Religiosity, Safety Beliefs, and Support for Abortion Regulations in Texas

Elizabeth J. Ela, University of Texas at Austin Isabel H. McLoughlin, University of Texas at Austin Kari White, University of Alabama-Birmingham Joseph E. Potter, University of Texas at Austin

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Correspondence to: ejela@utexas.edu

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Abstract:

Texas House Bill 2 was signed into law in 2013. Among other provisions, HB2 targeted abortion providers, requiring that physicians have admitting privileges at a nearby hospital and that facilities meet the standards of an ambulatory surgical center. The passage of HB2 resulted in the closure of many clinics across the state. These two provisions of HB2 were ultimately struck down by the United States Supreme Court, but similar regulations have been enacted in other states. We use data from an online survey of 1,200 Texas voters to investigate predictors of support for the ASC requirement and the admitting privileges requirement. We find that highly religious voters are more supportive of these regulations, particularly religious voters with a college education. Respondents who were randomly selected to receive information about abortion safety are generally less likely to support either provision. However, this intervention has no effect on biblical literalists. Religiosity, education, and political ideology/affiliation all are associated with support for HB2, but these relationships are partially or fully mediated by voters' beliefs about the safety impact of the law. Providing accurate safety information about abortion seems to reduce most voters' support for medically unnecessary abortion regulations, but this strategy may not be universally effective.

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Introduction

Texas House Bill 2 (HB2) was signed into law in July 2013. Among other provisions, HB2 included requirements that 1) abortion providers maintain admitting privileges at a hospital within 30 miles of their clinic and 2) abortion facilities meet the standards of an ambulatory surgical center (ASC). ASC standards require physical changes to the clinic building, such as wide hallways and doorways to fit gurneys, specific environmental/climate control settings, and procedure rooms that meet surgical room standards. These changes can be prohibitively expensive, forcing clinics that are unable to renovate their facilities to close. Proponents of the law claimed that these measures would improve the safety of abortion, although abortion is one of the safest surgical procedures for women in the US (National Academies of Sciences 2018). Indeed, many abortion providers do not have hospital admitting privileges because complications requiring hospitalization are so rare. According to a recent report from the National Academies of Science, Engineering, and Medicine (2018), these provisions do not improve abortion safety nor the quality of care, and actually reduce access to care.

The passage of HB2 resulted in the closure of half of the abortion clinics in the state. Consequently, the number of women of reproductive age living more than 50 miles away from the nearest abortion provider doubled (Grossman 2017). Waiting times for procedures increased significantly as the remaining clinics struggled to absorb the demand (Texas Policy Evaluation Project 2015a).

These two provisions of HB2 were overturned by the United States Supreme Court in 2016. The court held that these regulations did not advance women's health, and that they placed an undue burden on a woman's right to choose. Although the argument that these laws were justified by concern for women's health did not convince the court, this has been a powerful

rhetorical strategy for proponents of abortion restrictions. This strategy is not unique to Texas; many other state legislatures have enacted laws similar to HB2. As of September 2018, sixteen states have laws dictating the physical requirements of facilities in which abortions can be performed; nine states regulate the size of procedure rooms, and seven states regulate corridor width. Ten states place unnecessary requirements on clinicians that perform abortions, requiring either hospital admitting privileges or alternative agreements. Few of these laws have been struck down by higher courts (Guttmacher Institute 2018b).

In this paper, we investigate predictors of popular support for the provisions of HB2 requiring abortions to take place in ambulatory surgical centers and requiring abortion providers to maintain admitting privileges at a nearby hospital. Using data from a representative online survey of registered voters in Texas, we consider the impact of religion, education, and knowledge about abortion safety on voters' opposition to legal abortion, beliefs about the safety impact of HB2, and overall support for the law.

Background

Religion

Religious affiliation is among the strongest correlates of abortion attitudes among American adults (Cook, Jelen, and Wilcox 1993a; Emerson 1996; Farrell 2011; Hertel and Hughes 1987; Jelen and Wilcox 2003; Killian and Wilcox 2008; Petersen 2001; Strickler and Danigelis 2002; Sullins 1999; Welch, Leege, and Cavendish 1995). Affiliation shapes many elements of religious life including specific tenets of faith traditions (taking the bible as literally true or accepting leadership by the Pope), membership in social communities, and political engagement. Moral objections to abortion may stem directly from religious teachings, or indirectly via the diffusion of information and attitudes from fellow congregants and leaders. For

instance, Evans (2002) observes that members of more conservative or faith traditions may hear anti-abortion messaging and it is tied to true adherence to the faith, as in a "good Southern Baptist" is against abortion (Evans 2002 p.420), whereas more mainline affiliates do not associate abortion views with proper adherence.

Religiosity (the importance of one's faith) may also shape abortion views. Higher religiosity is typically associated with stronger opposition to abortion (Bolks et al. 2000; Ellison, Echevarría, and Smith 2005). This pattern holds across several denominations (Craig and O'Brien 1993; Strickler and Danigelis 2002). Indeed, Bartkowski (2012) finds a stronger influence of religion abortion attitudes among those who have sought out a religious community and faith voluntarily, rather than being born into a faith.

Broadly speaking, religious and political conservatives are both more likely to have negative abortion attitudes. Though religious beliefs do not necessarily beget political beliefs or vice versa, these groups share many social characteristics. For example, Brint and Abrutyn (2010) attribute conservative political attitudes to religiosity, moral traditionalism, rigid gender roles, and lower educational attainment: traits which are also associated with evangelical Christianity. Apart from the direct influence of religion, some degree of opposition to abortion among religious voters may be due to the composition of this group with respect to education, political ideology, and other socioeconomic characteristics.

We expect that highly religious voters will be more opposed to legal abortion and more likely to support abortion regulations. Since biblical literalism is typical of more conservative, evangelical denominations of Christianity, we also hypothesize that voters who believe the Bible to be literally true will be more likely to oppose legal abortion and more likely to support abortion restrictions.

