

Coming Out in America: AIDS, Politics, and Cultural Change*

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Abstract

The last few decades witnessed a dramatic change in public opinion towards gay people. This paper studies the hypothesis that the AIDS epidemic was a shock that changed the incentive to “come out” and that the ensuing process of mobilization and endogenous political process led to cultural transformation. Using a difference-in-difference empirical strategy, we find that, in accordance with our hypothesis, the change in opinion was greater in states with higher AIDS rates. Our analysis suggests that if individuals in low-AIDS states had experienced the same average AIDS rate as a high-AIDS state, the change in their approval rate from the '70s to the '90s would have been 50 percent greater.

Keywords: Cultural change; AIDS epidemic; LGBT attitudes; public opinion; party politics; presidential elections. JEL: J15, P16, Z13

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Most people think they don't know anyone gay or lesbian, and in fact, everybody does. It is imperative that we come out and let people know who we are and disabuse them of their fears and stereotypes.

—Robert Eichberg, 1993 *NYT*, 8/15/95

1 Introduction

The last few decades witnessed a dramatic change in public opinion towards gay people.¹ As shown in Figure 1, while in 1973 on average 20% of individuals thought that it was “not wrong at all,” or only “sometimes wrong,” for same-sex adults to have sexual relations, by 2016 this proportion had increased to 59%. Why did these opinions change so radically?

Answering this question requires a theory regarding why culture changes. In general, change requires a “shock” – e.g., to technology or institutions, or in the form of new information that affects beliefs themselves – that changes incentives. Our hypothesis is that the AIDS epidemic, associated in the '80s and early '90s with being a gay man, changed the relative payoff from being “in the closet” and increased the net benefit associated with collective action. The AIDS epidemic unified the gay community behind an urgent common cause, strengthening existing organizations and creating new ones capable of mobilizing people and of lobbying politicians for change. Thus, for the same “punishment,” more gay people were willing to come out, to be politically active, thereby making it easier for others to do the same and, over time, generating a new equilibrium.

The political system responded to the increased organizational presence of the gay community. Mainstream political parties started to take positions on gay-related issues which they had previously been mostly moot on. The 1992 presidential election was a key year which saw, for the first time in a presidential campaign, gay-related issues being raised and fought over. The Republican and Democratic parties took openly opposing positions

¹We use the term “gay” to refer to both gays and lesbians. When we wish to refer to a gay male we explicitly include the word “man.”

over the ban of gays in the military and the debate intensified once Bill Clinton was elected, culminating in the “compromise” solution of “don’t ask, don’t tell.” These debates both served to inform individuals as to where their party stood on these issues and to stimulate conversations about these topics among people more generally.

As is clear from Figure 1, around 1992 there is a sharp upward jump in the share of people who approve of same-sex relations. This, we believe, is the result of the political debates in 1992-93 and the greater coverage of gay-related issues in the mainstream media. Although these were national events, our hypothesis is that their impact was higher in those states that were more exposed to the AIDS epidemic. Our paper investigates this hypothesis using a difference-in-difference empirical strategy. We differentiate across three time periods – prior to AIDS, during the AIDS epidemic but before the 1992 presidential election, and after the presidential election – and show that states with higher AIDS rates experienced a greater change in opinion precisely in the third period.² The variation in the AIDS rate across states can be thought of as proxying for a range of things that would ultimately lead to variation in opinion change in response to a national debate and to the greater salience of gay-related issues. In particular, it is likely to be positively correlated with the share of gay men, the degree of mobilization, the openness of a community, or the number of friends and acquaintances that came out after the onset of the AIDS epidemic.³

We find that in the nineties, states with higher AIDS exposure increased their approval of same-sex relationships by an additional 5.5 percentage points over states with low AIDS exposure, relative to the seventies. This suggests that if low-AIDS states had been exposed to the same treatment as individuals who lived in high-AIDS states, their opinion change during that period would have been 50 percent higher. Using various measures of individual political identification and ideology, we find that political parties also played an important role in opinion change. Variation in the extent to which states were exposed to AIDS, nonetheless remains significant.

²In this sense, the analysis follows a strategy similar to that of Alsan and Wanamaker (2017) that uses the timing of the public revelation of the unethical Tuskegee (syphilis) experiment conducted by the US Public Health Service between 1932 and 1972, as a treatment on black men’s trust of the medical system.

³Garretson (2018) independently develops a related thesis. He stresses that greater contact of gay individuals with others produced a change in people’s emotions towards gay people, in accordance to the theory of “affective liberalization.”

We explore an alternative hypothesis for the change in opinion which is that the increased approval of same-sex relationships was part of a more general process of opinion evolution regarding civil liberties. We conclude that, while people’s views of gay *rights* evolved in line with their views on civil liberties more generally, people’s increased approval of *same-sex relations* was not part of that process. We also explore the gender gap in opinion which finds women more favorable in the nineties than their male counterparts. Our result – that women are responsible for the cross-AIDS groups variation in response – is intriguing. We investigate a few hypotheses for the gender asymmetry but ultimately, in part due to data limitations, cannot identify the exact mechanism at work and it may simply be the result of women caring more than men about their children.⁴

Our paper contributes to a small but growing literature on cultural change.⁵ As noted previously, culture can change because there is new information broadly speaking. For example, La Ferrara, Chong and Duryea (2012) and Jensen and Oster (2009) show that television programs, by portraying alternative role models or positive views of family life with fewer children, affected attitudes towards domestic violence and outcomes such as fertility and school enrollment in Brazil and India. Fernández (2013) develops a model of intergenerational learning about the true cost (to marriage, psyche, children’s outcomes) of women working that generates endogenous changes in social beliefs. She shows that the calibrated model does a good job of reproducing 120 years of married women’s labor force participation in the US. Furthermore, as shown in Bursztyn, González and Yanagizawa-Drott (2018) in the context of Saudi Arabia, common knowledge can play an important role. In their experiment, when men were made aware of their neighbors’ higher than expected degree of approval of working wives, they become more willing to take actions consistent with allowing their own wife to work. At the level of individual beliefs, Giuliano and Spilimbergo (2013) show that living through a recession when growing up is associated with a greater willingness to believe in the role of luck versus effort in determining individual outcomes.⁶

⁴See, e.g., Attanasio and Lechene (2002) and Case and Deaton (1998) for some evidence on this asymmetry.

⁵As the field of economics and culture is relatively new, understandably most of the literature instead has been dedicated to showing that culture matters, relying on the persistence of the latter over time. See Fernández (2011) for a review.

