0.00	35 days	9419
College	0.13	0.01	0.00	40 days	10857
College	0.15	0.01	0.00	45 days	12198
College	0.19	0.01	0.00	50 days	14209
Liberal	0.02	0.03	0.43	5 days	1501
Liberal	0.03	0.02	0.15	10 days	2665
Liberal	0.02	0.02	0.20	15 days	3674
Liberal	0.02	0.01	0.20	20 days	4956
Liberal	0.03	0.01	0.03	25 days	5991
Liberal	0.05	0.01	0.00	30 days	7778
Liberal	0.07	0.01	0.00	35 days	9419
Liberal	0.07	0.01	0.00	40 days	10857
Liberal	0.07	0.01	0.00	45 days	12198
Liberal	0.09	0.01	0.00	50 days	14209
Religious	0.00	0.02	0.88	5 days	1501
Religious	-0.00	0.02	0.94	10 days	2665
Religious	0.00	0.02	0.90	15 days	3674
Religious	-0.01	0.01	0.59	20 days	4956
Religious	-0.01	0.01	0.67	25 days	5991
Religious	-0.01	0.01	0.35	30 days	7778
Religious	-0.02	0.01	0.09	35 days	9419
Religious	-0.02	0.01	0.02	40 days	10857
Religious	-0.02	0.01	0.03	45 days	12198
Religious	-0.03	0.01	0.00	50 days	14209

HC2 Robust SEs presented.

Table C13: Balance Tests (Part 2)

Outcome	Post-Pulse Coef.	SE	p	Bandwidth	N
Pennsylvania	0.00	0.01	0.88	5 days	1501
Pennsylvania	0.00	0.01	0.54	10 days	2665
Pennsylvania	0.00	0.01	0.77	15 days	3674
Pennsylvania	0.01	0.01	0.29	20 days	4956
Pennsylvania	0.00	0.00	0.68	25 days	5991
Pennsylvania	-0.00	0.00	0.89	30 days	7778
Pennsylvania	-0.01	0.00	0.09	35 days	9419
Pennsylvania	-0.00	0.00	0.26	40 days	10857
Pennsylvania	-0.00	0.00	0.29	45 days	12198
Pennsylvania	-0.00	0.00	0.77	50 days	14209
New York	0.01	0.01	0.40	5 days	1501
New York	0.00	0.01	0.78	10 days	2665
New York	0.00	0.01	0.86	15 days	3674
New York	-0.00	0.01	0.96	20 days	4956
New York	0.00	0.01	0.80	25 days	5991
New York	-0.00	0.00	0.99	30 days	7778
New York	0.00	0.00	0.29	35 days	9419
New York	0.01	0.00	0.08	40 days	10857
New York	0.01	0.00	0.20	45 days	12198
New York	0.01	0.00	0.14	50 days	14209
Florida	0.03	0.01	0.01	5 days	1501
Florida	0.03	0.01	0.00	10 days	2665
Florida	0.01	0.01	0.19	15 days	3674
Florida	0.01	0.01	0.39	20 days	4956
Florida	0.01	0.01	0.05	25 days	5991
Florida	0.01	0.00	0.10	30 days	7778
Florida	0.01	0.00	0.01	35 days	9419
Florida	0.01	0.00	0.01	40 days	10857
Florida	0.01	0.00	0.00	45 days	12198
Florida	0.01	0.00	0.00	50 days	14209
Illinois	-0.01	0.01	0.56	5 days	1501
Illinois	0.00	0.01	0.95	10 days	2665
Illinois	0.00	0.01	0.62	15 days	3674
Illinois	-0.00	0.01	0.88	20 days	4956
Illinois	-0.00	0.00	0.81	25 days	5991
Illinois	0.00	0.00	0.61	30 days	7778
Illinois	0.00	0.00	0.65	35 days	9419
Illinois	-0.01	0.00	0.08	40 days	10857
Illinois	-0.01	0.00	0.03	45 days	12198
Illinois	-0.01	0.00	0.01	50 days	14209

HC2 Robust SEs presented.

C.3.2 Influence of Pulse on Anti-Gay Attitudes

Table C14: Influence of Pulse on Anti-Gay Attitudes

Outcome	Post-Pulse Coef.	SE	p	Bandwidth	N	Controls
A. D-Score	-0.003	0.007	0.710	5	1487	No
A. D-Score	-0.009	0.006	0.089	10	2639	No
A. D-Score	-0.009	0.005	0.051	15	3638	No
A. D-Score	-0.008	0.004	0.035	20	4907	No
A. D-Score	-0.008	0.004	0.037	25	5925	No
A. D-Score	-0.011	0.003	0.001	30	7689	No
A. D-Score	-0.017	0.003	0.000	35	9313	No
A. D-Score	-0.017	0.003	0.000	40	10735	No
A. D-Score	-0.018	0.003	0.000	45	12057	No
A. D-Score	-0.022	0.002	0.000	50	14051	No
A. D-Score	-0.020	0.002	0.000	Full	41900	No
A. D-Score	-0.002	0.007	0.757	5	1487	Yes
A. D-Score	-0.009	0.005	0.093	10	2639	Yes
A. D-Score	-0.009	0.004	0.055	15	3638	Yes
A. D-Score	-0.007	0.004	0.056	20	4907	Yes
A. D-Score	-0.006	0.003	0.098	25	5925	Yes
A. D-Score	-0.007	0.003	0.026	30	7689	Yes
A. D-Score	-0.012	0.003	0.000	35	9313	Yes
A. D-Score	-0.012	0.003	0.000	40	10735	Yes
A. D-Score	-0.012	0.002	0.000	45	12057	Yes
A. D-Score	-0.014	0.002	0.000	50	14051	Yes
A. D-Score	-0.014	0.002	0.000	Full	41900	Yes
B. Straight Bias	0.000	0.010	0.962	5	1453	No
B. Straight Bias	-0.010	0.008	0.173	10	2584	No
B. Straight Bias	-0.009	0.006	0.182	15	3562	No
B. Straight Bias	-0.008	0.006	0.143	20	4799	No
B. Straight Bias	-0.011	0.005	0.029	25	5794	No
B. Straight Bias	-0.014	0.004	0.001	30	7511	No
B. Straight Bias	-0.020	0.004	0.000	35	9111	No
B. Straight Bias	-0.019	0.004	0.000	40	10519	No
B. Straight Bias	-0.017	0.004	0.000	45	11827	No
B. Straight Bias	-0.022	0.003	0.000	50	13780	No
B. Straight Bias	-0.021	0.002	0.000	Full	42738	No
B. Straight Bias	0.004	0.010	0.694	5	1453	Yes
B. Straight Bias	-0.005	0.007	0.439	10	2584	Yes
B. Straight Bias	-0.006	0.006	0.332	15	3562	Yes
B. Straight Bias	-0.005	0.005	0.310	20	4799	Yes
B. Straight Bias	-0.008	0.005	0.107	25	5794	Yes
B. Straight Bias	-0.008	0.004	0.042	30	7511	Yes
B. Straight Bias	-0.012	0.004	0.001	35	9111	Yes
B. Straight Bias	-0.011	0.003	0.001	40	10519	Yes
B. Straight Bias	-0.010	0.003	0.002	45	11827	Yes
B. Straight Bias	-0.012	0.003	0.000	50	13780	Yes
B. Straight Bias	-0.012	0.002	0.000	Full	42738	Yes
C. Heterocentrism	-0.011	0.007	0.125	5	1489	No
C. Heterocentrism	-0.015	0.005	0.005	10	2643	No
C. Heterocentrism	-0.014	0.004	0.002	15	3645	No
C. Heterocentrism	-0.013	0.004	0.001	20	4920	No
C. Heterocentrism	-0.013	0.003	0.000	25	5946	No
C. Heterocentrism	-0.016	0.003	0.000	30	7720	No
C. Heterocentrism	-0.020	0.003	0.000	35	9342	No
C. Heterocentrism	-0.020	0.002	0.000	40	10772	No
C. Heterocentrism	-0.019	0.002	0.000	45	12106	No
C. Heterocentrism	-0.022	0.002	0.000	50	14093	No
C. Heterocentrism	-0.021	0.001	0.000	Full	43639	No
C. Heterocentrism	-0.010	0.007	0.129	5	1489	Yes
C. Heterocentrism	-0.013	0.005	0.008	10	2643	Yes
C. Heterocentrism	-0.012	0.004	0.002	15	3645	Yes
C. Heterocentrism	-0.011	0.003	0.001	20	4920	Yes
C. Heterocentrism	-0.010	0.003	0.001	25	5946	Yes
C. Heterocentrism	-0.012	0.003	0.000	30	7720	Yes
C. Heterocentrism	-0.014	0.002	0.000	35	9342	Yes
C. Heterocentrism	-0.014	0.002	0.000	40	10772	Yes
C. Heterocentrism	-0.013	0.002	0.000	45	12106	Yes
C. Heterocentrism	-0.014	0.002	0.000	50	14093	Yes
C. Heterocentrism	-0.013	0.001	0.000	Full	43639	Yes

C.3.3 Influence of Control Covariates on Anti-Gay Attitudes

Table C15: Influence of Control Covariates on Heterocentrism (Part 1)