Education

Decades of research indicate that education has a liberalizing effect on abortion opinions (Cochran et al. 1996; Evans 2002; Granberg 1991; Wilcox 1992). Higher education may influence abortion views through exposure to differing viewpoints, or diffusion of attitudes from peers. Individuals with higher education may also be more accepting of scientific research as a valid source of insight about the physical and social world. However, some religious groups are be better at insulating their members from liberal attitudes that can stem from more education (Petersen 2001). Highly educated evangelicals are no less likely to identify as Republicans than less educated evangelicals (Brint and Abrutyn 2010), and evangelicals with some college or a college degree actually have more conservative views on abortion than evangelicals with no college (Evans 2002). In other words, the liberalizing effect of education on abortion attitudes is not universal. Exposure to opposing arguments may reinforce some students' original views. Instead of altering their opinions on abortion, education may equip religious students to articulate their views more effectively.

Overall, we expect that highly educated respondents will be less opposed to legal abortion, and less supportive of abortion regulations. However, we anticipate that among highly religious respondents, higher educational attainment will be associated with greater opposition to legal abortion and more support for abortion regulations.

Knowledge about abortion safety

Abortion is a safe medical procedure with an extremely low complication rate, especially during the first trimester (National Academies of Sciences 2018; Upadhyay et al. 2015; Weitz et al. 2013). However, misperceptions about the riskiness of abortion are widespread, as are

politically motivated assertions that abortion is harmful to women (Kavanaugh et al. 2013; Littman et al. 2014).

Correcting this misinformation may be an effective strategy for abortion advocates to reduce popular support for policies that restrict abortion access under the guise of safety. In a randomized experiment, White and colleagues (2017) find that respondents who read a short statement about the low incidence of abortion complications are less likely to believe that HB2 will improve the safety of abortion, and are less likely to support the law. However, this type of intervention may not be universally effective. For instance, providing information about abortion safety may be less compelling to voters with less faith in scientific institutions and authorities.

In our analysis, we test whether the effect of this intervention differs between voters who do and do not believe that the Bible is literally true. Endorsing this belief requires selective engagement with or outright rejection of scientific evidence; thus, biblical literalists may be less responsive to abortion safety information. Biblical literalism is characteristic of evangelical Christians, and although attitudes toward science vary tremendously among Christians, evangelicals are somewhat less likely than non-evangelicals to trust statements from scientific authorities about the risks and benefits of science and technology (Cacciatore et al. 2018). We anticipate that voters who receive accurate information about abortion safety will be less supportive of abortion regulations. However, we hypothesize that the effect of this intervention on support for these regulations will be weaker among voters who believe the Bible to be literally true.

Data

We use data from a 2016 online survey of registered voters in Texas. Participants were members of the YouGov opt-in Internet Panel. In order to reach the target sample of 1,200 Texas

voters, YouGov contacted 4,780 adult panel members. Members received up to three invitations to participate via email: 1,834 members responded, and 1,522 of these members were eligible to participate based on their age, home zip code, voter registration status, and ability to complete the survey in English or Spanish. The survey was administered in May-June 2016. The total number of completed surveys was 1,372.

YouGov used a sampling frame derived from the 2012 American Community Survey to match 1,200 respondents on gender, age, race, education, ideology and political interest. Using characteristics of Texas voters from the November 2012 Current Population Survey and the 2007 Pew Religious Life Survey, YouGov constructed survey weights for these respondents in order to create a representative sample of 1,200 Texas voters. This approach resulted in a representative sample that is more accurate than samples obtained through random-digit-dialing (Rivers 2016; Vavreck and Rivers 2008). Finally, we exclude 13 respondents who are missing on key predictors, resulting in an analytic sample of 1,187 Texas voters.

Measures

Abortion views

Personal convictions about abortion were captured with the question "Which of the following statements about the issue of abortion comes closest to your own view?" We consider respondents to be opposed to legal abortion if they selected, "I believe having an abortion is morally wrong and should be illegal." (Other response options included "I believe having an abortion is morally acceptable and should be legal," "I am personally against abortion, but I don't believe government should prevent a woman from making that decision for herself," and "Other view." Respondents selecting "other view" were asked to elaborate on their views; we

recoded three of these respondents as opposed to legal abortion based on their open-ended responses.)

Views on ambulatory surgical center (ASC) requirement

Before answering questions about their views on the ASC requirement, respondents read the following statement, "A law recently passed in Texas requires clinics that provide abortions to meet the standards of ambulatory surgical centers, meaning they have to be like minihospitals." Overall support for the ASC requirement was measured with the question, "Do you support or oppose the law that requires clinics that provide abortions to meet the standards of ambulatory surgical centers?" We code respondents as supporters of the ASC requirement if they indicate that they "strongly support" or "somewhat support" the law (versus "strongly oppose," "somewhat oppose," and "not sure.") Respondents also were asked about the probable safety impact of the ASC law: "Do you think that this law will make abortion more safe, less safe, or have no effect on the safety of abortion?" In a collapsed version of this variable, we identify the respondents who believe the ASC law will make abortion "more safe" (versus "less safe," "no effect on safety," and "not sure").

Views on admitting privileges requirement

Prior to answering questions about the requirement that abortion providers have hospital admitting privileges, respondents read the statement, "Another recent law in Texas requires physicians at abortion clinics to have the ability to admit patients at a nearby hospital ('admitting privileges.')" Respondents were asked about their overall support for this law: "Do you support or oppose the law that requires physicians at abortion clinics to have admitting privileges at a nearby hospital?" We combine respondents who strongly support or somewhat support the law; we also combine those who strongly oppose or somewhat oppose the law with those who are not

sure. Finally, respondents were asked about the probable safety impact of the admitting privileges requirement: "Do you think that this law will make abortion "more safe", less safe, or have no effect on the safety of abortion?" We dichotomize this measure, comparing those who say the law will make abortion "more safe" to those who select any of the other responses. *Received extra information about abortion safety and regulations*

At the time of data collection, respondents were randomized into a control group or an experimental group that received additional information before answering the questions about abortion regulations described above. The experimental group received the following information about the ASC requirement: "Prior to the Texas legislature passing this law, abortions could be performed in an outpatient clinic. When abortions are performed in an outpatient clinic, the risk of a woman having a serious complication that requires hospitalization is less than one quarter of one percent (or less than 1 in 400 women). There is no difference in the complication rate between abortions performed in an outpatient clinic or an ambulatory surgical center." Before answering questions about admitting privileges, respondents in the experimental group were given the following information: "Prior to the Texas Legislature passing this law, doctors performed abortions could send a patient to any hospital to receive treatment, even if they did not have hospital admitting privileges. It can be difficult for doctors to get admitting privileges for reasons that are not related to their medical qualifications, and since this law went into effect, the number of doctors performing abortions in Texas has fallen by 40%, forcing some clinics to close."