⁶It is also possible that people’s willingness to experiment and learn over time is itself a cultural feature

Policies, by changing incentives, can also change attitudes over time both by increasing the numbers of people who choose the proscribed behavior or again by changing information. For example, Bastian (2017) shows that the introduction of the Earned Income Tax Credit in 1975 incentivized a large influx of mothers to enter the work force and that states with larger EITC responses experienced greater attitude changes towards gender equality after 1975. In the context of West Bengal, Beaman et al. (2009) show that randomized quotas for female village leaders led to women being more likely to stand for, and win, elected positions in village councils after the removal of the quota. Furthermore, these quotas weakened gender stereotypes in the public and domestic spheres.⁷

A number of recent studies explore the determinants of attitudes towards same-sex relations and gay rights more generally. Brodeur and Haddad (2018) traces the prevalence of same-sex couples and positive attitudes towards same-sex relationships to a historical event, namely the gold rush and the related high male to female ratio.⁸ Interestingly, Baranov, De Haas and Grosjean (2018) come to the opposite conclusion: they show that in areas that were heavily male-biased in the 18th and 19th century in Australia, more Australians voted against same-sex marriage.

The introduction of legislation concerned with same-sex partnership and marriage has given rise to a few papers that exploit temporal variation in these policies. For example, Adams and Waddell (2018) use variation in the timing of the legalization of same-sex marriage across US states to study its impact on support for same-sex marriage. They find that these events are associated with greater polarization of public opinion towards gay marriage and same-sex relationships, but not with greater overall support. Aksoy et al. (2018) investigate the impact of same-sex recognition relationship policies across European

that depends on the environment (see, e.g., Giuliano and Nunn (2019) for evidence that greater climatic instability is related to greater willingness to change traditional beliefs).

⁷See also Bau (2019).

⁸Indeed, a growing literature examines how accidental variation in sex ratios is correlated with attitudes, showing that culture adapts to a different environment. For example, Grosjean and Khattar (2018) shows how Australian areas with historically more male-biased sex ratios have more conservative attitudes towards women working today. Similarly, Gay (2018) compares contemporary women residing in the same location in France but born in areas that experienced different military death rates during WWI (which resulted in skewed sex ratios). He finds that women born in departments with higher military death rates are more likely to work. In a related vein, Teso (2014) shows that in places where the slave trade led to a greater ratio of women to men, contemporary women work more. Bazzi, Fiszbein and Gebresilasse (2018) show that counties with historically greater frontier experience (including skewed sex ratios) now exhibit greater individualism and opposition to redistribution.

countries. They find, by way of contrast with the US results, that these policies are associated with improvements in attitudes towards same-sex relationships.⁹ The study of pro and anti-gay sentiment in US newspapers by Manning and Masella (2018) complements this work by showing that the year gay marriages are introduced, there is a large increase in coverage of both pro- and anti-gay sentiment that persists for several years. More relevantly for our analysis, they show that the start of the pro-gay coverage starts with the AIDS epidemic.

The paper proceeds as follows. Section 2 shows some suggestive qualitative and quantitative evidence for the building blocks of our general hypothesis. It shows that over time more people came out, demonstrations became larger, and examines, in various ways the responses of the political system and the media. Section 3 presents our main empirical strategy and results. Section 4 examines the role of political ideology and identification. Section 5 considers an alternative hypothesis for why attitudes changed: the expansion of civil liberties over time. Section 6 examines the role of gender and discusses possible mechanisms. Section 7 presents robustness checks and section 8 concludes. The Appendix contains further details on the data and the methodology as well as some additional results.

2 Setting the Stage: From the AIDS Epidemic to “Don’t Ask, Don’t Tell”

In this section we present evidence in support of the building blocks of our general hypothesis that the AIDS epidemic generated a process culminating in cultural change towards same-sex relationships. Our analysis encompasses the years 1973-2002 as opinion data is not systematically available before 1973 and because the ruling of the Massachusetts Supreme Court in favor of gay marriage in 2002 appears to have set off a new wave of opinion change.¹⁰

Coming Out and Mobilizing

HIV cases were first reported in an announcement in June 5, 1981 when the Center for Disease Control (CDC) published a Morbidity and Mortality Weekly Report (MMWR)

⁹See also Kenny and Patel (2017) for a cross-country analysis.

¹⁰See Adams and Waddell (2018).

describing cases of a rare lung infection in five previously healthy gay men.¹¹ That same year the NY Times published an article entitled “Rare Cancer Seen in 41 Homosexuals.” By the end of that year, 270 AIDS cases had been reported, 121 of these had died, and the term “gay cancer” had entered the public discourse.¹² The number of new cases increased rapidly over the next few years, reaching its maximum in 1992 (see Figure 2).¹³ By the end of 1992, an estimated 93,000 Americans had died of AIDS.¹⁴ To place this number in perspective, note that the number of American deaths in the Vietnam war was less than two thirds of this number – 58,200.

The seventies had not been a period of gay activism, with some exceptions at the local level. The organizations formed in the wake of the Stonewall Riots had mostly become inactive. As Garretson (2018) notes, “Although they,... provided a payoff for their members in terms of fostering positive identities and building communities, the extensive political involvement they required of their members was not sustainable.” The AIDS epidemic changed this. The absence of a cure, and the fact that at this time AIDS was primarily a disease affecting gay men, united and mobilized the gay community behind a common cause.¹⁵ Peer pressure and the perceived value of participating in gay marches and protests increased, as vividly illustrated in the slogan “silence = death.”¹⁶ This period saw the growth of important national societies that worked to mobilize individuals and resources such as The Task Force (established in 1973), the Gay Men’s Health Crisis (1982), TAG (or Treatment Action Group, 1991), or ACT UP in NYC founded by Larry Kramer in 1987. The greater mobilization of the gay community is evident in the number of people who attended the National March on Washington for Lesbian and Gay Rights over the years.

¹¹The MMWR is the CDC’s “primary vehicle for scientific publication of timely, reliable, authoritative, accurate, objective, and useful public health information and recommendations” as quoted from the CDC website. See <https://www.cdc.gov/mmwr/about.html>.

¹²See <https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline>.

¹³Azidothymidine was introduced in 1987 as the first treatment for HIV. In 1997, highly active antiretroviral therapy (HAART) became the new treatment standard. It caused a 47 percent decline in death rates. See <https://www.avert.org/professionals/history-hiv-aids/overview>

¹⁴Centers for Disease Control and Prevention (CDC) (1993)

¹⁵By 1992, men accounted for 89% of all AIDS cases and it was the leading cause of death for men between the ages of 25-44. The cases among men mostly attributed to same-sex relations: with 64% sex with other men, 20% injecting drug use, 7% from both, and 3% heterosexual contact. Source: Centers for Disease Control and Prevention (CDC) (1993).

¹⁶Posters appeared in NYC with “the Nazis’ pink triangle inverted on a black background over the words ‘SILENCE = DEATH.’ ” (Sullivan (2016)).