Control	Control Coef.	SE	p	Bandwidth	Outcome	N
Liberal	-0.082	0.007	0.000	5.000	Heterocentrism	1489
Age	0.017	0.022	0.447	5.000	Heterocentrism	1489
White	-0.010	0.007	0.170	5.000	Heterocentrism	1489
Woman	-0.004	0.007	0.583	5.000	Heterocentrism	1489
College	-0.018	0.008	0.017	5.000	Heterocentrism	1489
Religious	0.042	0.008	0.000	5.000	Heterocentrism	1489
Nonmetro	0.004	0.014	0.748	5.000	Heterocentrism	1489
California	-0.000	0.011	0.969	5.000	Heterocentrism	1489
Pennsylvania	0.020	0.016	0.232	5.000	Heterocentrism	1489
New York	0.006	0.013	0.649	5.000	Heterocentrism	1489
Florida	-0.007	0.014	0.617	5.000	Heterocentrism	1489
Illinois	-0.022	0.021	0.289	5.000	Heterocentrism	1489
Liberal	-0.088	0.005	0.000	10.000	Heterocentrism	2643
Age	0.045	0.018	0.010	10.000	Heterocentrism	2643
White	-0.012	0.005	0.027	10.000	Heterocentrism	2643
Woman	-0.004	0.005	0.408	10.000	Heterocentrism	2643
College	-0.006	0.006	0.277	10.000	Heterocentrism	2643
Religious	0.040	0.006	0.000	10.000	Heterocentrism	2643
Nonmetro	0.006	0.009	0.456	10.000	Heterocentrism	2643
California	-0.003	0.008	0.725	10.000	Heterocentrism	2643
Pennsylvania	0.018	0.013	0.177	10.000	Heterocentrism	2643
New York	0.008	0.010	0.415	10.000	Heterocentrism	2643
Florida	-0.011	0.010	0.267	10.000	Heterocentrism	2643
Illinois	-0.016	0.015	0.283	10.000	Heterocentrism	2643
Liberal	-0.084	0.004	0.000	15.000	Heterocentrism	3645
Age	0.048	0.015	0.001	15.000	Heterocentrism	3645
White	-0.009	0.005	0.054	15.000	Heterocentrism	3645
Woman	-0.005	0.004	0.221	15.000	Heterocentrism	3645
College	-0.008	0.005	0.079	15.000	Heterocentrism	3645
Religious	0.044	0.005	0.000	15.000	Heterocentrism	3645
Nonmetro	0.007	0.007	0.333	15.000	Heterocentrism	3645
California	-0.002	0.006	0.768	15.000	Heterocentrism	3645
Pennsylvania	0.013	0.010	0.202	15.000	Heterocentrism	3645
New York	0.005	0.009	0.552	15.000	Heterocentrism	3645
Florida	0.001	0.008	0.927	15.000	Heterocentrism	3645
Illinois	-0.015	0.012	0.209	15.000	Heterocentrism	3645
Liberal	-0.083	0.004	0.000	20.000	Heterocentrism	4920
Age	0.043	0.013	0.001	20.000	Heterocentrism	4920
White	-0.009	0.004	0.022	20.000	Heterocentrism	4920
Woman	-0.008	0.004	0.030	20.000	Heterocentrism	4920
College	-0.004	0.004	0.275	20.000	Heterocentrism	4920
Religious	0.044	0.004	0.000	20.000	Heterocentrism	4920
Nonmetro	-0.002	0.006	0.702	20.000	Heterocentrism	4920
California	-0.009	0.005	0.085	20.000	Heterocentrism	4920
Pennsylvania	0.006	0.009	0.519	20.000	Heterocentrism	4920
New York	-0.005	0.008	0.533	20.000	Heterocentrism	4920
Florida	0.004	0.007	0.624	20.000	Heterocentrism	4920
Illinois	-0.009	0.009	0.338	20.000	Heterocentrism	4920
Liberal	-0.081	0.003	0.000	25.000	Heterocentrism	5946
Age	0.045	0.011	0.000	25.000	Heterocentrism	5946
White	-0.012	0.004	0.000	25.000	Heterocentrism	5946
Woman	-0.008	0.003	0.021	25.000	Heterocentrism	5946
College	-0.003	0.004	0.341	25.000	Heterocentrism	5946
Religious	0.043	0.004	0.000	25.000	Heterocentrism	5946
Nonmetro	0.001	0.006	0.859	25.000	Heterocentrism	5946
California	-0.010	0.005	0.029	25.000	Heterocentrism	5946
Pennsylvania	0.001	0.008	0.946	25.000	Heterocentrism	5946
New York	-0.011	0.007	0.138	25.000	Heterocentrism	5946
Florida	0.004	0.007	0.591	25.000	Heterocentrism	5946
Illinois	-0.003	0.008	0.706	25.000	Heterocentrism	5946
Liberal	-0.081	0.003	0.000	30.000	Heterocentrism	7720
Age	0.046	0.010	0.000	30.000	Heterocentrism	7720
White	-0.016	0.003	0.000	30.000	Heterocentrism	7720
Woman	-0.012	0.003	0.000	30.000	Heterocentrism	7720
College	-0.003	0.003	0.273	30.000	Heterocentrism	7720
Religious	0.042	0.003	0.000	30.000	Heterocentrism	7720

Table C16: Influence of Control Covariates on Heterocentrism (Part 2)

Control	Control Coef.	SE	p	Bandwidth	Outcome	N
Religious	0.042	0.003	0.000	30.000	Heterocentrism	7720
Nonmetro	-0.001	0.005	0.864	30.000	Heterocentrism	7720
California	-0.011	0.004	0.008	30.000	Heterocentrism	7720
Pennsylvania	-0.004	0.007	0.596	30.000	Heterocentrism	7720
New York	-0.014	0.006	0.026	30.000	Heterocentrism	7720
Florida	0.001	0.007	0.828	30.000	Heterocentrism	7720
Illinois	-0.009	0.008	0.257	30.000	Heterocentrism	7720
Liberal	-0.078	0.003	0.000	35.000	Heterocentrism	9342
Age	0.045	0.009	0.000	35.000	Heterocentrism	9342
White	-0.016	0.003	0.000	35.000	Heterocentrism	9342
Woman	-0.012	0.003	0.000	35.000	Heterocentrism	9342
College	-0.003	0.003	0.213	35.000	Heterocentrism	9342
Religious	0.043	0.003	0.000	35.000	Heterocentrism	9342
Nonmetro	0.001	0.005	0.829	35.000	Heterocentrism	9342
California	-0.012	0.004	0.002	35.000	Heterocentrism	9342
Pennsylvania	-0.004	0.006	0.482	35.000	Heterocentrism	9342
New York	-0.016	0.006	0.004	35.000	Heterocentrism	9342
Florida	0.001	0.006	0.823	35.000	Heterocentrism	9342
Illinois	-0.010	0.007	0.139	35.000	Heterocentrism	9342
Liberal	-0.077	0.002	0.000	40.000	Heterocentrism	10772
Age	0.045	0.008	0.000	40.000	Heterocentrism	10772
White	-0.016	0.003	0.000	40.000	Heterocentrism	10772
Woman	-0.013	0.002	0.000	40.000	Heterocentrism	10772
College	-0.004	0.003	0.086	40.000	Heterocentrism	10772
Religious	0.043	0.003	0.000	40.000	Heterocentrism	10772
Nonmetro	0.006	0.004	0.199	40.000	Heterocentrism	10772
California	-0.011	0.004	0.003	40.000	Heterocentrism	10772
Pennsylvania	-0.005	0.006	0.421	40.000	Heterocentrism	10772
New York	-0.016	0.005	0.001	40.000	Heterocentrism	10772
Florida	0.001	0.006	0.897	40.000	Heterocentrism	10772
Illinois	-0.008	0.006	0.225	40.000	Heterocentrism	10772
Liberal	-0.077	0.002	0.000	45.000	Heterocentrism	12106
Age	0.045	0.008	0.000	45.000	Heterocentrism	12106
White	-0.016	0.002	0.000	45.000	Heterocentrism	12106
Woman	-0.013	0.002	0.000	45.000	Heterocentrism	12106
College	-0.004	0.002	0.124	45.000	Heterocentrism	12106
Religious	0.044	0.003	0.000	45.000	Heterocentrism	12106
Nonmetro	0.005	0.004	0.204	45.000	Heterocentrism	12106
California	-0.012	0.003	0.001	45.000	Heterocentrism	12106
Pennsylvania	-0.004	0.006	0.519	45.000	Heterocentrism	12106
New York	-0.018	0.005	0.000	45.000	Heterocentrism	12106
Florida	0.004	0.006	0.513	45.000	Heterocentrism	12106
Illinois	-0.010	0.006	0.102	45.000	Heterocentrism	12106
Liberal	-0.078	0.002	0.000	50.000	Heterocentrism	14093
Age	0.047	0.007	0.000	50.000	Heterocentrism	14093
White	-0.017	0.002	0.000	50.000	Heterocentrism	14093
Woman	-0.013	0.002	0.000	50.000	Heterocentrism	14093
College	-0.005	0.002	0.044	50.000	Heterocentrism	14093
Religious	0.043	0.002	0.000	50.000	Heterocentrism	14093
Nonmetro	0.004	0.004	0.257	50.000	Heterocentrism	14093
California	-0.011	0.003	0.001	50.000	Heterocentrism	14093
Pennsylvania	-0.002	0.006	0.769	50.000	Heterocentrism	14093
New York	-0.017	0.004	0.000	50.000	Heterocentrism	14093
Florida	0.002	0.005	0.654	50.000	Heterocentrism	14093
Illinois	-0.008	0.005	0.166	50.000	Heterocentrism	14093
Liberal	-0.080	0.001	0.000	200.000	Heterocentrism	43639
Age	0.030	0.005	0.000	200.000	Heterocentrism	43639
White	-0.012	0.001	0.000	200.000	Heterocentrism	43639
Woman	-0.015	0.001	0.000	200.000	Heterocentrism	43639
College	-0.005	0.001	0.000	200.000	Heterocentrism	43639
Religious	0.047	0.001	0.000	200.000	Heterocentrism	43639
Nonmetro	0.012	0.002	0.000	200.000	Heterocentrism	43639
California	-0.012	0.002	0.000	200.000	Heterocentrism	43639
Pennsylvania	-0.001	0.003	0.714	200.000	Heterocentrism	43639
New York	-0.012	0.002	0.000	200.000	Heterocentrism	43639
Florida	-0.002	0.003	0.592	200.000	Heterocentrism	43639
Illinois	-0.002	0.003	0.553	200.000	Heterocentrism	43639