White et al. (2017) find that receiving this extra information reduces support for these abortion restrictions. Thus, we include whether respondents received information about abortion

safety and regulations in all models predicting respondents' support for specific provisions of HB2.

Religion

We consider two aspects of religion: religiosity and biblical literalism. Religiosity is based on a question about the importance of religion in the respondent's life: extremely important, somewhat important, not very important, or not at all important. We consider respondents to be highly religious if they describe religion as "extremely important." Biblical literalism is indicated by agreement that "The Bible is the actual word of God and is to be taken literally, word for word." Since biblical literalism is characteristic of certain evangelical Protestant traditions, we use this variable as a rough proxy for religious denomination. *Education*

We treat education as a categorical variable with the options "high school or less," "some college/2-year degree," and "college degree or more." We treat respondents with a high school education or less as the reference group. In select models, we also include an interaction between high religiosity and education.

Political affiliation/ideology

Our measure of political affiliation/ideology is based on two scales capturing party affiliation and political ideology. Our composite measure includes five categories: conservative Republicans, somewhat conservative Republicans, moderates, somewhat liberal Democrats, and liberal Democrats. We treat moderates as the reference group.

Demographic characteristics

Finally, these analyses control for other demographic characteristics that may be associated with key predictors as well as views about abortion and abortion regulations. These include gender, age, race, and whether the respondent has any children.

Methods

We use multivariable logistic regression models to predict several outcomes: opposition to legal abortion, belief that requiring abortions to be performed in ASC will make abortion safer, belief that requiring abortion providers to maintain hospital admitting privileges will make abortion safer, support for the ASC requirement, and support for the admitting privileges requirement.

Opposition to legal abortion

We estimate two models predicting opposition to legal abortion. The first model includes the main effects of religion and education, along with political ideology/affiliation and demographic characteristics. The second model also includes an interaction between religiosity and education. Because respondents were asked for their views on abortion prior to the experimental portion of the survey, these models do not control for whether the respondent received additional information about abortion safety and regulations.

Beliefs about safety impact of HB2 provisions

We estimate a series of models predicting whether respondents believe that the ASC requirement and admitting privileges requirement will make abortion safer. For each provision of HB2, we estimate a first model that includes the main effects of religion and education, political ideology/affiliation, and demographic characteristics. This model also includes whether respondents are personally opposed to legal abortion, and whether they were part of the

experimental group that received additional information about abortion safety and regulations. The second model adds an interaction between biblical literalism and receiving additional information about abortion safety, in order to test whether the effect of this intervention is consistent between people who believe the Bible is literally true and people who do not. Finally, the third model includes an additional interaction term between religiosity and education. *Support for HB2 provisions*

Finally, we estimate a series of four models predicting support for each abortion regulation. The first model includes main effects of religion and education, respondents' views on abortion, whether respondents received additional information about abortion safety and regulations, political ideology/affiliation, and demographic characteristics. The second model adds an interaction between biblical literalism and receiving extra information about abortion safety; the third model adds an interaction between religiosity and education. The fourth model includes whether the respondent believes that the regulation in question is likely to make abortion safer. This final model tests whether characteristics such as education are directly related to support for abortion regulations, or whether they operate indirectly through voters' beliefs about the safety impact of HB2.

Results

Table 1 describes the characteristics of the analytic sample, including all outcomes, predictors, and control variables. Over one quarter (29.7%) of respondents oppose legal abortion. Approximately half (50.6%) of Texas voters believe that the ASC requirement will make abortion safer, and nearly as many (47.1%) believe that the admitting privileges requirement will make abortion safer. A majority of respondents support these regulations. Just under half (45%) of respondents are highly religious, and 31.5% believe the Bible to be literally true.

Approximately one third of respondents have a high school education or less, one third have some college or a two-year degree, and the remaining 30.7% have a college degree or more.

In logistic regression models predicting opposition to legal abortion, both measures of religion are independently associated with opposition to legal abortion (Table 2). Texas voters are significantly more likely to oppose legal abortion if they believe that the Bible is literally true and also if they consider religion to be extremely important in their life. Respondents with a college degree are less likely to oppose legal abortion than those with a high school education or less. The interaction between high religiosity and education is not significant, indicating that the effect of education on opposition to legal abortion does not differ between religious and non-religious voters. Political ideology/affiliation is a strong and highly significant predictor of opposition to legal abortion. Compared to moderates, respondents who describe themselves as somewhat conservative or conservative Republicans are much more likely to oppose legal abortion. Liberal Democrats are less likely to oppose legal abortion than moderates.

Table 3 includes logistic regressions predicting whether Texas voters believe that requiring abortions to be performed in ASCs will make abortion safer. Highly religious respondents are more likely to believe that the ASC requirement will make abortion safer (Table 3, Model 1). We do not find a significant main effect of education, but there is a marginally significant interaction between high religiosity and having a college degree (Table 3, Model 2). In other words, highly religious voters are even more likely to believe that the ASC law will improve abortion safety if they have college degrees, and education *only* predicts belief in the safety impact of the ASC law among highly religious voters.

Biblical literalism is not related to beliefs about the safety impact of the ASC law after accounting for religiosity. Respondents who received extra information about abortion safety and

regulations are less likely to believe that the ASC requirement will make abortion safer; this relationship does not depend on whether respondents believe that the Bible is literally true (Table 3, Model 3).