Whereas the first march on Washington in 1979 (i.e., prior to the AIDS epidemic) drew an estimated 75,000 people, the second march in 1987 attracted between 200,000-300,000 people, and the third march in April 1993 was estimated to be between 800,000 and 1 million.¹⁷ While it could be argued that being a member of a group associated with a fatal disease might have led to gay people becoming more reticent about disclosing their sexual orientation, having HIV-positive friends, lovers, and family members and perhaps eventually developing the disease oneself, on the other hand, decreased the value of remaining silent and hidden.¹⁸ Groups such as ACT UP used innovative, strategically confrontational tactics (e.g. pouring fake blood over themselves) that maximized media attention and targeted the FDA, the NIH, and the US government.¹⁹

The deaths of public figures such as Rock Hudson (1985), Liberace (1987), Robert Mapplethorpe (1989), Keith Haring (1990), and Freddie Mercury (1991) from AIDS made it clearer that being a gay person was not confined to some small group in society. Although we know of no data prior to mid-80s that would allow one to quantify how “out” individuals were to their friends, family, and community, we are fortunate in that Newsweek conducted polls in the '80s and '90s that asked whether the individual had “a friend or acquaintance who is gay or lesbian.”²⁰ Figure 3 shows the evolution of the proportion of individuals who state that they have a gay friend or acquaintance. On average, around 26% of the sample claimed to have a gay friend/acquaintance in the mid 1980s, this grew to 47 % in 1994, and stabilized at around 60% by the end of the '90s.²¹

¹⁷Source: “75,000 March in Capital in Drive To Support Homosexual Rights: ‘Sharing’ and ‘Flaunting,’” *New York Times*, Oct 15, 1979. “200,000 March in Capital to Seek Gay Rights and Money for AIDS,” *The New York Times*, Oct. 12, 1987, and Ghaziani (2008).

¹⁸Of course, one could always argue that the individual would be better off free-riding off the efforts of others, but to the extent that increased stakes makes solidarity more compelling, one would expect greater participation. Had the consequences of being known to be gay been more dire, e.g., had individuals been quarantined, this might well have induced greater silence on sexual orientation. In the end, the relative cost vs benefit is an empirical matter and in this case it clearly led to more people coming out.

¹⁹See ? for an excellent account of how both mainstream and more radical activists challenged the medical, pharmaceutical, and government institutions.

²⁰We used the earliest available evidence we could find. The data comes from Newsweek (PSRA) and covers the years 1985, 1986, 1994, 1996, 1997, 1998, and 2000. The answer to the question above is coded as 1 if the respondent claims to have a friend or acquaintance who is gay and 0 otherwise. Although we could not obtain data for 1983, the Roper Center had the averages from the poll conducted by Gallup for Newsweek, and kindly provided it to us.

²¹In 2016, according to a Pew Center report, 87% of Americans claim to know a gay person. See <http://www.pewforum.org/2016/09/28/5-vast-majority-of-americans-know-someone-who-is-gay-fewer-know-someone-who-is-transgender/>.

Regressing whether an individual has a gay friend/acquaintance (a zero-one dummy) on a set of individual characteristics (sex, race, education and ten-year age categories) yields the following estimated coefficients:

$$Friends_{it} = \underset{0.150}{(.030)} + \underset{(0.016)}{0.250} \times Post_{it} + \underset{(0.015)}{0.100} \times Female_{it} - \underset{(0.026)}{0.018} \times Black_{it} +$$

$$\underset{(0.029)}{0.001} \times Other_{it} - \underset{(0.027)}{0.005} \times HsGrad_{it} + \underset{(0.028)}{0.137} \times SomeCol_{it} + \underset{(0.027)}{0.258} \times ColGrad_{it} + \hat{\beta} \times Agecat_{it} + \hat{\epsilon}_{ist}$$

where *Post* is a dummy variable that equals zero if the year is 1985 or 1986 and equals one if the year is 1994, '96, '97, or '98. Note that both women and more educated individuals are significantly more likely to have gay friends. The coefficient on *Post* shows that people were 25pp more likely to have a gay friend in the '90s than in the '80s. This provides evidence that more people were coming out over time.

Although it would be instructive to examine whether states with greater exposure to AIDS also saw a larger increase in the proportion of people with more gay friends/acquaintances, unfortunately, state identifiers in the Newsweek polls are only available in 1985 and 1986. It is possible, however, to at least provide a snapshot suggestive that more people were out in higher vs lower AIDS states. Classifying states according to their cumulative AIDS rate at the end of 1992 into high, medium and low, the percent of individuals with gay friends/acquaintances is 32.8, 23.9, and 19.3, across these AIDS categories, respectively.²²

The Reaction of Political Institutions

The competitive nature of the democratic electoral system – the constant search for funds and votes – helped ensure that the increased mobilization of the gay community was also mirrored in the formal political arena. As noted by the NY Times journalist Jeffrey Schmalz (known for his trailblazing reporting on the AIDS epidemic): “it is clear that homosexuals have crossed a threshold, becoming an integral part of American political life. On Election Day, they are expected to exceed the Jewish turnout of four million voters, with some estimates gauging their number as high as nine million. Scared into action by

²²These calculations were done by merging data from both years and keeping all states with at least 20 observations, yielding a sample of 24 states. The mapping from cumulative AIDS rates (from CDC data) into the three categories is explained fully in the next section.

AIDS, drawing on lessons of AIDS organizing and fund raising, they have learned how to play the game...”²³

The increased political presence of the gay community is particularly evident in 1992. That year - a presidential electoral year – was a key year for the gay community in a variety of ways. As discussed in Brewer (2003), Hertzog (1996), and Walters (2003), it was at this point that the Republican and Democratic presidential candidates took clearly opposing views on a variety of gay-related issues, especially that pertaining to the existing Pentagon ban on gay men serving in the military.²⁴ The Democratic party openly courted the gay vote, with all five of the leading Democratic contenders endorsing a repeal of the ban on gays in the military. For the first time, the platform of the Democratic Party not only promised to reverse “the Bush Administration’s assault on civil rights enforcement” and to “provide civil rights protection for gay men and lesbians” but also promised “an end to Defense Department discrimination” whereas the Republican Party platform stated “Unlike the Democrat Party and its candidate, we support the continued exclusion of homosexuals from the military as a matter of good order and discipline.” Prior to this, the only mention of gay people in party platforms had been in 1984 when the Democratic platform stated its opposition to “Violent acts of bigotry, hatred and extremism aimed at women, racial, ethnic and religious minorities, and gay men and lesbians” and promised to “work vigorously to address, document, and end all such violence.”²⁵ The prominence of gay-related issues during the electoral campaign was followed by intense controversy over the pentagon ban on gays in the military once Bill Clinton was elected, culminating in the “compromise” resolution of “don’t ask, don’t tell” in late 1993.²⁶

The opposing party platforms signalled a much more profound debate than the specific issues they mentioned. As explicated in a New York Times Magazine article by J. Schmalz

²³Schmalz (1992). Schmalz goes on to quote Rahm Emanuel, then the Clinton campaign’s national finance director, who opines “The gay community is the new Jewish community. It’s highly politicized, with fundamental health and civil rights concerns. And it contributes money. All that makes for a potent political force, indeed.”