Table C17: Influence of Control Covariates on Straight Bias (Part 1)

Control	Control Coef.	SE	p	Bandwidth	Outcome	N
Liberal	-0.106	0.011	0.000	5.000	Straight Bias	1453
Age	0.040	0.033	0.229	5.000	Straight Bias	1453
White	-0.011	0.011	0.299	5.000	Straight Bias	1453
Woman	-0.027	0.011	0.018	5.000	Straight Bias	1453
College	-0.014	0.011	0.197	5.000	Straight Bias	1453
Religious	0.072	0.012	0.000	5.000	Straight Bias	1453
Nonmetro	0.025	0.022	0.267	5.000	Straight Bias	1453
California	0.001	0.016	0.943	5.000	Straight Bias	1453
Pennsylvania	-0.003	0.025	0.896	5.000	Straight Bias	1453
New York	-0.010	0.017	0.558	5.000	Straight Bias	1453
Florida	-0.020	0.021	0.344	5.000	Straight Bias	1453
Illinois	-0.026	0.023	0.261	5.000	Straight Bias	1453
Liberal	-0.109	0.008	0.000	10.000	Straight Bias	2584
Age	0.074	0.026	0.005	10.000	Straight Bias	2584
White	-0.009	0.008	0.252	10.000	Straight Bias	2584
Woman	-0.030	0.008	0.000	10.000	Straight Bias	2584
College	-0.006	0.008	0.481	10.000	Straight Bias	2584
Religious	0.073	0.009	0.000	10.000	Straight Bias	2584
Nonmetro	0.018	0.014	0.200	10.000	Straight Bias	2584
California	0.002	0.011	0.835	10.000	Straight Bias	2584
Pennsylvania	-0.005	0.019	0.794	10.000	Straight Bias	2584
New York	-0.012	0.013	0.356	10.000	Straight Bias	2584
Florida	-0.031	0.015	0.040	10.000	Straight Bias	2584
Illinois	-0.005	0.019	0.802	10.000	Straight Bias	2584
Liberal	-0.103	0.006	0.000	15.000	Straight Bias	3562
Age	0.060	0.023	0.007	15.000	Straight Bias	3562
White	-0.011	0.007	0.097	15.000	Straight Bias	3562
Woman	-0.034	0.007	0.000	15.000	Straight Bias	3562
College	-0.004	0.007	0.560	15.000	Straight Bias	3562
Religious	0.075	0.007	0.000	15.000	Straight Bias	3562
Nonmetro	0.017	0.011	0.132	15.000	Straight Bias	3562
California	0.000	0.009	0.981	15.000	Straight Bias	3562
Pennsylvania	-0.006	0.015	0.693	15.000	Straight Bias	3562
New York	-0.014	0.012	0.223	15.000	Straight Bias	3562
Florida	-0.010	0.013	0.430	15.000	Straight Bias	3562
Illinois	-0.010	0.017	0.559	15.000	Straight Bias	3562
Liberal	-0.108	0.006	0.000	20.000	Straight Bias	4799
Age	0.052	0.020	0.008	20.000	Straight Bias	4799
White	-0.011	0.006	0.056	20.000	Straight Bias	4799
Woman	-0.035	0.006	0.000	20.000	Straight Bias	4799
College	0.001	0.006	0.804	20.000	Straight Bias	4799
Religious	0.074	0.006	0.000	20.000	Straight Bias	4799
Nonmetro	0.009	0.010	0.352	20.000	Straight Bias	4799
California	-0.001	0.008	0.949	20.000	Straight Bias	4799
Pennsylvania	-0.012	0.013	0.368	20.000	Straight Bias	4799
New York	-0.022	0.011	0.042	20.000	Straight Bias	4799
Florida	0.004	0.011	0.701	20.000	Straight Bias	4799
Illinois	-0.014	0.015	0.324	20.000	Straight Bias	4799
Liberal	-0.111	0.005	0.000	25.000	Straight Bias	5794
Age	0.048	0.018	0.007	25.000	Straight Bias	5794
White	-0.014	0.005	0.007	25.000	Straight Bias	5794
Woman	-0.031	0.005	0.000	25.000	Straight Bias	5794
College	0.002	0.005	0.666	25.000	Straight Bias	5794
Religious	0.076	0.006	0.000	25.000	Straight Bias	5794
Nonmetro	0.008	0.009	0.370	25.000	Straight Bias	5794
California	-0.003	0.007	0.641	25.000	Straight Bias	5794
Pennsylvania	-0.002	0.013	0.878	25.000	Straight Bias	5794
New York	-0.024	0.010	0.019	25.000	Straight Bias	5794
Florida	0.002	0.010	0.828	25.000	Straight Bias	5794
Illinois	-0.003	0.013	0.831	25.000	Straight Bias	5794
Liberal	-0.111	0.004	0.000	30.000	Straight Bias	7511
Age	0.052	0.015	0.001	30.000	Straight Bias	7511
White	-0.016	0.005	0.001	30.000	Straight Bias	7511
Woman	-0.037	0.005	0.000	30.000	Straight Bias	7511
College	0.003	0.005	0.477	30.000	Straight Bias	7511
Religious	0.072	0.005	0.000	30.000	Straight Bias	7511

Table C18: Influence of Control Covariates on Straight Bias (Part 2)

Control	Control Coef.	SE	p	Bandwidth	Outcome	N
Religious	0.072	0.005	0.000	30.000	Straight Bias	7511
Nonmetro	0.004	0.008	0.605	30.000	Straight Bias	7511
California	-0.004	0.006	0.532	30.000	Straight Bias	7511
Pennsylvania	-0.005	0.011	0.658	30.000	Straight Bias	7511
New York	-0.026	0.009	0.004	30.000	Straight Bias	7511
Florida	0.002	0.009	0.803	30.000	Straight Bias	7511
Illinois	-0.003	0.012	0.812	30.000	Straight Bias	7511
Liberal	-0.109	0.004	0.000	35.000	Straight Bias	9111
Age	0.051	0.014	0.000	35.000	Straight Bias	9111
White	-0.016	0.004	0.000	35.000	Straight Bias	9111
Woman	-0.037	0.004	0.000	35.000	Straight Bias	9111
College	0.002	0.004	0.643	35.000	Straight Bias	9111
Religious	0.073	0.004	0.000	35.000	Straight Bias	9111
Nonmetro	0.008	0.007	0.238	35.000	Straight Bias	9111
California	-0.003	0.006	0.613	35.000	Straight Bias	9111
Pennsylvania	-0.005	0.010	0.642	35.000	Straight Bias	9111
New York	-0.029	0.008	0.001	35.000	Straight Bias	9111
Florida	0.002	0.009	0.805	35.000	Straight Bias	9111
Illinois	-0.004	0.011	0.699	35.000	Straight Bias	9111
Liberal	-0.109	0.004	0.000	40.000	Straight Bias	10519
Age	0.057	0.013	0.000	40.000	Straight Bias	10519
White	-0.017	0.004	0.000	40.000	Straight Bias	10519
Woman	-0.037	0.004	0.000	40.000	Straight Bias	10519
College	0.002	0.004	0.681	40.000	Straight Bias	10519
Religious	0.074	0.004	0.000	40.000	Straight Bias	10519
Nonmetro	0.014	0.006	0.031	40.000	Straight Bias	10519
California	-0.003	0.005	0.631	40.000	Straight Bias	10519
Pennsylvania	-0.003	0.009	0.704	40.000	Straight Bias	10519
New York	-0.028	0.008	0.000	40.000	Straight Bias	10519
Florida	0.002	0.008	0.817	40.000	Straight Bias	10519
Illinois	-0.002	0.010	0.875	40.000	Straight Bias	10519
Liberal	-0.111	0.004	0.000	45.000	Straight Bias	11827
Age	0.057	0.012	0.000	45.000	Straight Bias	11827
White	-0.017	0.004	0.000	45.000	Straight Bias	11827
Woman	-0.038	0.004	0.000	45.000	Straight Bias	11827
College	0.004	0.004	0.332	45.000	Straight Bias	11827
Religious	0.074	0.004	0.000	45.000	Straight Bias	11827
Nonmetro	0.012	0.006	0.041	45.000	Straight Bias	11827
California	-0.007	0.005	0.191	45.000	Straight Bias	11827
Pennsylvania	-0.005	0.009	0.594	45.000	Straight Bias	11827
New York	-0.032	0.007	0.000	45.000	Straight Bias	11827
Florida	0.005	0.008	0.549	45.000	Straight Bias	11827
Illinois	-0.009	0.009	0.315	45.000	Straight Bias	11827
Liberal	-0.115	0.003	0.000	50.000	Straight Bias	13780
Age	0.064	0.011	0.000	50.000	Straight Bias	13780
White	-0.018	0.003	0.000	50.000	Straight Bias	13780
Woman	-0.039	0.003	0.000	50.000	Straight Bias	13780
College	0.001	0.003	0.838	50.000	Straight Bias	13780
Religious	0.070	0.004	0.000	50.000	Straight Bias	13780
Nonmetro	0.010	0.006	0.081	50.000	Straight Bias	13780
California	-0.007	0.005	0.129	50.000	Straight Bias	13780
Pennsylvania	-0.002	0.008	0.837	50.000	Straight Bias	13780
New York	-0.031	0.007	0.000	50.000	Straight Bias	13780
Florida	0.003	0.008	0.747	50.000	Straight Bias	13780
Illinois	-0.004	0.009	0.620	50.000	Straight Bias	13780
Liberal	-0.113	0.002	0.000	200.000	Straight Bias	42738
Age	0.056	0.007	0.000	200.000	Straight Bias	42738
White	-0.013	0.002	0.000	200.000	Straight Bias	42738
Woman	-0.045	0.002	0.000	200.000	Straight Bias	42738
College	-0.001	0.002	0.563	200.000	Straight Bias	42738
Religious	0.076	0.002	0.000	200.000	Straight Bias	42738
Nonmetro	0.010	0.003	0.001	200.000	Straight Bias	42738
California	-0.013	0.003	0.000	200.000	Straight Bias	42738
Pennsylvania	-0.002	0.004	0.589	200.000	Straight Bias	42738
New York	-0.023	0.004	0.000	200.000	Straight Bias	42738
Florida	-0.005	0.005	0.332	200.000	Straight Bias	42738
Illinois	-0.005	0.004	0.271	200.000	Straight Bias	42738