We find strong partisan differences in the likelihood of believing that the ASC requirement will improve abortion safety: respondents identifying as somewhat conservative or conservative Republicans are more likely than moderates to respond that the law will make abortion safer. Respondents identifying as somewhat liberal or liberal Democrats are less likely than moderates to believe that the ASC requirement will make abortion safer. All else being equal, believing that the ASC requirement will improve abortion safety is less likely among women and more likely among respondents with children. Beliefs about the safety impact of the ASC requirement are not associated with age or race.

Support for the ASC requirement is more likely among highly religious respondents (Table 4, Model 1), and the effect of high religiosity is even larger among respondents with a college degree (Table 4, Model 2). The main effect of education is not significant, suggesting that educational attainment predicts support for the ASC requirement, but only among highly religious respondents.

In general, respondents are less likely to support the ASC requirement if they were given additional information about abortion safety and regulations. However, a marginally significant interaction nearly cancels out the main effect of this intervention among biblical literalists (Table 4, Model 3). In other words, providing accurate information about the safety of abortion appears to reduce support for the ASC requirement, but this intervention is much less effective among voters who consider the Bible to be literally true.

Support for the ASC requirement is more likely among somewhat conservative and conservative Republican voters than moderate voters, and less likely among somewhat liberal and liberal Democrat voters. Significant demographic predictors of support for the ASC requirement include being female and having children.

Finally, respondents are far more likely to support the ASC requirement if they believe that requiring all abortions to occur in ASCs will make abortion safer (Table 4, Model 5). Moreover, the effects of religion (including both interactions) and political ideology/affiliation on support for the ASC requirement are mediated by respondents' beliefs about the safety impact of the law.

Table 5 shows logistic regression models predicting whether Texas voters believe that requiring abortion providers to have hospital admitting privileges will make abortion safer. Highly religious respondents are more likely to believe that the admitting privileges requirement will make abortion safer (Table 5, Model 1), but only among respondents with college degrees (Table 5, Model 2). Higher education is not associated with beliefs about the safety impact of the law among respondents who do not have college degrees. Once again, the main effect of biblical literalism is not significant, but biblical literalism appears to neutralize the effect of receiving information about abortion safety (Table 5, Model 3). Overall, respondents who are given extra information about abortion safety and restrictions are less likely to believe that the admitting privileges requirement will make abortion safer. However, this relationship is offset by a positive interaction of nearly the same magnitude between receiving information about abortion and believing that the Bible is literally true. Essentially, receiving information about abortion safety is only associated with beliefs about the safety impact of the admitting privileges requirement among respondents who do not consider the Bible to be literally true.

Voters are more likely to believe that the admitting privileges requirement will improve abortion safety if they have children, and if they consider themselves to be somewhat conservative or conservative Republicans (versus moderates). Liberal Democrats are less likely than moderates to believe that requiring abortion providers to have hospital admitting privileges will improve abortion safety.

Logistic regression models predicting support for the admitting privileges requirement closely resemble those predicting support for the ASC requirement (Table 6). Highly religious respondents are more likely to support the admitting privileges requirement (Table 6, Model 1), but only among those with a college degree (Table 6, Model 2). Biblical literalism does not predict support for this provision of HB2, but biblical literalists in the intervention group appear less responsive to the additional information about abortion safety (Table 6, Model 3). Among respondents who do not believe the Bible to be literally true, receiving extra information about abortion safety is associated with lower support for the admitting privileges requirement. Among respondents who do believe the Bible to be literally true, the net effect of receiving this information is almost zero due to the positive interaction.

Support for the admitting privileges requirement is more likely among respondents with children. Conservative and somewhat conservative Republicans are more likely than moderates to support the admitting privileges requirement, while somewhat liberal and liberal Democrats are less likely than moderates to support the law. Voters who believe that requiring abortion providers to have hospital admitting privileges will make abortion safer are far more likely to support this law (Table 6, Model 4). The effects of religion and political ideology/affiliation on support for the admitting privileges requirement are partially or fully mediated by respondents' beliefs about the safety impact of the law.

Discussion

Support for the HB2 provisions requiring abortions to occur in ASCs and abortion providers to have hospital admitting privileges is primarily driven by (or perhaps justified in terms of) voters' convictions that these laws will improve abortion safety. However, several other social and demographic characteristics are associated with voters' belief in the positive safety impact of these laws, and thus have indirect relationships with support for abortion regulations. These include religiosity, political conservatism, and being a parent. With minor exceptions, the ASC requirement and admitting privileges requirement share a similar set of predictors. In contrast to prior studies, (Petek, Paluch, and Baldassare 2010; Strickler and Danigelis 2002; Wilcox 1992), we do not find systematic differences in respondents' views on these abortion regulations by age or by race/ethnicity, even at the bivariate level (not shown).

Collectively, these results suggest that highly religious voters are more supportive of these abortion regulations even after accounting for their broader views on legal abortion, and that this effect is concentrated among highly religious respondents with a college degree or more. Contrary to our expectations, we do not find a relationship between education and views on HB2 among less religious voters. Our findings are at odds with prior research demonstrating more positive attitudes toward abortion with higher educational attainment, but they are consistent with past research suggesting that higher education predicts stronger opposition to abortion among highly religious people.

Given the polarization of public opinion about abortion, it is striking that so much of the effects of religion and political party/affiliation on support for HB2 is mediated by voters' beliefs about the safety impact of this law. It is possible that for some respondents, statements about positive safety consequences are post-hoc justifications for supporting abortion regulations. In

this sense, supporters of HB2 may be mirroring the rhetoric used by anti-abortion legislators. It is also possible that abortion opponents genuinely (and incorrectly) believe that abortion is dangerous. However, we do not find a relationship between opposition to legal abortion and voters' views on either provision of HB2 after accounting for religion, political ideology/affiliation, and other demographic characteristics. Opposition to legal abortion may still shape views on these abortion regulations indirectly: for instance, abortion views may influence political party affiliation (Killian and Wilcox 2008), and political ideology/affiliation is a strong predictor of Texas voters' beliefs about the safety impact of HB2. Nevertheless, these findings suggest that support for abortion restrictions is not merely a proxy for opposition to all abortion.