²⁴Department of Defense directive 1332.14 explicitly stated “homosexuality was incompatible with military service,” for the first time in 1982.

²⁵See <https://www.presidency.ucsb.edu/documents/app-categories/elections-and-transitions/party-platforms> for party platform texts.

²⁶The knowledge that gay people had become politically acceptable, at least to the Democratic Party, could in itself have helped changed opinions. This may be an important mechanism as shown in Bursztyn, González and Yanagizawa-Drott (2018).

in October of 1992, “Strictly speaking, this is a battle about specific issues, like whether homosexuals have a right to equal job opportunities or to serve in the military...but it is really a bigger and more complex fight over whether America can accept homosexuality, over whether it is O.K. to be gay.”²⁷ 1992 was the year that political parties took on the battle, implicitly, of whether being a gay person was socially acceptable, socially endorsable.

The evolution of campaign donations by the Human Rights Campaign Fund vividly illustrates the greater presence of gay-friendly organizations in the political arena. The Human Rights Campaign Fund (now called the Human Rights Campaign) was the first gay and lesbian political action committee in the United States and also the largest.²⁸ As shown in Figure 5, the organization’s political contributions increased over the years (shown as totals over each 2-year donation cycles), peaking dramatically in 1992 in which it contributed approximately 1.5 million dollars.²⁹

As can be seen in Figure 1, aggregate public opinion appears more or less constant at around 20% in the '80s.³⁰ It is only around 1992 that there is a sharp rise in the percentage of individuals who approve of these relationships.³¹ The explicit positions taken by the political parties and, as we will go on to show, the attention given to gay-related issues during that same time suggests that people were led to rethink and reevaluate their positions regarding the morality of same-sex relationships. As shown by Bartels (2002), individual party identification is a powerful force in opinion formation and having the two major parties come out with divergent positions may well have precipitated a process of reassessment of social beliefs.³²

One can also see the increased political prominence of gay-related issues in the bills introduced to Congress. Figure 4 shows the share of bills particularly relevant to the gay community introduced in the Senate and in the House, separately, by year.³³ As can be

²⁷Schmalz (1992).

²⁸See hrc.org.

²⁹See the Appendix for the details on the dataset we used to construct this figure.

³⁰Although Stonewall in 1969 is considered a pivotal event in gay history and may have changed people’s approval of same-sex relationships after 1969, there is clearly no time trend in the data as of start in 1973 and for the next two decades.

³¹The GSS polls are in 1991 and 1993, so we cannot pinpoint the year beyond the indicated interval.

³²Whether this is because debates and media attention lead people to learn or simply because of political “priming” is a matter of ongoing debate (see, e.g., Lenz (2009)).

³³We used the data compiled by Adler and Wilkerson (N.d.) in their Congressional Bills Project. We searched the keywords: “gay”, “orientation” in conjunction with “sex”, “same-sex”, “sexual preference”,

seen in the figure, there is a large increase in the share of gay-related bills introduced in the House in 1993 (purple line - dots). On average, 4.7 gay-related bills per year were introduced in the House between 1973-1992; in 1993 this number jumped to 16. The increase in the share of gay-related bills in the Senate (orange line - diamonds) comes slightly later (1998).

The increased congressional interest is a reflection of greater pressure (votes and money) from the gay community and/or increased voter interest. The evolution of campaign donations by the Human Rights Campaign Fund vividly illustrates the greater presence of gay-friendly organizations in the political arena. The Human Rights Campaign Fund (now called the Human Rights Campaign) was the first gay and lesbian political action committee in the United States and is also the largest.³⁴ As shown in Figure 5, the organization's political contributions increased the years (2-year donation cycles), peaking dramatically in 1992 in which it contributed xxx dollars (measured in real 2015 dollars).³⁵

The Reaction of the Media

In the nineties, Americans mostly got informed by watching the news on TV.³⁶ Figure 8 shows the evolution of the number of evening news stories on the “big-three” news networks of ABC, CBS, and NBC that were devoted to i. the gay community (purple line - dots), ii. the AIDS epidemic (yellow line - diamonds), and iii. the intersection of the preceding two (green dashed line).³⁷ The left-hand y-axis counts the number of stories related to gay people whereas the right-hand y-axis counts the news stories related to AIDS/HIV.³⁸

”hiv”, and ”homosex.” Lastly, we manually searched all remaining entries in topic 202 under civil rights (which is described as “Includes issues related to sex, gender, and sexual orientation discrimination”) for relevant legislation. We use the topic coding system of the Policy Agendas Project/Comparative Agendas Project, see <https://www.comparativeagendas.net/pages/master-codebook>. The number of gay-relevant bills is expressed as a share of all bills introduced to the House or the Senate, respectively, that year.

³⁴See hrc.org.

³⁵See the Appendix for the details on the dataset we used to construct this figure.

³⁶According to data from national surveys conducted by the Pew Research Center for the People & the Press as of 1993, television was the primary source of news over this period. When allowed to give two sources from television, newspapers, radio, magazines, and internet, 83% gave television as their primary source in 1993 and it was fairly stable over time – in 2002 the equivalent number was 82%. See <http://www.people-press.org/wp-content/uploads/sites/4/2013/08/8-8-2013-Media-Attitudes-Topline-for-Release-1.pdf>.

³⁷For news coverage we used the Vanderbilt Television News Archive, restricting our search to news items on ABC, CBS and NBC. For gay-related issues we used the keywords gay(s), lesbian(s), LGB(T), bisexual and homosexual. We obtained a total of 1249 news items. For the AIDS epidemic we searched for AIDS or HIV. We obtained 2787 news items. We manually checked for false positives. A total of 248 news items cover both the AIDS epidemic and the gay community.

³⁸The AIDS epidemic appears for the first time in our sample in October 6th 1982 – two months after the

As can be seen clearly from the figure, the latter was a dominant event all throughout the '80s.³⁹ An American household watching only one evening news in 1987 would have been exposed to close to one news segment covering the AIDS epidemic every three days. Next, turning to news stories relevant to the gay community more generally, it is clear from the figure that 1992 saw a large increase in news stories whose total was then doubled in 1993.⁴⁰ It is important to note that this increase is not driven by AIDS-related news as can be seen by the decrease in the intersection of the two categories (the green dashed line). In 1993, a household that watched one evening news program would have seen a story related to gay people around every other day as opposed to, say, once every ten days on average throughout the eighties.