Table C19: Influence of Control Covariates on D-Score (Part 1)

Control	Control Coef.	SE	p	Bandwidth	Outcome	N
Liberal	-0.071	0.008	0.000	5.000	D-Score	1487
Age	0.020	0.026	0.441	5.000	D-Score	1487
White	-0.019	0.008	0.013	5.000	D-Score	1487
Woman	-0.021	0.008	0.009	5.000	D-Score	1487
College	-0.017	0.008	0.033	5.000	D-Score	1487
Religious	0.033	0.008	0.000	5.000	D-Score	1487
Nonmetro	0.015	0.013	0.274	5.000	D-Score	1487
California	-0.025	0.012	0.040	5.000	D-Score	1487
Pennsylvania	0.017	0.019	0.388	5.000	D-Score	1487
New York	-0.006	0.014	0.683	5.000	D-Score	1487
Florida	-0.005	0.014	0.728	5.000	D-Score	1487
Illinois	0.014	0.020	0.501	5.000	D-Score	1487
Liberal	-0.071	0.006	0.000	10.000	D-Score	2639
Age	0.056	0.020	0.005	10.000	D-Score	2639
White	-0.020	0.006	0.001	10.000	D-Score	2639
Woman	-0.021	0.006	0.000	10.000	D-Score	2639
College	-0.013	0.006	0.026	10.000	D-Score	2639
Religious	0.035	0.006	0.000	10.000	D-Score	2639
Nonmetro	0.012	0.010	0.234	10.000	D-Score	2639
California	-0.016	0.009	0.073	10.000	D-Score	2639
Pennsylvania	0.013	0.015	0.372	10.000	D-Score	2639
New York	-0.012	0.011	0.285	10.000	D-Score	2639
Florida	0.018	0.011	0.103	10.000	D-Score	2639
Illinois	0.013	0.015	0.385	10.000	D-Score	2639
Liberal	-0.071	0.005	0.000	15.000	D-Score	3638
Age	0.065	0.017	0.000	15.000	D-Score	3638
White	-0.020	0.005	0.000	15.000	D-Score	3638
Woman	-0.019	0.005	0.000	15.000	D-Score	3638
College	-0.015	0.005	0.003	15.000	D-Score	3638
Religious	0.036	0.005	0.000	15.000	D-Score	3638
Nonmetro	0.009	0.008	0.286	15.000	D-Score	3638
California	-0.015	0.007	0.041	15.000	D-Score	3638
Pennsylvania	0.015	0.012	0.198	15.000	D-Score	3638
New York	-0.010	0.010	0.324	15.000	D-Score	3638
Florida	0.016	0.009	0.089	15.000	D-Score	3638
Illinois	0.001	0.014	0.955	15.000	D-Score	3638
Liberal	-0.071	0.004	0.000	20.000	D-Score	4907
Age	0.062	0.014	0.000	20.000	D-Score	4907
White	-0.015	0.004	0.000	20.000	D-Score	4907
Woman	-0.018	0.004	0.000	20.000	D-Score	4907
College	-0.014	0.004	0.001	20.000	D-Score	4907
Religious	0.038	0.004	0.000	20.000	D-Score	4907
Nonmetro	0.004	0.007	0.585	20.000	D-Score	4907
California	-0.006	0.006	0.351	20.000	D-Score	4907
Pennsylvania	0.017	0.011	0.109	20.000	D-Score	4907
New York	-0.011	0.009	0.186	20.000	D-Score	4907
Florida	0.014	0.008	0.077	20.000	D-Score	4907
Illinois	-0.005	0.011	0.634	20.000	D-Score	4907
Liberal	-0.072	0.004	0.000	25.000	D-Score	5925
Age	0.066	0.013	0.000	25.000	D-Score	5925
White	-0.017	0.004	0.000	25.000	D-Score	5925
Woman	-0.019	0.004	0.000	25.000	D-Score	5925
College	-0.011	0.004	0.004	25.000	D-Score	5925
Religious	0.038	0.004	0.000	25.000	D-Score	5925
Nonmetro	0.010	0.007	0.120	25.000	D-Score	5925
California	-0.004	0.005	0.517	25.000	D-Score	5925
Pennsylvania	0.016	0.010	0.111	25.000	D-Score	5925
New York	-0.009	0.008	0.277	25.000	D-Score	5925
Florida	0.012	0.007	0.119	25.000	D-Score	5925
Illinois	0.002	0.009	0.849	25.000	D-Score	5925
Liberal	-0.073	0.003	0.000	30.000	D-Score	7689
Age	0.068	0.011	0.000	30.000	D-Score	7689
White	-0.016	0.003	0.000	30.000	D-Score	7689
Woman	-0.021	0.003	0.000	30.000	D-Score	7689
College	-0.011	0.003	0.001	30.000	D-Score	7689
Religious	0.037	0.003	0.000	30.000	D-Score	7689

Table C20: Influence of Control Covariates on D-Score (Part 2)

Control	Control Coef.	SE	p	Bandwidth	Outcome	N
Religious	0.072	0.005	0.000	30.000	D-Score	7511
Nonmetro	0.004	0.008	0.605	30.000	D-Score	7511
California	-0.004	0.006	0.532	30.000	D-Score	7511
Pennsylvania	-0.005	0.011	0.658	30.000	D-Score	7511
New York	-0.026	0.009	0.004	30.000	D-Score	7511
Florida	0.002	0.009	0.803	30.000	D-Score	7511
Illinois	-0.003	0.012	0.812	30.000	D-Score	7511
Liberal	-0.109	0.004	0.000	35.000	D-Score	9111
Age	0.051	0.014	0.000	35.000	D-Score	9111
White	-0.016	0.004	0.000	35.000	D-Score	9111
Woman	-0.037	0.004	0.000	35.000	D-Score	9111
College	0.002	0.004	0.643	35.000	D-Score	9111
Religious	0.073	0.004	0.000	35.000	D-Score	9111
Nonmetro	0.008	0.007	0.238	35.000	D-Score	9111
California	-0.003	0.006	0.613	35.000	D-Score	9111
Pennsylvania	-0.005	0.010	0.642	35.000	D-Score	9111
New York	-0.029	0.008	0.001	35.000	D-Score	9111
Florida	0.002	0.009	0.805	35.000	D-Score	9111
Illinois	-0.004	0.011	0.699	35.000	D-Score	9111
Liberal	-0.109	0.004	0.000	40.000	D-Score	10519
Age	0.057	0.013	0.000	40.000	D-Score	10519
White	-0.017	0.004	0.000	40.000	D-Score	10519
Woman	-0.037	0.004	0.000	40.000	D-Score	10519
College	0.002	0.004	0.681	40.000	D-Score	10519
Religious	0.074	0.004	0.000	40.000	D-Score	10519
Nonmetro	0.014	0.006	0.031	40.000	D-Score	10519
California	-0.003	0.005	0.631	40.000	D-Score	10519
Pennsylvania	-0.003	0.009	0.704	40.000	D-Score	10519
New York	-0.028	0.008	0.000	40.000	D-Score	10519
Florida	0.002	0.008	0.817	40.000	D-Score	10519
Illinois	-0.002	0.010	0.875	40.000	D-Score	10519
Liberal	-0.111	0.004	0.000	45.000	D-Score	11827
Age	0.057	0.012	0.000	45.000	D-Score	11827
White	-0.017	0.004	0.000	45.000	D-Score	11827
Woman	-0.038	0.004	0.000	45.000	D-Score	11827
College	0.004	0.004	0.332	45.000	D-Score	11827
Religious	0.074	0.004	0.000	45.000	D-Score	11827
Nonmetro	0.012	0.006	0.041	45.000	D-Score	11827
California	-0.007	0.005	0.191	45.000	D-Score	11827
Pennsylvania	-0.005	0.009	0.594	45.000	D-Score	11827
New York	-0.032	0.007	0.000	45.000	D-Score	11827
Florida	0.005	0.008	0.549	45.000	D-Score	11827
Illinois	-0.009	0.009	0.315	45.000	D-Score	11827
Liberal	-0.115	0.003	0.000	50.000	D-Score	13780
Age	0.064	0.011	0.000	50.000	D-Score	13780
White	-0.018	0.003	0.000	50.000	D-Score	13780
Woman	-0.039	0.003	0.000	50.000	D-Score	13780
College	0.001	0.003	0.838	50.000	D-Score	13780
Religious	0.070	0.004	0.000	50.000	D-Score	13780
Nonmetro	0.010	0.006	0.081	50.000	D-Score	13780
California	-0.007	0.005	0.129	50.000	D-Score	13780
Pennsylvania	-0.002	0.008	0.837	50.000	D-Score	13780
New York	-0.031	0.007	0.000	50.000	D-Score	13780
Florida	0.003	0.008	0.747	50.000	D-Score	13780
Illinois	-0.004	0.009	0.620	50.000	D-Score	13780
Liberal	-0.113	0.002	0.000	200.000	D-Score	42738
Age	0.056	0.007	0.000	200.000	D-Score	42738
White	-0.013	0.002	0.000	200.000	D-Score	42738
Woman	-0.045	0.002	0.000	200.000	D-Score	42738
College	-0.001	0.002	0.563	200.000	D-Score	42738
Religious	0.076	0.002	0.000	200.000	D-Score	42738
Nonmetro	0.010	0.003	0.001	200.000	D-Score	42738
California	-0.013	0.003	0.000	200.000	D-Score	42738
Pennsylvania	-0.002	0.004	0.589	200.000	D-Score	42738
New York	-0.023	0.004	0.000	200.000	D-Score	42738
Florida	-0.005	0.005	0.332	200.000	D-Score	42738
Illinois	-0.005	0.004	0.271	200.000	D-Score	42738