A key implication of this study is that voters' beliefs about the safety impact of specific abortion regulations shape their views on these laws. Assuming that these beliefs are sincere, the expectation that these laws will improve abortion safety may reflect misconceptions about the riskiness of abortion. This interpretation would explain the high level of support for these restrictions among respondents who also support legal abortion, and it provides some additional context for the success of the intervention. After accounting for many personal characteristics associated with abortion views, respondents given accurate information about abortion safety are less supportive of HB2. The effect of the intervention is fully mediated by respondents' belief in the safety impact of both HB2 provisions, suggesting that the intervention works because voters with more accurate knowledge about abortion safety are more skeptical about the benefit of these abortion regulations.

Our findings also indicate an important caveat: improving voters' knowledge about abortion safety is not universally effective. We have already shown that education does not necessarily have a liberalizing effect on abortion views in all quarters. Although our study

echoes White and colleagues' (2017) finding that providing accurate abortion safety information *generally* reduces support for medically unnecessary abortion restrictions, we find that this intervention is not effective among voters who believe the Bible to be literally true. This is intriguing given that biblical literalism does not directly predict voters' views on either provision of HB2. On average, biblical literalists are not more likely to support provisions of HB2 or believe in their effectiveness, but their opinions are not as easily moved by new information about abortion safety. This finding may reflect differences between biblical literalists and non-literalists in the authority attributed to scientific sources (Cacciatore et al. 2018).

Conversely, these findings show that many voters' opinions are more easily moved when they receive new information. Many of these voters support legal abortion, but they also may have misconceptions about the riskiness of abortion. In the absence of more accurate information, they can be persuaded to support abortion restrictions by rhetoric about safety, but they can also be persuaded out of supporting abortion restrictions by clear communication about abortion safety. This may be a fruitful strategy for abortion advocates to shape public opinion about abortion regulations that may be proposed in the future, in Texas and elsewhere.

This analysis has a number of limitations. Although religion is a key predictor of support for abortion regulations in our analysis, the only measures of religion available in our data are religiosity and biblical literalism. We use biblical literalism as a rough proxy for conservative evangelical Christianity, but we do not have the means to distinguish between other groups of Christians or identify adherents of faiths other than Christianity. We also do not have information on religious attendance. Frequent contact with like-minded others at religious services may influence voters' opinions on abortion or increase the salience of abortion as a political issue, above and beyond the specific teachings of their faith tradition.

This study is designed to be representative of Texas voters, and our findings may not generalize to voters in other states. In a comparative study of six populous states (California, Florida, Illinois, Ohio, Pennsylvania, and Texas), Cook et al (Cook, Jelen, and Wilcox 1993b) find state-level differences in support for abortion restrictions. However, they find that these differences are fully explained by variation in residents' demographic characteristics, party affiliation, political ideology, and religion, and they do not find evidence that the *effect* of these traits on residents' abortion views varies by state. We cannot rule out the possibility that state-level differences in the predictors of abortion views have emerged since the early 1990s, but Cook and colleagues' conclusions about the predictors of support for abortion regulations are broadly consistent with our own¹.

Texas has unique features that justify studying support for abortion regulations within the state, despite the limitations inherent to a regional sample. Texas is perhaps a uniquely restrictive environment with respect to reproductive health (ACLU 2016; Guttmacher Institute 2018a, 2018b), and the state legislature has consistently attempted to restrict access to abortion through various means. For example, in addition to the two provisions considered here, HB2 also included a ban on abortion at 20 weeks and restrictions on the use of medical abortion based on outdated FDA protocols (Grossman 2017). Texas has passed numerous restrictions in recent years; although the ASC and admitting privileges requirements enacted in Texas were struck down by the United States Supreme Court, laws similar to HB2 are in effect or pending in many other states (Guttmacher Institute 2018b). Understanding the factors that drive public support for these regulations in Texas and identifying effective interventions may prove useful elsewhere.

¹ This continuity is striking given that the abortion restrictions themselves have evolved over time.

Finally, Texas is the second-most populous state in the United States, with over 5.9 million women of reproductive age. Approximately 22% of Texas residents are women between the ages of 15 and 45 (Texas Demographic Center 2015). Moreover, Texas has high proportions of women who are uninsured, foreign-born, Hispanic, young, or living in rural areas, populations already facing significant barriers to reproductive healthcare (Hasstedt 2014). Apart from their significance as a harbinger of future legislation elsewhere, abortion restrictions in Texas therefore have immediate practical consequences.

References

- ACLU. 2016. "Abortion in Texas." ACLU of Texas. Retrieved September 5, 2018 (https://www.aclutx.org/en/know-you-rights/abortion-in-texas).
- Bolks, Sean M., Diana Evans, J. L. Polinard, and Robert D. Wrinkle. 2000. "Core Beliefs and Abortion Attitudes: A Look at Latinos." *Social Science Quarterly* 81(1):253–60.
- Brint, Steven and Seth Abrutyn. 2010. "Who's Right About the Right? Comparing Competing Explanations of the Link Between White Evangelicals and Conservative Politics in the United States." *Journal for the Scientific Study of Religion* 49(2):328–50.
- Cacciatore, Michael A., Nick Browning, Dietram A. Scheufele, Dominique Brossard, Michael A. Xenos, and Elizabeth A. Corley. 2018. "Opposing Ends of the Spectrum: Exploring Trust in Scientific and Religious Authorities." *Public Understanding of Science* 27(1):11–28.
- Cochran, John K., Mitchell B. Chamlin, Leonard Beeghley, Angela Harnden, and Brenda Sims Blackwell. 1996. "Religious Stability, Endogamy, and the Effects of Personal Religiosity on Attitudes toward Abortion." *Sociology of Religion* 57(3):291–309.
- Cook, Elizabeth Adell, Ted G. Jelen, and Clyde Wilcox. 1993a. "Generational Differences in Attitudes Toward Abortion." *American Politics Quarterly* 21(1):31–53.
- Cook, Elizabeth Adell, Ted G. Jelen, and Clyde Wilcox. 1993b. "State Political Cultures and Public Opinion About Abortion." *Political Research Quarterly* 46(4):771–81.
- Craig, BH and DM O'Brien. 1993. *Abortion and American Politics*. Chatham, NJ: Chatham House Publishers.
- Ellison, Christopher G., Samuel Echevarría, and Brad Smith. 2005. "Religion and Abortion Attitudes Among U.S. Hispanics: Findings from the 1990 Latino National Political Survey*." *Social Science Quarterly* 86(1):192–208.
- Emerson, Michael O. 1996. "Through Tinted Glasses: Religion, Worldviews, and Abortion Attitudes." *Journal for the Scientific Study of Religion* 35(1):41–55.
- Evans, John H. 2002. "Polarization in Abortion Attitudes in U.S. Religious Traditions, 1972– 1998." Sociological Forum 26.
- Farrell, Justin. 2011. "The Young and the Restless? The Liberalization of Young Evangelicals." *Journal for the Scientific Study of Religion* 50(3):517–32.
- Granberg, Donald. 1991. "CONFORMITY TO RELIGIOUS NORMS REGARDING ABORTION." Sociological Quarterly 32(2):267–75.
- Grossman, Daniel. 2017. "The Use of Public Health Evidence in Whole Woman's Health v Hellerstedt." *JAMA Internal Medicine* 177(2):155–56.