The evening news figure clearly illustrates the greater national prominence of gay-related issues. The opposing positions taken by the two main political parties and the intensity with which these issues were covered lend credence to the idea that people were led to debate and reevaluate their views on same-sex relationships over this period.

Next, we turn to newspaper coverage of gay-related news. We use NewsBank to select all newspapers that have coverage going back in time. Unfortunately, there are very few newspapers that are covered prior to the late 1980s, and even then the number of papers are fewer than fifty. We restrict the years to 1987-1994 (four years prior to the presidential election and 4 years inclusive of the election). In total, our sample consists of 45 newspapers with continuous coverage over this time period. Figure 7 shows how the coverage of gay-relevant articles as a share of all articles evolved over time.⁴¹ As can be seen in the figure, the share of gay-relevant articles increased starting in 1990 and peaking in 1993.

This section has presented evidence suggestive of our hypothesis that the AIDS epidemic generated a process culminating in cultural change towards same-sex relationships. Over

CDC coined the term AIDS.

³⁹On average from 1982 through 1992, 159 stories per year covered the AIDS epidemic. At its peak in 1987, 339 news stories were devoted to this issue. By way of contrast, the year that followed the fall of the Berlin wall in 1989 saw the same three networks covering this topic with 423 news stories.

⁴⁰There were 82 and 161 news stories related to the gay community in 1992 and 1993, respectively.

⁴¹The figure plots the average share of gay-related articles in each year, where the average is calculated over the individual newspapers' share for that year. Gay-related articles are all those found by searching for the keywords gay men, gay community, gay marriage, gay people, lesbian, sexual orientation, sexual preference, lgb, homosexual, bisexual, and same sex.

time more people came out, demonstrations became larger, and the political system and the media responded. The next section is dedicated to showing that opinion change regarding same-sex relationships differs in the nineties according to the incidence of AIDS.

3 Cultural Change and AIDS

In this section we start by presenting our main data set and empirical strategy. We then conduct a difference-in-difference analysis to show that states with a higher exposure to AIDS had a greater change in opinion in the nineties relative to the seventies. As discussed previously, the variation in the AIDS rate across states can be thought of as proxying for a range of things that would ultimately lead to variation in opinion change. In particular, it will be positively correlated with the number of gay men, the degree of mobilization, the openness of a community, the salience of gay-related issues, or the number of gay friends and acquaintances. Thus, what we are capturing in our difference-in-difference analysis is how these characteristics mattered differentially over these time periods, particularly before and after the 1992 presidential election. We will show that there was a positive impact only in the later period along the AIDS rate dimension.

Data and Empirical Strategy

To analyze the evolution of public opinion, we use individual responses to the GSS question: “Is it wrong for same-sex adults to have sexual relations?.” We chose to focus on this question as it gets to the *heart of people’s moral views regarding same-sex relations* unlike, say, questions regarding the rights of gay people. This question could be answered in four different ways: “not wrong at all,” “sometimes wrong,” “almost always wrong,” and “always wrong.” In our benchmark specification we code “Not wrong at all,” and “sometimes wrong,” as approving of same-sex relations and code the other two options as disapproving of same-sex relations. We denote this dummy variable as SameSexApp, which takes the value 1 if an individual approves and 0 if they disapprove.⁴²

We examine the change in opinion at the state level between 1973-2002. The starting point is defined by the first year in which poll data is available. The analysis ends in

⁴²The robustness analysis considers alternative specifications.

2002 as in 2003 the Massachusetts Supreme Court held that the state constitution required it to legally recognize same-sex marriage. As noted in Adams and Waddell (2018) and Aksoy et al. (2018) in the US and European contexts respectively, changes in same-sex marriage laws are themselves associated with changes in opinion. Furthermore, as noted by Manning and Masella (2018) in the US, these laws were accompanied by a dramatic increase in coverage of both pro and anti-gay sentiment in US newspapers. This could have once again made gay-related issues a “kitchen-table” discussion topic, and led to changes in expressed public opinion. Indeed, as can be seen in Figure 1, there is a clear upwards trend in opinion starting in the mid 2000s.

The analysis distinguishes among three time periods: (i) before AIDS (pre-1981), (ii) the AIDS-crisis period (1981-1991), and (iii) the post-1992 presidential election period (1992-2002). We refer to these periods loosely as the '70s, '80s, and '90s, respectively. The '90s period is defined to coincide with the debate accompanying the presidential election visible in the large spike in news coverage that starts in 1992 as discussed previously. This corresponds to the discontinuity in opinion seen in Figure 1 for the years 1991-93. The discontinuity in opinion can be measured. The yearly opinion change between 1991-'93 is over 2.5 times the standard deviation in opinion change (where the latter is calculated over the period 1973-2002). This is significantly larger than the change over any other year. Using the Supremum Wald test for a single break point with an unknown break year (see Perron (2006)), it identifies a break at 1992, rejecting the null hypothesis of no break at $p=0.0000$.⁴³

We use all five waves of the GSS that asked this question prior to 1981 for the '70s, all 6 waves post-1991 as the '90s, and the 8 waves between 1981 and 1991 for the '80s.⁴⁴ We include all individuals between the ages of 18 and 69 that reside in states with observations in all three time periods.⁴⁵ Our final sample consists of a total of 21,727 observations over

⁴³To run this test, we first fill in the missing years by linear interpolation from the adjacent years. We use the `sbsingle` command in STATA.

⁴⁴The '70s consists of waves 1973,'74,'76,'78,'80; the '80s consists of waves 1982,'84,'85,'87,'88,'89,'90,'91; the '90s consists of waves 1993,'94,'96,'98,'00,'02.

⁴⁵No individuals from Hawaii, Idaho, Nevada, Maine, Nebraska and New Mexico were sampled by the GSS for this question prior to 2003. Alaska, Delaware, Iowa, Kentucky, Mississippi, North Dakota, New Hampshire, Rhode Island, South Dakota, Utah, Wyoming, and Vermont are dropped as they have no observations in one of the three periods. We also drop DC.

32 states.

To construct a measure of exposure to the AIDS epidemic, we use publicly available data from the Center of Disease Control (CDC) to calculate the cumulative AIDS rate, per 100,000 state population, by the end of 1992.⁴⁶ Our choice of year and the use of a cumulative rather than an annual measure is guided by the desire to minimize the under-reporting error that was more prevalent at the beginning of the AIDS crisis. Furthermore, 1992 is the closest year prior to our '90s period.⁴⁷ Note that one should not worry about reverse causality, i.e., that *changes* in attitudes “cause” a higher AIDS rate. First, we are measuring the cumulative AIDS rate in 1992. Second, it takes close to a decade for the severe symptoms of HIV to manifest (see Bacchetti and Moss (1989) and Osmond (1998)). We refer to the rate as the CAR92 and it ranges, for the states in the sample, from a low of 13.25 for Montana to a high of 279.3 for NY, with a cross-state mean of 71.2. Figure 10 shows the geographic distribution of CAR92 over US states.