C.4 Temporal Placebo Tests

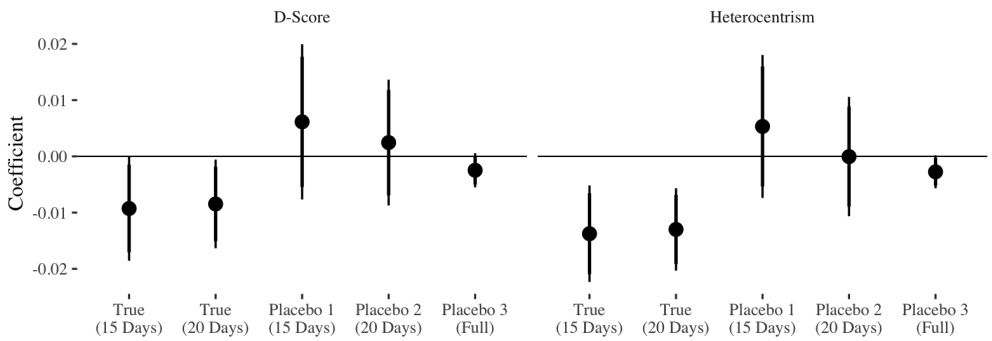

Figure C21: Comparing True *post-Pulse* Coefficient to Placebo Coefficients To Rule Out Pre-Treatment Temporal Trends That Motivate Pro-Gay Attitudes. The x-axis is the type of estimate. True (15 days) is the true *post-Pulse* coefficient using a 15-day bandwidth. True (20 days) is the same with a 20-day bandwidth. Placebo 1 estimates the influence of taking the IAT in the 15 days prior to the Pulse massacre relative to the 16-30 days prior to the Pulse massacre. Placebo 2 estimates the influence of taking the IAT in the 20 days prior to the Pulse massacre relative to the 21-40 days prior to the Pulse massacre. Placebo 3 estimates the influence of taking the IAT after the median pre-treatment day (2016-03-07 to 2016-06-12) relative to the days before the median pre-treatment day (2016-01-01 to 2016-03-06). The y-axis is the coefficient. The left/right panel characterizes the influence of the true and placebo coefficients on the *D-score* and *heterocentrism*. 95% CIs displayed from HC2 robust SEs.

C.5 Prior and Post Year Temporal Placebo

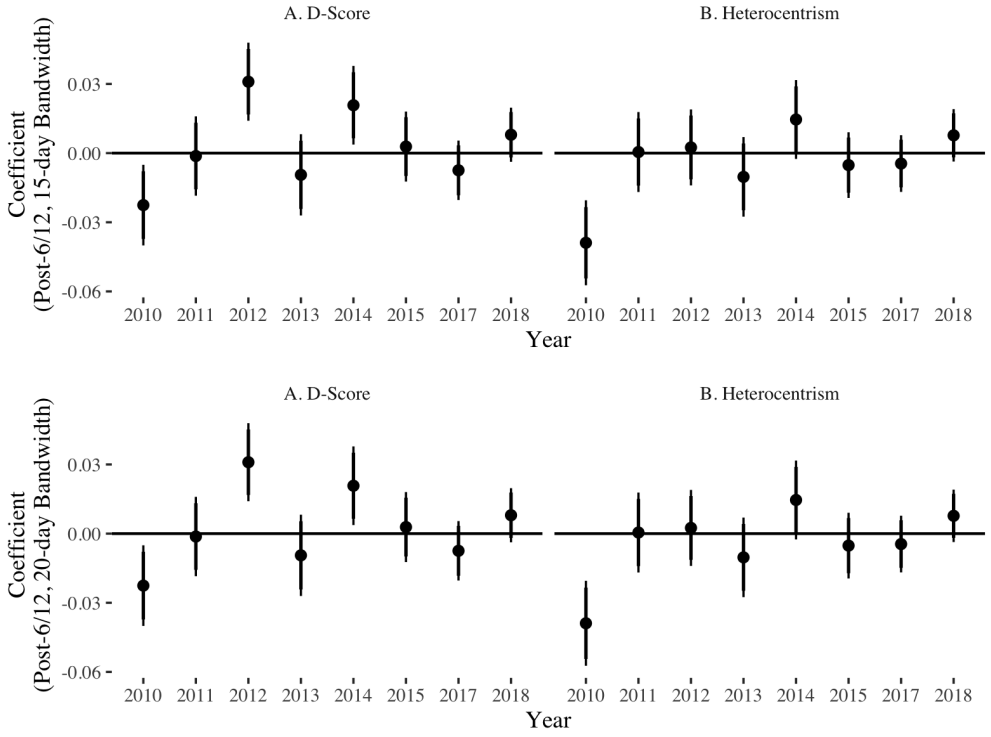

Figure C22: Temporal Placebo Tests Using IAT Data From Non-2016 Years. The x-axis is the IAT dataset at use (by year). The y-axis is the coefficient characterizing the influence of taking the IAT after June 12 (the calendar day of the Pulse nightclub shooting occurred). Panels A and B refer to estimates assessing the influence of the post-June 12th placebo on the *D-Score* and *Heterocentrism* outcomes. The top/bottom two panels are estimates using a 15/20 day bandwidth. 95% CIs displayed derived from HC2 robust standard errors.

C.6 Falsification Tests on Treatment-Irrelevant Group Attitudes

Table C21: Falsification Test on Treatment-Irrelevant Group Attitudes

Post-Pulse Coef.	SE	p	N	Outcome	Dataset	Bandwidth
-0.000	0.005	0.949	11310.000	D-Score	Black/White IAT	15 days
-0.003	0.003	0.377	10960.000	White Bias	Black/White IAT	15 days
-0.006	0.003	0.043	11039.000	Ethnocentrism	Black/White IAT	15 days
0.012	0.015	0.434	1279.000	D-Score	Asian/European IAT	15 days
0.011	0.011	0.320	1234.000	White Bias	Asian/European IAT	15 days
0.006	0.014	0.670	1509.000	D-Score	Disabled/Abled IAT	15 days
-0.002	0.008	0.765	1484.000	Abled Bias	Disabled/Abled IAT	15 days
-0.009	0.009	0.319	1500.000	Abledcentrism	Disabled/Abled IAT	15 days
-0.013	0.013	0.327	1331.000	D-Score	Arab/Non-Arab IAT	15 days
-0.003	0.009	0.766	1267.000	Non-Arab Bias	Arab/Non-Arab IAT	15 days
-0.002	0.010	0.808	1310.000	Ethnocentrism	Arab/Non-Arab IAT	15 days
-0.014	0.009	0.145	3064.000	D-Score	Dark Skin/Light Skin IAT	15 days
-0.001	0.007	0.898	4550.000	D-Score	Man/Woman (Career) IAT	15 days
0.004	0.010	0.702	2339.000	D-Score	Man/Woman (Science) IAT	15 days
-0.003	0.004	0.429	15506.000	D-Score	Black/White IAT	20 days
-0.006	0.003	0.013	15037.000	White Bias	Black/White IAT	20 days
-0.008	0.003	0.004	15151.000	Ethnocentrism	Black/White IAT	20 days
0.008	0.013	0.518	1735.000	D-Score	Asian/European IAT	20 days
0.011	0.009	0.218	1670.000	White Bias	Asian/European IAT	20 days
0.010	0.012	0.399	1972.000	D-Score	Disabled/Abled IAT	20 days
0.005	0.007	0.481	1938.000	Abled Bias	Disabled/Abled IAT	20 days
-0.003	0.008	0.736	1959.000	Abledcentrism	Disabled/Abled IAT	20 days
0.005	0.012	0.638	1745.000	D-Score	Arab/Non-Arab IAT	20 days
0.005	0.008	0.532	1663.000	Non-Arab Bias	Arab/Non-Arab IAT	20 days
0.005	0.009	0.543	1717.000	Ethnocentrism	Arab/Non-Arab IAT	20 days
-0.009	0.008	0.249	4213.000	D-Score	Dark Skin/Light Skin IAT	20 days
-0.003	0.006	0.604	6624.000	D-Score	Man/Woman (Career) IAT	20 days
0.007	0.008	0.416	3371.000	D-Score	Man/Woman (Science) IAT	20 days

This table characterizes falsification tests assessing the influence of taking an IAT *post-Pulse* on groups that are potentially unrelated to LGBTQ+. Not all datasets include the respective *D-score*, *bias*, and dominant group-centrism outcomes (hence their missingness in some IAT datasets). HC2 robust SEs displayed.