- Guttmacher Institute. 2018a. "State Facts About Abortion: Texas." *Guttmacher Institute*. Retrieved September 5, 2018 (https://www.guttmacher.org/fact-sheet/state-facts-about-abortion-texas).
- Guttmacher Institute. 2018b. "Targeted Regulation of Abortion Providers." *Guttmacher Institute*. Retrieved September 14, 2018 (https://www.guttmacher.org/state-policy/explore/targeted-regulation-abortion-providers).
- Hasstedt, Kinsey. 2014. "The State of Sexual and Reproductive Health and Rights In the State of Texas: A Cautionary Tale." *Guttmacher Policy Review* 17(2):14–21.
- Hertel, Bradley R. and Michael Hughes. 1987. "Religious Affiliation, Attendance, and Support for 'Pro-Family' Issues in the United States." *Social Forces* 65(3):858–82.
- Jelen, Ted G. and Clyde Wilcox. 2003. "Causes and Consequences of Public Attitudes toward Abortion: A Review and Research Agenda." *Political Research Quarterly* 56(4):489– 500.
- Kavanaugh, Megan L., Danielle Bessett, Lisa L. Littman, and Alison Norris. 2013. "Connecting Knowledge about Abortion and Sexual and Reproductive Health to Belief about Abortion Restrictions: Findings from an Online Survey." *Women's Health Issues* 23(4):e239–47.
- Killian, Mitchell and Clyde Wilcox. 2008. "Do Abortion Attitudes Lead to Party Switching?" *Political Research Quarterly* 61(4):561–73.
- Littman, Lisa L., Adam Jacobs, Rennie Negron, Tara Shochet, Marji Gold, and Miriam Cremer. 2014. "Beliefs about Abortion Risks in Women Returning to the Clinic after Their Abortions: A Pilot Study." *Contraception* 90(1):19–22.
- National Academies of Sciences. 2018. *The Safety and Quality of Abortion Care in the United States*. Washington, D.C.: The National Academies Press.
- Petek, Sonja, Jennifer Paluch, and Mark Baldassare. 2010. "Parental Consent and Changing Abortion Attitudes: Examining Trends in California." *AAPOR Conference Preceedings* 15.
- Petersen, Larry R. 2001. "Religion, Plausibility Structures, and Education's Effect on Attitudes Toward Elective Abortion." *Journal for the Scientific Study of Religion* 40(2):187–204.
- Rivers, Doug. 2016. "Pew Research: YouGov Consistently Outperforms Competitors on Accuracy | YouGov." *YouGov*. Retrieved September 4, 2018 (https://today.yougov.com/topics/finance/articles-reports/2016/05/13/pew-researchyougov).
- Strickler, Jennifer and Nicholas L. Danigelis. 2002. "Changing Frameworks in Attitudes Toward Abortion." *Sociological Forum* 15.

- Sullins, D. Paul. 1999. "Catholic/Protestant Trends on Abortion: Convergence and Polarity." *Journal for the Scientific Study of Religion* 38(3):354–69.
- Texas Demographic Center. 2015. "Texas Population Estimates Program." Retrieved September 4, 2018 (http://demographics.texas.gov/Data/TPEPP/Estimates/).
- Texas Policy Evaluation Project. 2015. "Abortion Wait Times in Texas: The Shrinking Capacity of Facilities and the Potential Impact of Closing Non-ASC Clinics."
- Upadhyay, Ushma D., Sheila Desai, Vera Zlidar, Tracy A. Weitz, Daniel Grossman, Patricia Anderson, and Diana Taylor. 2015. "Incidence of Emergency Department Visits and Complications after Abortion." *Obstet Gynecol* 125(1):175–83.
- Vavreck, Lynn and Douglas Rivers. 2008. "The 2006 Cooperative Congressional Election Study." *Journal of Elections, Public Opinion and Parties* 18(4):355–66.
- Weitz, Tracy A., Diana Taylor, Sheila Desai, Ushma D. Upadhyay, Jeff Waldman, Molly F. Battistelli, and Eleanor A. Drey. 2013. "Safety of Aspiration Abortion Performed by Nurse Practitioners, Certified Nurse Midwives, and Physician Assistants under a California Legal Waiver." *American Journal of Public Health* 103(3):454–61.
- Welch, Michael R., David C. Leege, and James C. Cavendish. 1995. "Attitudes toward Abortion among U.S. Catholics: Another Case of Symbolic Politics?" Social Science Quarterly 76(1):142–57.
- White, Kari, Daniel Grossman, Amanda Jean Stevenson, Kristine Hopkins, and Joseph E. Potter. 2017. "Does Information about Abortion Safety Affect Texas Voters' Opinions about Restrictive Laws? A Randomized Study." *Contraception* 96(6):381–87.
- Wilcox, Clyde. 1992. "Race, Religion, Region and Abortion Attitudes." *Sociology of Religion* 53(1):97–105.