Our analysis divides states into one of three categories $g \in \{H, M, L\}$ according to the level of the cumulative AIDS rate (i.e., CAR92): High-AIDS states (H) which are those with $CAR92 \geq 86$: California, Connecticut, Florida, Georgia, Louisiana, Maryland, Massachusetts, New Jersey, New York, and Texas; Medium-AIDS states (M) with $49 < CAR92 < 86$: Arizona, Colorado, Illinois, Missouri, Oregon, Pennsylvania, South Carolina, Virginia, and Washington; and Low-AIDS states (L) with a $CAR92 \leq 49$: Alabama, Arkansas, Indiana, Kansas, Michigan, Minnesota, Montana, North Carolina, Ohio, Oklahoma, Tennessee, West Virginia, and Wisconsin. This categorical division follows natural breaks in the data as can be seen in Figure 9. The cross-state average CAR92 by group is 138.1, 59.7, and 29.8, respectively. Our final sample is distributed as follows: 32.6 % in the low-AIDS group, 39.3 % in the high-AIDS group, and the remainder in the medium-AIDS group.⁴⁸

Figure 11 shows the evolution over time of the SameSexApp, differentiating by high

⁴⁶See Table 1 in the CDC HIV Surveillance Report 1992 (Feb 1993). That table lists, by state, both the number of AIDS cases reported that year, the annual rate implied per 100,000 population that year, as well as the cumulative total of state cases by the end of 1992. We use these numbers to back out the state population and then construct the cumulative total rate, per 100,000, as of the end of 1992.

⁴⁷The results are not driven by the particular choice of year as the correlation of the AIDS rate across years is very high (e.g., the rank correlation between AIDS rates in 1989 and 1992 is 0.99, $p = 0$.)

⁴⁸The cutoff for the three AIDS groups are the ones we used to define high, medium, and low AIDS states (for the entire US) in the analysis of friends and local newspaper coverage in the section II.

versus low-AIDS states. As is clear from the figure, public opinion stayed fairly constant over the '70s period and appears to have followed parallel trends across both groups.⁴⁹ The gap between high and low-AIDS states decreased over the '80s, mostly due to opinion in high-AIDS states becoming more negative, and both high and low AIDS states saw a jump in approval over the '90s, especially the former.

Our baseline specification is:

$$y_{ist} = \kappa + \sum_{\tau} \sum_g \gamma_{g,\tau} D_{ig\tau} + \sum_{\tau} \beta_{\tau} D_{i\tau} X_{i,t} + \delta_s + \delta_t + \epsilon_{ist}$$

where $y = \text{SameSexApp}$, $D_{ig\tau}$ is a dummy = 1 if i was polled in year $t \in \tau$, $\tau \in \{'70s, '80s, '90s\}$, and lived in state $s \in g$, $g \in \{H, M, L\}$; it takes the value 0 otherwise. $D_{i\tau}$ is a dummy = 1 if i was polled in year $t \in \tau$. κ is a constant, δ_s and δ_t are state and time fixed effects, respectively. X is a vector of individual controls which, depending on the specification, includes age in 10-year intervals (18-29, 30-39,...,60-69), gender, race (white, black, and other), education categories (less than high school, high school graduate, some college, college graduate and above), six household real-income categories measured in 1986 dollars, and six residential categories.⁵⁰ All individual characteristics are interacted with $D_{i\tau}$, allowing their impact to vary by time period. Standard errors are clustered at the level of the state.

Our main coefficient of interest is $\gamma_{g,\tau}$ which measures the impact, by time period, of each of the three different AIDS categories on beliefs.⁵¹

Difference-in-Difference Results

Table 1 presents the results using the entire sample. All specifications include state and year fixed effects and progressively include an increasing number of individual controls as indicated. As can be seen in the table, women and men have similar views in the '70s but a gap opens up afterwards. In the most complete specification in column (3), women

⁴⁹In Section 7, we show that our results are robust to the inclusion of a state-level time trend.

⁵⁰The income categories are: below 10,000, between 10-20K, between 20-30K, between 30-50K, between 50-75K, above 75K. The residential categories are: large city (over 250,000), medium city (between 50,000-250,000), suburb of large or medium city, unincorporated large or medium city, smaller towns/areas (below 50,000), and open country.

⁵¹In addition to the categorical analysis, we also use an alternative continuous specification with $\log(1 + \text{CAR92}_s)$. As shown in section 7, the results are robust to this alternative specification.

are some 3.5 percentage points more likely to approve of same-sex relationships than men in the '80s and around 6 percentage points more favorable in the '90s. Blacks, on the other hand, were already some 6 percentage points more likely to disapprove of same-sex relationships in the '70s (in the most complete specification) than were Whites, and the gap between the two grows over time, becoming an additional 9.7 percentage points greater in the '90s. Lastly, note that although the gap between high and low AIDS states does not change in the '80s relative to the '70s, this is no longer the case in the '90s. At that point, high-AIDS states become an additional 5.5 percentage points more favorable towards same-sex relations than low-AIDS states. Over this time period, low-AIDS states increased their approval from an average of 15.7% in the '70s to an average of 26.6% in the '90s. The analysis suggests that if these individuals had experienced the same average AIDS rate as those who lived in high-AIDS states, the change in their approval rate from the '70s to the '90s would have been 50 percent greater.

The morality/immorality of same-sex relations has historically been of concern to many religions.⁵² One may wonder whether people's religious beliefs played an important role in the change in views towards same-sex relations. To investigate this question we make use of the fact that the GSS asks individuals "In what religion were you raised?" The answer to this question, as opposed to one that asks about an individual's current beliefs, has the advantage, furthermore, of not suffering from reverse causality, i.e., it is not the person's views of same-sex relationships that is causing them to grow up in a particular religion. We code religion as Protestant, Catholic, Jewish, None, and Other following the categories in the GSS.

Table 2 shows the results of including the religion in which an individual was raised as an additional control. Column (1) reproduces the main regression for ease of comparison. Column (2) introduces religion and, as is clear from the table, the coefficients on the AIDS categories barely change although both Catholics and those with no religion become more positive (relative to Protestants) in the '80s and '90s relative to the '70s. This could be the result of the emergence of the Moral Majority organization led by Jerry Falwell in 1979 which was vehemently anti-gay and helped mobilize Evangelical Christians. Next,

⁵²See, e.g., Long (2013).

although marital status is an endogenous variable, we include it in column (3). In column (4) we have both religion and marital status. Including these variables, which are often significant (e.g., both singles and Catholics are more positive in the '90s), does not change the coefficients associated with the high-AIDS category.