C.7 Evaluating Mechanisms

Table C22: Mechanism Tests Using IAT Data

	D-Score		Heterocentrism		D-Score		Heterocentrism		D-Score		Heterocentrism	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Post-Pulse x Non-White	0.01	0.01	0.02	0.00								
	(0.01)	(0.01)	(0.01)	(0.01)								
Post-Pulse x Woman					0.01	0.00	0.01	0.01				
					(0.01)	(0.01)	(0.01)	(0.01)				
Post-Pulse x Liberal									0.00	−0.01	−0.00	−0.01
									(0.01)	(0.01)	(0.01)	(0.01)
R^2	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.09	0.09	0.14	0.13
N	3638	4907	3645	4920	3638	4907	3645	4920	3638	4907	3645	4920
Bandwidth (in Days)	15	20	15	20	15	20	15	20	15	20	15	20

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$. All covariates re-scaled between 0-1. Models do not include control covariates with the exception of the mechanism covariate that *post-Pulse* is being interacted with. HC2 robust standard errors in parentheses.

D Study 3: Matthew Shepard

D.1 Media Data Details

We collect data on the number of gay-related newspaper articles in the New York Times and Washington Post. Data on the number of gay-related NYT newspaper articles per month are from the NYT article API. We use the `rtimes` package to query data from the NYT article API. Gay-related NYT newspaper articles include the terms "homosexual" or "gay" in their text (Figure 6, Panel A). Shepard-related articles are gay-related NYT newspaper articles with the terms "wyoming," "shepard," "student," "laramie," "beat," "beaten," "bias," and "hate (Figure 6, Panel C)."

Data on the number of gay-related Washington Post articles per month are acquired from the ProQuest Washington Post historical newspaper database (Figure 6, Panel B). Gay-related articles are those that include the terms "homosexual," "gay," or "homosexuality" in their text.

D.2 Homosexuality = Morally Wrong Outcome

D.2.1 Study Details

The two studies we use to assess if the belief homosexuality is immoral decreased after Shepard's murder are the CNN/USA Today Jun 22-23 1998 poll and CNN/TIME Oct 14-15, 1998 poll. Both are nationally representative adult telephone surveys ($N = 1016$, $N = 1036$) and are population weighted to census demographic benchmarks.

The outcome item of interest from the CNN/USA Today Jun 1998 poll is "do you personally believe homosexual behavior is morally wrong or is not morally wrong" with response choices of 1) Yes, morally wrong and 2) No, not morally wrong. The outcome is binary, equal to 1 if the respondent indicates "Yes, morally wrong." The outcome item of interest from

the CNN/TIME Oct 1998 poll is "do you personally think that homosexual relationships between consenting adults is morally wrong, or not a moral issue?" with response choices of 1) Yes, morally wrong and 2) Not a moral issue. The outcome is binary, equal to 1 if the respondent indicates "Yes, morally wrong." The weights, outcome, and baseline covariates are then stacked amongst each other across the two polls, with respondents from the CNN Oct. 1998 poll being defined as *post-Shepard* respondents (measured as a binary indicator equal to 1 if the respondent is from the October 1998 poll, 0 otherwise) and respondents from the CNN Jun. 1998 poll being defined as pre-Shepard respondents.

Although a benefit of these outcome items across the two surveys is they ask about the immorality of homosexuality very closely to the moment Matthew Shepard was murdered, they are worded slightly different from one another in that the post-Shepard survey references "homosexual relationships between consenting adults" while the pre-Shepard survey references "homosexual behavior." Therefore, it is plausible the decrease in support for the belief homosexuality is morally wrong may be a function of the specification that the homosexual behavior referenced in the post-Shepard survey relates specifically to behavior among *consenting adults.* Consequently, we re-estimate our findings with a different pre-Shepard survey from 1994 with a similar item wording. Consistent with the main findings, we find that respondents interviewed after Shepard's murder were less likely to believe homosexual relationships between consenting adults is morally wrong (see Figure 8). A shortcoming of the re-estimation is that our findings may be the result of secular time trends or intervening factors outside Shepard's murder. These alternative explanations are unlikely. First, the temporal placebo test comparing attitudes regarding "homosexual behavior" between April 1997-June 1998 on Figure 7, Panel B is statistically null. These findings suggest attitudes regarding the immorality of homosexuality were not trending in a liberal direction between 1994 to 1998 prior to Shepard's murder. Second, belief in the notion that "homosexual relationships between consenting adults" are "morally wrong" is *remarkably stable* between 1978-2004, with the exception of respondents interviewed in the few days after Matthew Shepard was murdered (Figure 8). These empirical findings suggest that item wording does not drive our main results and that Shepard's murder shifted anti-gay attitudes and not other temporal intervening factors.

D.2.2 Temporal Placebo Details

To conduct a temporal placebo test ruling out secular trends that may drive our finding that respondents interviewed after Shepard's murder were less likely to to believe homosexuality is morally wrong, we use a third survey, the Gallup Apr 11-13 1997 poll. The Gallup Apr 1997 poll is a nationally representative telephone survey ($N = 1003$) and is population weighted to census demographic benchmarks. The Gallup Apr 1997 poll includes an item asking respondents if they "personally believe homosexual behavior is morally wrong or is not morally wrong" with responses 1) Yes, morally wrong and 2) No, not morally wrong. We then compare the average level of support for belief homosexual behavior is morally wrong between the Gallup Apr. 1997 poll and CNN Jun. 1998 poll.

D.3 Regression Tables

D.3.1 Balance Test (Moral Wrong)

Table D23: Post-Shepard Balance Test (Moral Wrong, CNN Jun '98/Oct '98)

Outcome	Post-Shepard Coef.	SE	p	N
White	-0.08	0.02	0.00	2052
Woman	-0.01	0.02	0.79	2052
College	0.02	0.02	0.26	2052
Age (18-24)	0.01	0.02	0.48	2052
Age (25-29)	0.01	0.02	0.63	2052
Age (30-34)	-0.02	0.01	0.14	2052
Age (35-39)	-0.02	0.01	0.30	2052
Age (40-49)	0.00	0.02	0.98	2052
Age (50-64)	0.01	0.02	0.73	2052
Age (65+)	-0.02	0.02	0.27	2052
Income (20-50k)	-0.02	0.02	0.52	2052
Income (50-75k)	0.00	0.02	0.84	2052
Income (75k+)	-0.05	0.01	0.00	2052
Democrat	0.02	0.02	0.44	2052
Registered	-0.02	0.02	0.45	2052
Texas	0.00	0.01	0.98	2052
California	-0.01	0.02	0.37	2052
New York	0.01	0.01	0.60	2052
Florida	0.01	0.01	0.49	2052
Pennsylvania	0.01	0.01	0.51	2052

D.3.2 Temporal Placebo Test (Moral Wrong)

Table D24: Temporal Placebo Tests

	Moral Wrong (1)
Post-Placebo	−0.00
	(0.02)
R^2	0.00
N	2019
Surveys	Gallup Apr '97/CNN Jun '98

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$. HC2 robust standard errors in parentheses.

D.3.3 Influence of Shepard's Murder on Attitudes Concerning Homosexuality

Table D25: Respondents Interviewed Post-Shepard Are Less Likely To Believe Homosexuality is Morally Wrong

	Moral Wrong	
	(1)	(2)
Post-Shepard	-0.11^{***}	-0.12^{***}
	(0.02)	(0.02)
White		-0.10^{*}
		(0.04)
Woman		-0.08^{*}
		(0.03)
College		-0.17^{***}
		(0.04)
Age (18-24)		-0.24^{***}
		(0.07)
Age (25-29)		-0.20^{**}
		(0.07)
Age (30-34)		$-0.13^{\dagger}$
		(0.07)
Age (35-39)		-0.04
		(0.06)
Age (40-49)		-0.18^{**}
		(0.06)
Age (50-64)		-0.04
		(0.06)
Income (20-50k)		0.01
		(0.04)
Income (50-75k)		-0.01
		(0.06)
Democrat		$0.06^{\dagger}$
		(0.03)
Registered		-0.02
		(0.05)
R^2	0.00	0.07
N	2052	2052
State FE	N	Y
Surveys	CNN Jun/Oct '98	CNN Jun/Oct '98

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$. HC2 robust standard errors in parentheses.