	Ν	Min	Max	Percentage
Given abortion safety information	1187	0	1	52.5
Abortion views				
Opposes legal abortion	1187	0	1	29.7
ASC requirement will make abortion safer	1185	0	1	50.6
Supports ASC requirement	1186	0	1	58.1
Admitting privileges requirement will make abortion safer	1185	0	1	47.1
Supports admitting privileges requirement	1186	0	1	58.3
Religion				
Highly religious	1187	0	1	45.2
Bible literally true	1187	0	1	31.5
Education				
High school or less	1187	0	1	32.8
Some college/2yr degree	1187	0	1	36.5
College degree or more	1187	0	1	30.7
Political ideology/affiliation				
Conservative Republican	1187	0	1	25.8
Somewhat conservative	1187	0	1	19.4
Moderate	1187	0	1	21.9
Somewhat liberal	1187	0	1	18.7
Liberal Democrat	1187	0	1	14.2
Demographic characteristics				
Female	1187	0	1	54.9
Any children	1187	0	1	64.2
Age				
19-29 years old	1187	0	1	15.1
30-45 years old	1187	0	1	29.4
46-64 years old	1187	0	1	35.9
65+ years old	1187	0	1	19.6
Race				
White	1187	0	1	59.4
Black	1187	0	1	11.8
Hispanic	1187	0	1	25.6
Other	1187	0	1	3.2

Table 1: Weighted sample characteristics (n=1187)

Table 2: Log-odds of opposing legal abortion (n=1187)

	M1	M2
Religion X Education		
Bible literally true	0.556 *	0.559 *
	(0.234)	(0.233)
Highly religious (main effect)	1.254 ***	* 0.929 *
	(0.239)	(0.396)
Some college/2yr degree (main effect, ref: HS or less)	-0.376	-0.691 *
	(0.233)	(0.350)
College degree or more (main effect, ref: HS or less)	-0.553 *	-0.864 *
	(0.277)	(0.407)
Highly religious X some college/2yr degree		0.546
		(0.468)
Highly religious X college degree or more		0.535
		(0.539)
Political ideology/affiliation (ref: Moderate)		
Conservative Republican	2.039 ***	* 2.036 ***
	(0.333)	(0.332)
Somewhat conservative	0.905 **	0.910 **
	(0.329)	(0.327)
Somewhat liberal	0.124	0.152
	(0.345)	(0.344)
Liberal Democrat	-1.219 *	-1.160 *
	(0.528)	(0.525)
Demographic characteristics		
Female	-0.259	-0.259
	(0.202)	(0.203)
Has any children	0.348	0.340
	(0.243)	(0.243)
Age (ref: 46-64 years old)		
19-29 years old	0.652 *	0.643
	(0.331)	(0.332)
30-45 years old	0.499	0.496
	(0.265)	(0.266)
65+ years old	0.103	0.109
	(0.263)	(0.262)
Race (ref: White)		
Black	0.159	0.126
	(0.380)	(0.379)
Hispanic	0.437	0.429
	(0.279)	(0.279)
Other	-0.255	-0.241
	(0.505)	(0.498)

*p<0.05; **p<0.01; ***p<0.001 (two-tailed tests)

Table 3: Log-odds of believing that ASC requirement	M1	M2	M3
Religiosity X education			1110
Highly religious (main effect)	0.790 ***	0.556 +	0.540 +
	(0.194)	(0.316)	(0.313)
Some college/2yr degree (main effect, ref: HS or less)	0.125	0.141	0.123
	(0.193)	(0.251)	(0.248)
College degree or more (main effect, ref: HS or less)	0.087	-0.247	-0.276
	(0.210)	(0.269)	(0.267)
Highly religious X some college/2-year degree	(0.210)	-0.022	0.006
riging rengious resonic conege, 2 year degree		(0.376)	(0.374)
Highly religious X college degree or more		0.806 +	0.832 +
ringing religious X conege degree of more		(0.438)	(0.439)
Given abortion safety info X Biblical literalism		(0.430)	(0.439)
Given abortion safety info (main effect)	-0.586 ***	-0.589 ***	-0.722 ***
Given abortion safety into (main effect)			
	(0.158)	(0.158)	(0.185)
Bible literally true (main effect)	0.036	0.067	-0.176
	(0.215)	(0.218)	(0.287)
Given abortion safety info X Bible literally true			0.424
			(0.356)
Abortion views			
Opposes legal abortion	-0.269	-0.265	-0.257
	(0.204)	(0.205)	(0.205)
Political ideology/affiliation (ref: Moderate)			
Conservative Republican	0.856 ***	0.831 **	0.829 **
	(0.252)	(0.254)	(0.254)
Somewhat conservative	0.809 ***	0.804 **	0.801 **
	(0.245)	(0.246)	(0.246)
Somewhat liberal	-0.716 **	-0.733 **	-0.746 **
	(0.248)	(0.247)	(0.247)
Liberal Democrat	-1.307 ***	-1.292 ***	-1.295 ***
	(0.261)	(0.264)	(0.266)
Demographic characteristics			
Female	-0.377 *	-0.360 *	-0.358 *
	(0.163)	(0.164)	(0.165)
Any children	0.518 **	0.511 **	0.523 **
	(0.175)	(0.177)	(0.178)
Age (ref: 46-64 years old)			
19-29 years old	0.391	0.336	0.324
	(0.254)	(0.258)	(0.258)
30-45 years old	-0.260	-0.250	-0.250
	(0.199)	(0.198)	(0.197)
65+ years old	0.293	0.287	0.282
os i jeuro oki	(0.221)	(0.222)	(0.222)
Race (ref: White)	(0.221)	(0.222)	(0.222)
Black	-0.087	-0.100	-0.104
Duck	(0.271)	-0.100 (0.267)	-0.104 (0.268)
Hispania	0.271)	0.235	0.268)
Hispanic			
Other	(0.195)	(0.196)	(0.195)
Other	0.479	0.509	0.521
	(0.435)	(0.445)	(0.444)

+ p<0.10; *p<0.05; **p<0.01; ***p<0.001 (two-tailed tests)

Table 4: Log-odds of supporting ASC requirement (n=1184)