4 Cultural Change and Institutions: The Role of Politics

The 1992 presidential election made gay-related issues part of the mainstream debate and increased their salience. As shown by Bartels (2002), individual party identification is a powerful force in opinion formation and having the two major parties come out with divergent positions might have led people to rethink their opinions and to a sharp discontinuity in national opinion polls regarding the acceptability of same-sex relationships. In this section we examine whether individuals' political identifications in the '90s "explains" the variation in opinion change and whether AIDS categories still play a role.⁵³ We examine the effect of politics in three different ways. We use an individual's party identification, an individual's proclaimed degree of liberal vs conservative political views, and lastly a state level measure of political leanings.

To begin with, we ask how an individual's party identification is correlated with approval of same-sex relations and how this changed over the time periods. The GSS asks individuals whether they think of themselves as a Republican, Democrat, or Independent, with answers being "strong Democrat," "not strong Democrat", "strong Republican," "not strong Republican," and three categories of Independent: "Independent, Independent near Democrat, and Independent near Republican." We group the responses into three: the two democrat categories become Democrat, the two republican categories become Republican, and the three independent categories become Independent.⁵⁴ Figure 12 shows the evolution over time of the share of SameSexApp for the two main party identifications.⁵⁵

⁵³Karol (2012) attributes the divergent views across parties to LGBT activism in the Democratic party and the growth of the Christian right in the Republican party. See also Haider-Markel and Meier (1996).

⁵⁴We do a robustness check that recategorizes the two "near" independent responses as democrat and republican, respectively in Appendix Table 1, columns 1-2.

⁵⁵Interestingly, both Desmet and Wacziarg (2019) and Bertrand and Kamenica (2018) show, using data from the GSS, that differences in social attitudes by political ideology have increased over the last four decades, widening especially in the '90s.

Table 3 introduces individuals' party identification in the regression of SameSexApp in the most complete specification. The first column omits the AIDS categories. Note that both Democrats and Independents were more likely to support same-sex relationships already in the '70s. The approval gap between Democrats and Republicans widens over time. In the '90s, the gap between the two is such that Democrats become 16pp more likely to approve than Republicans relative to the gap that already existed in the '70s. Independents, on the other hand, do not see the same dramatic increase vis-a-vis Republicans. Column (2) reintroduces the AIDS categories in the main specification. Note that the coefficients on party identification barely change. The high-AIDS category remains positive and statistically significant, albeit at the 10% level.⁵⁶

Of course, an individual's identification with a party is not exogenous and in particular it is not exogenous to the party's position on gay-related issues. It is hard to disentangle whether democrats became more likely to approve of same-sex relations relative to republicans or whether there was an inflow or outflow of individuals across party lines at least in part in response to how the latter positioned themselves with respect to gay-related issues.⁵⁷

To provide further evidence, we use two alternative approaches that are more independent of how the political parties changed their positions towards the gay community in the 1992 election and thereafter. We use an individual's more general political ideology (Polviews) as captured in the numerical response to being asked their political views as placed on a range from "extremely liberal"—point 1—to "extremely conservative"—point 7. We group answers in the range 1-3 as liberal, 4 as moderate, and 5-7 as conservative. An alternative approach is to address this question with a relatively more exogenous identifier of political affiliation by categorizing states as Republican vs Democrat according to which party obtained the greatest percentage of the state vote in the prior presidential election of 1988.⁵⁸ Figure 13 shows the evolution of the share of individuals who approve of same-sex relationships by liberal vs conservative political views and Figure 14 shows the same for Republican vs

⁵⁶The findings on the importance of political party identification are in line with those of (Garretson, 2018) using a different data set (ANES).

⁵⁷As shown by ?, the salience of an issue may cause individuals to exaggerate political parties' difference of opinion on the topic, leading people who approved of same-sex relationships to align more closely with the Democratic party and vice versa.

⁵⁸These were calculated using data from David Leip's Atlas of U.S. Presidential Elections. <http://uselectionatlas.org>.

Democratic states. Both figures show a sharp increase in approval from 1991 to 1993.

Column (3) in Table 3 introduces political views – liberal and moderate with conservative as the excluded category – and Column (4) reintroduces the AIDS categories. As can be seen in the table, those with liberal political views were already some 18pp more favorable than conservatives in the '70s, with this gap increasing by an additional 13pp in the '90s. The AIDS categories remain significant. Column (5) introduces the state political affiliation as described previously – Pres Dem – that takes a 1 if the democratic presidential candidate (Michael Dukakis) received more votes than the republican one (George H. W. Bush). Column (6) reintroduces the AIDS categories. As is clear from the table, individuals from Democratic states became some 5-6pp more favorable than those from Republican states in the '90s relative to the '70s but this differential was already present in the '80s. The effect of belonging to a high-AIDS state remains similar to what it was without the party control – around 5pp more favorable in the '90s.

The findings presented in this section present suggestive evidence that politics played an important role in the evolution of attitudes towards same-sex relationships. Other factors, as captured in the AIDS categories, remain significant drivers.

5 An Alternative Hypothesis: Civil Liberties

We have interpreted the cultural change towards same-sex relationship in the '90s as resulting from an endogenous process of increased public attention to gay-related issues that was put in motion by the AIDS epidemic. An alternative explanation might be that the US was undergoing a period of increased support towards civil liberties and that this is reflected in changing attitudes.

The presence of a civil liberties subject in the core module of the GSS is useful to explore this alternative hypothesis as it asks a given set of questions over time related to the civil liberties of different groups. Figure 15 illustrates the evolving nature of attitudes by plotting the share of the population that approved of keeping (as opposed to removing) a book in the public library written by groups considered socially undesirable (in particular, racists, communists, militarists, and atheists). Note that the shares of public opinion in

favor of keeping the book are, in general, increasing over this time period in keeping with the hypothesis of increasing support for civil liberties.

In what follows, we show: i. attitudes towards civil liberties and gay-related civil liberties move jointly; ii. the AIDS epidemic does not affect attitudes towards gay-related civil liberties once other civil liberties are included; iii. Furthermore, the evolution of civil liberties and the change in attitudes towards same-sex relationships do not co-move.

Constructing the Indices

To investigate the evolution of gay rights and civil liberties we use the answers to these questions to construct two indices via a principal components analysis (PCA): (i) a Gay Civil Liberties index and (ii) a Civil Liberties index.

The GSS asks: “What about a man who admits that he is a homosexual?,” and follows up with these questions: i. Suppose this admitted homosexual wanted to make a speech in your community. Should he be allowed to speak, or not? [Answers: Allowed - Not Allowed]; ii. Should such a person be allowed to teach in a college or university, or not? [Answers: Allowed - Not Allowed]; and iii. If some people in your community suggested that a book he wrote in favor of homosexuality should be taken out of your public library, would you favor removing this book, or not? [Answers: Removed - Not Removed].