D.3.4 Falsification Tests

Table D26: Falsification Tests

Outcome	SE	p	Post-Shepard Coef.	N	Survey(s)
Ban Abortion	0.00	0.02	0.88	1757	CNN Jan '98/CNN Oct '98
Affirmative Action 1	-0.04	0.03	0.14	1970	CBS Dec '97/CBS Jul '00
Affirmative Action 2	0.02	0.02	0.31	2741	ANES '96-'98
Death Penalty	0.02	0.02	0.49	2557	Kaiser Jul '98/Gallup Feb '99
Black People Unintelligent	0.01	0.00	0.05	4202	GSS '98-'00
Black People Lazy	0.00	0.01	0.56	4202	GSS '98-'00
Spending 2 Aid Black People	0.00	0.02	0.96	2790	GSS '98-'00
Black/White Inequality = Discrim.	0.01	0.02	0.42	3748	GSS '98-'00
Black/White Inequality = In-Born Ability	0.03	0.01	0.02	3748	GSS '98-'00
Black/White Inequality = No Education	0.02	0.02	0.35	3748	GSS '98-'00
Black/White Inequality = No Motivation	0.03	0.02	0.11	3748	GSS '98-'00
Oppose Living w/Black People	-0.01	0.01	0.31	4202	GSS '98-'00
Black Feeling Therm.	0.04	0.01	0.00	2692	ANES '96-'98
Abortion Any Time	-0.01	0.02	0.56	3546	GSS '98-'00
Support Female Politicians	0.01	0.02	0.67	3477	GSS '98-'00
Working Women Good	-0.06	0.02	0.00	3686	GSS '98-'00
Working Women Bad 1	0.04	0.02	0.01	3615	GSS '98-'00
Working Women Bad 2	0.04	0.02	0.07	2248	GSS '98-'00

Note: HC2 robust standard errors presented.

D.3.5 Event Study (Moral Wrong)

Table D27: Event Study Characterizing Trends in Belief Homosexuality is Morally Wrong

	Moral Wrong	
	(1)	(2)
1978	0.00	0.02
	(0.03)	(0.02)
1992	0.01	−0.02
	(0.02)	(0.02)
1994	−−	−−
	(−−)	(−−)
1998 (Shepard Murder)	−0.05*	−0.06*
	(0.03)	(0.03)
2001	0.02	0.01
	(0.03)	(0.03)
2004	−0.02	−0.03
	(0.03)	(0.03)
Age (25-34)		−0.02
		(0.02)
Age (35-49)		0.05**
		(0.02)
Age (51+)		0.12***
		(0.02)
Woman		−0.06***
		(0.01)
White		−0.02
		(0.02)
College		−0.14***
		(0.02)
Democrat		−0.07***
		(0.01)
R^2	0.00	0.03
N	6130	6129

Note: $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\dagger}p < 0.1$. Sample is a stacked dataset of surveys with similar items on the covariates displayed on this table. Surveys included in this sample are the TIME 1978, CNN 1992, CNN 1994, CNN 1998, CNN 2001, and CNN 2004 polls. The reference category for the "year" analysis is based on the level of *moral wrong* in the CNN 1994 poll. HC2 robust standard errors in parentheses.

D.4 Alternative Outcome: Legal Recognition

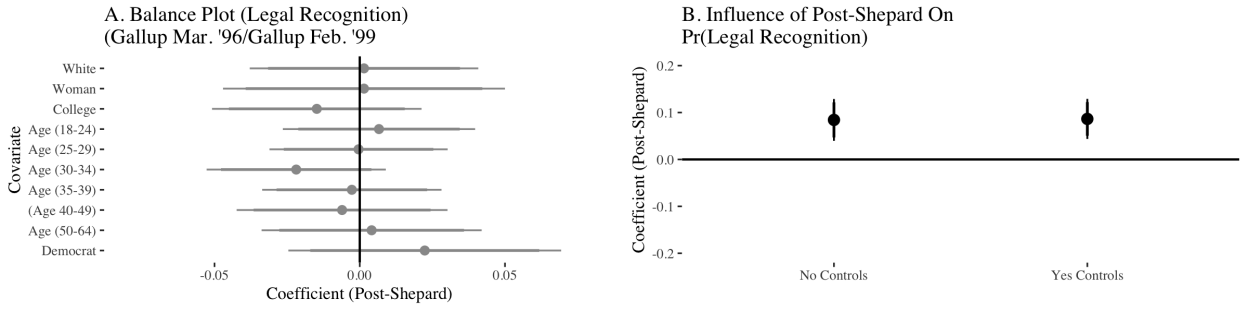

Figure D23: Influence of Shepard's Murder on Support for Legal Recognition of Same-Sex Marriages. All estimates include population weights. All covariates are scaled between 0-1. 95% CIs displayed derived from HC2 robust standard errors.

Data are from two polls stacked together. The first poll is the Gallup March 1996 Politics Polls ($N = 1008$). It was fielded from March 15-17, 1996 and is a telephone survey. The second poll is the Gallup February 1999 Service Poll ($N = 1054$). It was fielded from February 8-9, 1999. The main outcome of interest for this analysis is *legal recognition.* Legal recognition is from a common item in these two polls that asks respondents if they "think marriages between homosexuals should or should not be recognized by the law as valid, with the same rights as traditional marriages." Respondents can choose to reply "should be valid" or "should not be recognized." The outcome is measured equal to 1 if the respondent replies with "should be valid," and 0 otherwise. Figure D23, Panel A displays covariate composition balance between the pre- (Gallup 1996) and *post-Shepard* (Gallup 1999) surveys. Panel B displays the influence of being interviewed in the *post-Shepard* survey on respondents reporting that they believe marriages between homosexual should be recognized by the law as valid. Respondents interviewed *post-Shepard* report a 8 percentage point increase in support for the belief homosexuals should have their marriages legally recognized.

D.5 Alternative Outcome: Hire Military

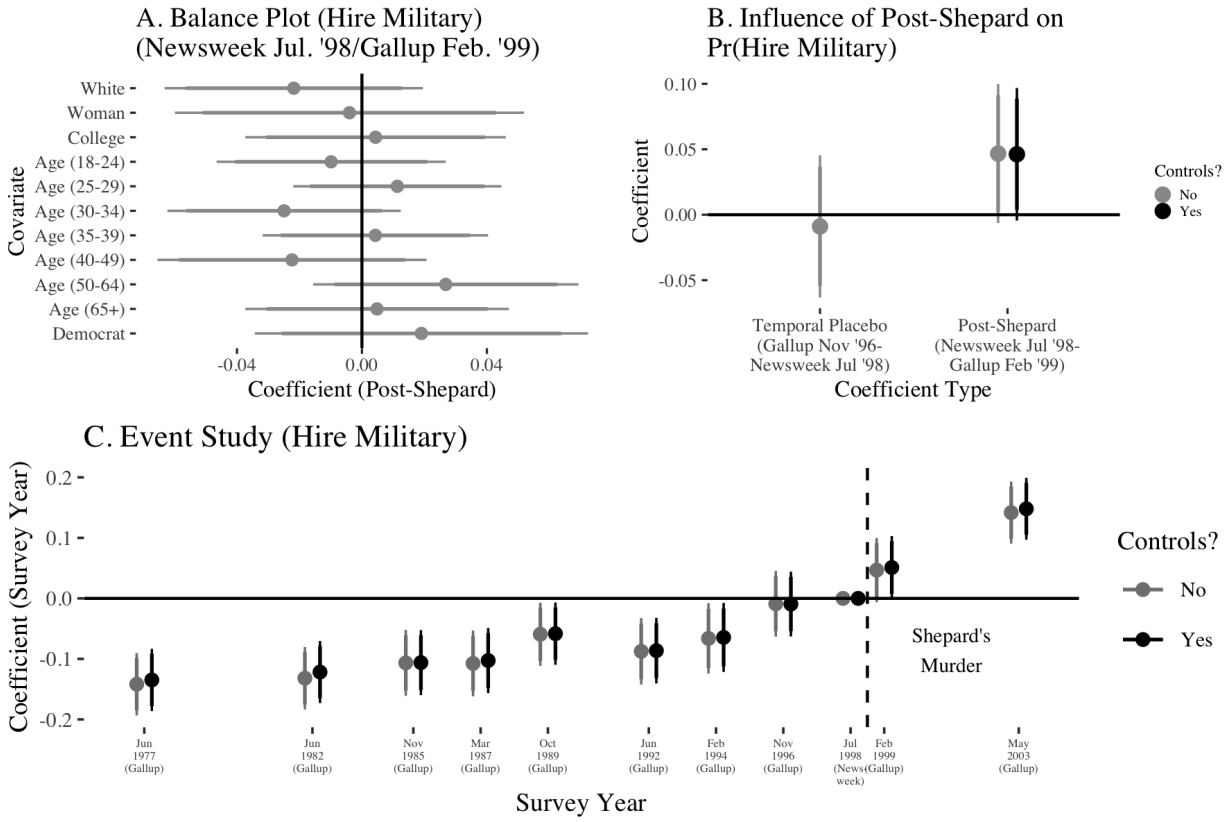

Figure D24: Influence of Shepard's Murder on Support for Hiring Gay People To Serve In The Military. Panel A displays covariate balance between the Newsweek Jul '98 and Gallup Feb '99 polls used to assess the influence of being interviewed *post-Shepard* on attitudes toward hiring gay people to serve in the military. Panel B displays a temporal placebo test assessing if mass attitudes on hiring gay people in the military shift between Nov '96 and Jul '98 in addition to coefficients with and without covariate adjustment that assess the influence of being interviewed *post-Shepard* on support for hiring gay people in the military. Panel C displays an event study assessing trends in support for hiring gay people in the military relative to a survey in Jul 1998 (hence no CIs for that survey estimate). All estimates include population weights. All covariates are scaled between 0-1. 95% CIs displayed derived from HC2 robust standard errors.