Table 4: Log-odds of supporting ASC requirement	M1	M2	M3	M4
Religiosity X education				
Highly religious (main effect)	1.239 ***	0.808 *	0.783 *	0.658 +
	(0.214)	(0.353)	(0.346)	(0.399)
Some college/2yr degree (main effect, ref: HS or less)	-0.034	-0.201	-0.239	-0.695 *
	(0.209)	(0.257)	(0.252)	(0.329)
College degree or more (main effect, ref: HS or less)	0.099	-0.259	-0.314	-0.271
	(0.223)	(0.269)	(0.266)	(0.320)
Highly religious X some college/2-year degree		0.417	0.467	0.944 +
		(0.413)	(0.408)	(0.525)
Highly religious X college degree or more		0.972 *	1.017 *	0.843
		(0.478)	(0.476)	(0.565)
Given abortion safety info X Biblical literalism				
Given abortion safety info (main effect)	-0.566 ***	-0.557 ***	-0.760 ***	-0.488 +
	(0.168)	(0.168)	(0.193)	(0.252)
Bible literally true (main effect)	0.066	0.097	-0.308	-0.294
	(0.239)	(0.242)	(0.324)	(0.413)
Given abortion safety info X Bible literally true			0.696 +	0.556
			(0.388)	(0.498)
Abortion views				
Opposes legal abortion	-0.109	-0.105	-0.091	0.151
	(0.227)	(0.229)	(0.227)	(0.314)
ASC requirement will make abortion safer				3.847 ***
				(0.241)
Political ideology/affiliation (ref: Moderate)				
Conservative Republican	0.839 **	0.811 **	0.806 **	0.454
	(0.274)	(0.277)	(0.277)	(0.355)
Somewhat conservative	0.844 **	0.836 **	0.833 **	0.559
	(0.264)	(0.265)	(0.264)	(0.350)
Somewhat liberal	-0.768 **	-0.769 **	-0.793 **	-0.459
	(0.250)	(0.252)	(0.249)	(0.323)
Liberal Democrat	-1.201 ***	-1.166 ***	-1.168 ***	-0.470
	(0.248)	(0.254)	(0.257)	(0.359)
Demographic characteristics				
Female	-0.465 **	-0.456 **	-0.455 **	-0.378
	(0.171)	(0.174)	(0.173)	(0.232)
Any children	0.649 ***	0.651 ***	0.671 ***	0.553 *
	(0.184)	(0.185)	(0.187)	(0.263)
Age (ref: 46-64 years old)				
19-29 years old	0.166	0.120	0.098	-0.292
	(0.264)	(0.267)	(0.265)	(0.375)
30-45 years old	-0.028	-0.028	-0.023	0.235
	(0.210)	(0.212)	(0.211)	(0.270)
65+ years old	0.381	0.369	0.357	0.192
	(0.239)	(0.238)	(0.237)	(0.308)
Race (ref: White)				
Black	0.179	0.127	0.122	0.366
	(0.278)	(0.276)	(0.275)	(0.410)
Hispanic	0.316	0.323	0.335	0.372
	(0.218)	(0.222)	(0.220)	(0.301)
Other	0.268	0.303	0.318	-0.033
	(0.434)	(0.445)	(0.438)	(0.536)

+ p<0.10; *p<0.05; **p<0.01; ***p<0.001 (two-tailed tests)

Table 5: Log-odds of believing that admitting privileges requirement will make abortion
safer (n=1185)

**
*
*
**

+ p<0.10; *p<0.05; **p<0.01; ***p<0.001 (two-tailed tests)

M1	M2	M3	M4
0.833 ***	0.410	0.380	0.572
(0.197)	(0.329)	(0.322)	(0.498)
-0.025	-0.112	-0.154	-0.449
(0.196)	(0.252)	(0.249)	(0.365)
0.117	-0.320	-0.380	-0.643 +
(0.214)	(0.266)	(0.262)	(0.360)
	0.218	0.274	0.159
	(0.393)	(0.390)	(0.547)
	1.179 *	1.227 **	1.026 +
	(0.466)	(0.460)	(0.597)
-0.565 ***	-0.564 ***	-0.784 ***	-0.217
(0.163)	(0.165)	(0.185)	(0.241)
0.184	0.224	-0.209	-0.177
(0.221)	(0.227)	(0.324)	(0.503)
		0.749 +	0.297
		(0.383)	(0.549)
			4.021 ***
			(0.304)
0.084	0.095	0.112	0.278
		(0.221)	(0.348)
	. ,		. ,
0.786 **	0.755 **	0.748 **	0.466
(0.272)	(0.273)	(0.274)	(0.364)
		, ,	0.361
(0.253)	(0.256)	(0.256)	(0.320)
		, ,	-0.812 *
			(0.374)
			-0.219
			(0.341)
-0.259	-0.234	-0.234	-0.322
			(0.235)
			0.444 +
			(0.238)
(01210)	(00000)	(00002)	(01200)
-0.146	-0.216	-0.241	-0.263
			(0.392)
			-0.013
			(0.285)
			-0.155
			(0.291)
(0.220)	(0.221)	(0.220)	(0.2)1)
0.287	0.247	0.246	0.404
(0.264)	(0.259)	(0.257)	(0.327)
	(0.20)	(0.207)	(0.527)
	0.461 *	0.475 *	0.454
0.451 *	0.461 *	0.475 *	0.454
	0.461 * (0.212) 0.097	0.475 * (0.212) 0.113	0.454 (0.291) 0.041
	(0.197) -0.025 (0.196) 0.117 (0.214) -0.565 **** (0.163) 0.184 (0.221) 0.786 ** (0.221) 0.786 ** (0.272) 0.695 ** (0.253) -0.697 ** (0.253) -0.697 ** (0.251) -1.026 **** (0.236) -0.259 (0.164) 0.519 ** (0.236) -0.146 (0.256) -0.146 (0.226) -0.148 (0.208) 0.185 (0.220)	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

Table 6: Log-odds of supporting admitting privileges requirement (n=1184)

+ p<0.10; *p<0.05; **p<0.01; ***p<0.001 (two-tailed tests)