The two studies we use to assess if the belief homosexuals should be hired for the military increases after Shepard's murder are a Newsweek Jul. 30-31 1998 poll and a Gallup Feb. 8-9 1999 poll. Both are nationally representative adult telephone surveys ($N = 602$, $N = 1054$) and are population weighted to census demographic benchmarks.

The outcome item of interest from the Newsweek poll is "Tell me if you think gays and lesbians should be hired as members of the armed forces" with response choices of 1) Should and 2) Should not. The outcome is binary, equal to 1 if the respondent indicates "Should." The outcome item of interest from the Gallup poll is "Do you think homosexuals should or

should not be hired for the armed forces" with response choices of 1) Should and 2) Should not. The weights, outcome, and baseline covariates are then stacked amongst each other across the two polls, with respondents from the Gallup Feb. 1999 poll being defined as *post-Shepard* respondents (measured as a binary indicator equal to 1 if the respondent is from the October 1998 poll, 0 otherwise) and respondents from the Newsweek Jul. 1998 poll being defined as pre-Shepard respondents.

To conduct a temporal placebo test ruling out secular trends that may drive our finding that respondents interviewed after Shepard's murder were more likely to support hiring homosexuals in the military, we use a third survey, the Gallup Nov 21-24 1996 poll. The Gallup Nov 1996 poll is a nationally representative telephone survey ($N = 1003$) and is population weighted to census demographic benchmarks. The Gallup Nov 1996 poll includes an item asking respondents if they think "homosexuals should or should be hired for the armed forces" with responses 1) Should and 2) Should not. We then compare the average level of support for whether homosexuals should be hired for the armed forces in the Gallup 1996 poll with the Newsweek 1998 poll.

Figure D24, Panel A, demonstrates that respondents interviewed before and after Shepard's murder are similar on demographic, socio-economic, and political covariates. Figure D24, Panel B demonstrates that respondents interviewed *post-Shepard* are more likely to support gay people serving in the armed forces by 5 percentage points ($p < 0.10$), equivalent to 9% of the outcome standard deviation. However, Figure D24, Panel C demonstrates that support for hiring gay people in the military is on an upward trend between 1977-1996, suggesting these results may be a function of a progressive secular trend in support of incorporating gay people in the military, perhaps the result of Bill Clinton's push for Don't Ask Don't Tell policies.

D.6 Temporal Persistence Data Details

TIME 1978 poll ($N = 1044$): Nationally representative telephone poll sponsored by TIME magazine. Fielded March 14-30, 1978. Item we use asks respondents if "do you personally think that homosexual relationships between consenting adults is morally wrong or not a moral issue. How about? 1) Morally wrong, 2) Not a moral issue" Outcome is coded 1 if respondent indicates "morally wrong."

CNN 1992 poll ($N = 1250$): Nationally representative telephone poll sponsored by TIME magazine and CNN. Fielded May 13-14, 1992. Item we use asks respondents if "do you personally think that homosexual relationships between consenting adults is morally wrong or not a moral issue. How about? 1) Morally wrong, 2) Not a moral issue" Outcome is coded 1 if respondent indicates "morally wrong."

CNN 1994 poll ($N = 800$): Nationally representative telephone poll sponsored by TIME magazine and CNN. Fielded June 15-16, 1994. Item we use asks respondents if "do you personally think that homosexual relationships between consenting adults is morally wrong or not a moral issue. How about? 1) Morally wrong, 2) Not a moral issue." Outcome is coded 1 if respondent indicates "morally wrong."

CNN 1998 poll ($N = 1036$): Nationally representative telephone poll sponsored by TIME magazine and CNN. Fielded October 14-15, 1998. Item we use asks respondents if "do you personally think that homosexual relationships between consenting adults is morally wrong or not a moral issue. How about? 1) Morally wrong, 2) Not a moral issue." Outcome is coded 1 if respondent indicates "morally wrong."

CNN 2001 poll ($N = 1000$): Nationally representative telephone poll sponsored by TIME magazine and CNN. Fielded January 10-11, 2001. Item we use asks respondents if "do you personally think that homosexual relationships between consenting adults is morally wrong or not a moral issue. How about? 1) Morally wrong, 2) Not a moral issue." Outcome is coded 1 if respondent indicates "morally wrong."

CNN 2004 poll ($N = 1000$): Nationally representative telephone poll sponsored by TIME magazine and CNN. Fielded February 5-6, 2004. Item we use asks respondents if "do you personally think that homosexual relationships between consenting adults is morally wrong or not a moral issue. How about? 1) Morally wrong, 2) Not a moral issue." Outcome is coded 1 if respondent indicates "morally wrong."

D.7 Falsification Test Outcome Details

Outcome: Ban Abortion. **Surveys:** CNN Jan. '98, CNN Newsweek Oct. '98. **Pre-Shepard Outcome:** "Do you think abortions should be 1) legal under any circumstance, 2) legal under certain circumstances, or 3) illegal in all circumstances." Coded 1 if respondent indicates "legal under any circumstance" and 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Affirmative Action 1. **Surveys:** CBS Dec. '97, CBS Jul. '00. **Pre-Shepard Outcome:** "In order to make up for past discrimination, do you favor or oppose programs which make special efforts to help minorities get ahead?" 1) Favor, 2) Oppose. Coded 1 if respondent indicates favor, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Affirmative Action 2. **Surveys:** ANES 96'-'98. **Pre-Shepard Outcome:** " Some people say that because of past discrimination, blacks should be given preference in hiring and promotion. Others say that such preference in hiring and promotion of blacks is wrong because it gives blacks advantages they haven't earned. What about your opinion – are you FOR or AGAINST preferential hiring and promotion of blacks? " 1) For preferential hiring and promotion of blacks, 2) Against preferential hiring and promotion of blacks. Coded 1 if respondent indicates for preferential hiring, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Death Penalty. **Surveys:** Kaiser Jul. '98, Gallup Feb. '99 **Pre-Shepard Outcome:** "Do you favor or oppose the death penalty for persons convicted of murder?" 1) Favor, 2) Oppose. Coded 1 if favor, 0 otherwise. **Post-Shepard Outcome:** "Are you in favor of the death penalty for a person convicted of murder?" 1) Yes, in favor, 2) No, not in favor. Coded 1 if favor, 0 otherwise.

Outcome: Black People are Unintelligent. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "Do people in these groups tend to be unintelligent or tend to be intelligent? Where you you rate Blacks in general on this scale?" 1-7 scale from 1 = unintelligent to 7 = intelligent, reverse coded and rescaled between 0-1. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Spending Too Little on Helping Black People **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount: improving the conditions of Blacks" Coded 1 if too little, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Black-White Inequality is Because of Discrimination. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "On the average (Negroes/Blacks/African-Americans) have worse jobs, income, and housing than white people. Do you think these differences are: mainly due to discrimination" 1) Yes, 2) No. Coded 1 if yes, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Black-White Inequality is Because of In-Born Ability. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "On the average (Negroes/Blacks/African-Americans) have worse jobs, income, and housing than white people. Do you think these differences are: Because most (Negroes/Blacks/African-Americans) have less in-born ability to learn?" 1) Yes, 2) No. Coded 1 if yes, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Black-White Inequality is Because of No Chance for Education. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "On the average (Negroes/Blacks/African-Americans) have worse jobs, income, and housing than white people. Do you think these differences are: Because most (Negroes/Blacks/African-Americans) don't have the chance for education that it takes to rise out of poverty?" 1) Yes, 2) No. Coded 1 if yes, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Black-White Inequality is Because of No Motivation. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "On the average (Negroes/Blacks/African-Americans) have worse jobs, income, and housing

than white people. Do you think these differences are: Because most (Negroes/Blacks/African-Americans) just don't have the motivation or will power to pull themselves up out of poverty?" 1) Yes, 2) No. Coded 1 if yes, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Oppose Living with Black People. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "Now I'm going to ask you about different types of contact with various groups of people. In each situation would you please tell me whether you would be very much in favor of it happening, somewhat in favor, neither in favor nor opposed to it happening, somewhat opposed, or verymuch opposed to it happening? Living in a neighborhood where half of your neighbors were blacks?" 1-5 scale from 1 = Strongly Favor to 5 = Strongly Oppose. Coded 1 if oppose or strongly oppose, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Black Feeling Thermometer. **Surveys:** ANES '96-'98. **Pre-Shepard Outcome:** "How would you rate Blacks?" 0-100 scale, rescaled between 0-1. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Abortion Any Time. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** 'Please tell me whether or not you think it should be possible for a pregnant woman to obtain a legal abortion if the woman wants it for any reason?" 1 if yes. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Support Female Politicians. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "Tell me if you agree or disagree with this statement: Most men are better suited emotionally for politics than are most women" 1 if agree, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Working Women Good. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "Now I'm going to read several more statements. As I read each one, please tell me whether you strongly agree, agree, disagree, or strongly disagree with it. For example, here is the statement: A working mother can establish just as warm and secure a relationship with her children as a mother who does not work." 1 if agree, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Working Women Bad 1. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "Now I'm going to read several more statements. As I read each one, please tell me whether you strongly agree, agree, disagree, or strongly disagree with it. For example, here is the statement: A preschool child is likely to suffer if his or her mother works." 1 if agree, 0 otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

Outcome: Working Women Bad 2. **Surveys:** GSS '98-'00. **Pre-Shepard Outcome:** "Now I'm going to read several more statements. As I read each one, please tell me whether you strongly agree, agree, disagree, or strongly disagree with it. For example, here is the statement: It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family." 1 if agree, otherwise. **Post-Shepard Outcome:** Same as pre-Shepard

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