These same questions were asked about other groups: racists, communists, atheists, and militarists.⁵⁹ Each group is referred to in the survey starting with the statement “There are always some people whose ideas are considered bad or dangerous by other people.” and followed by the appropriate modification. So, for racists: “Consider a person who believes that Blacks are genetically inferior;” for communists: “Now, I should like to ask you some questions about a man who admits he is a Communist;” for atheists: ”For instance, somebody who is against all churches and religion;”and lastly for militarists: “Consider a person who advocates doing away with elections and letting the military run the country.”

In total, we have 12 variables.⁶⁰ We recoded the answer to these questions, creating

⁵⁹The questions on atheists and communists are asked for the same years as SameSexApp. The militarist and the racist questions are not asked in 1973 and 1974. This implies that the civil liberties indices we build will not have values in the missing years.

⁶⁰These variables are named librac, libcom, libath, and libmil, for the questions related to the book in the library, colrac, colcom, colath and colmil, for the questions related to teaching in a college or university and spkrac, spkcom, spkath, and spkmil, for the questions related to public speaking.

dummy variables for each such that the variable takes a value of 1 when the individual gives a pro-civil-liberties answer, i.e., “allowed” or “not removed;” a value of 0 is given to the answers “not allowed” or “removed.”

Figure 16 shows the share of the population supporting civil liberties for “homosexuals.” As a comparison, we also plot the evolution of the share of the population approving of same-sex relationships. It is interesting to note the contrast between the support for gay-related civil liberties and approval of same-sex relationships. Note that whereas the latter remained fairly flat until the early '90s, the former steadily increased throughout the entire period. The initial levels of support in the '70s are also markedly different: support for gay-related civil liberties was over 50% whereas same-sex relationships had only 20% approval. Lastly, while there is clearly an important discontinuous jump in approval for same-sex relationships that occurs in 1992-93, this is either smaller, earlier, or non-existent for the three indicators of sentiments towards gay-related civil liberties.

Using principal component analysis (PCA), we construct an index of gay-related civil liberties (GCL) using the answers to the three questions related to gay civil liberties. The index is the first component from the PCA, as it is the only component with an eigenvalue greater than one. Similarly, we construct two Civil liberties (CL) indices – the first two components of the 12 variables above with eigenvalues above one.⁶¹ We denote these CL1 and CL2, respectively. Table 4 summarizes the loadings, the eigenvalues, and the share of the total variance explained by GCL, CL1, and CL2 (columns 1-3).

Civil Liberties Analysis

To study the relationship between the GCL index and CL1 and CL2, we use the following specification:

$$GCL_{ist} = \kappa + \sum_{\tau} \sum_g \gamma_{g,\tau} D_{ig\tau} + \sum_{I,\tau,n} \phi_{\tau} CLn_{ist} D_{\tau} + \sum_{\tau} \beta_{\tau} D_{i\tau} X_{i,t} + \delta_s + \delta_t + \epsilon_{ist}$$

where CLn , $n = 1, 2$ is one of the two indices for civil liberties. We allow a flexible specification where the effect of these indices can change with each decade. The other controls are those in the main regression and we cluster standard errors at the state level.

⁶¹See the Appendix for details.

Column 1 of Table 5 shows the results of the regression specification omitting the civil liberties indices. Column 2 excludes the AIDS categorical variables but includes CL1 and CL2. Lastly, column 3 controls for both the AIDS categories and the CL1 and CL2. As is clear from the table, the civil liberties indices have explanatory significance for the evolution of GCL along the decades. Contrasting column 2 with column 1, one can see that including these indices instead of the AIDS categories is associated with a jump in the adjusted R squared, from 22% to 49%. The AIDS categories (column (3)), on the other hand, are statistically insignificant once the CL indices are included in the regression.

Turning next to examining whether the change in SameSexApp is driven by the same factors as civil liberties, column 4 reproduces the results from the standard regression of SameSexApp whereas column 5 introduces CL1 and CL2 in addition. As can be seen in column 5, although there is a negative relationship between SameSexApp in the '80s (CL1) and the '90s (CL2), this does not diminish the importance of the AIDS categories in the '90s which actually have a greater impact.

The analysis permits one to conclude that the relationship between the AIDS epidemic and the approval of same-sex relationships is not a consequence of underlying trends in civil liberties. It makes clear that whether a group or group or category is considered immoral is very different from excluding that group from particular civil liberties.

6 Cultural Change and Gender

A persistent feature of the preceding findings is the sizable gender gap that exists in the approval of same-sex relationships, with women being substantially more favorable.⁶² As can be seen in Figure 18, there was no real gender difference in opinion in the '70s, but one began to emerge in the '80s, and was definitively entrenched in the '90s. By 2002, women are on average 8.7 percentage points more favorable than men. This section studies the gender differential and explores various potential explanations for its existence, in particular differences in gay friendships and machismo.

⁶²There is also a racial gap that exists in the '70s and widens in the '90s. Unfortunately, the sample size by state is too small to permit a meaningful analysis.

The Gender Differential

Figure 19 shows the opinion gap in high vs low-AIDS states for men and women separately. In both cases, there is clearly a gap that persists over the '70s and '80s and that, for women, widens in the '90s relative to the '70s. Columns (1)-(3) and (4)-(6) in Table 6 repeat the specifications of columns (1)-(3) in Table 1 but for men and women separately. As is clear across specifications, there is no significant additional effect in the '80s or '90s periods of residing in a high vs low-AIDS state for men. The story for women, however, is different. The approval gap between women in high vs low-AIDS states grows by some 8 percentage points in the '90s relative to the '70s.⁶³ There is also an increase in the gap between medium and low-AIDS states of some 5pp. The effect of the cumulative AIDS rate in the '80s is negative for both sexes in the high-AIDS states relative to the low-AIDS states, but statistically insignificant at conventional levels. Note that women in low-AIDS states went from an average approval rate of 16.1% in the pre-AIDS period to an average approval rate of 20.1% in the '90s. Had these women been subjected to the same intensity of treatment, this suggests that their approval would have been 28% instead, a significantly large difference.

One can investigate this asymmetry further by asking, for each group of states, whether men and women reacted differently over the three time periods. Figure 20 plots the coefficients (the β_τ 's) in the following regression which is run separately for individuals in low vs high-AIDS states: $y_{ist} = \kappa + \sum_\tau \beta_\tau female_{ist} \times D_{i\tau} + \sum_\tau \gamma_\tau D_{i\tau} X_{i,t} + \delta_s + \delta_t + \epsilon_{ist}$, where female is a dummy with the obvious interpretation. All other variables are as defined in our previous regression analysis. As shown in the figure, women in the '80s appear to be more positive than their male counterparts in both high and low AIDS states. In the '90s this is no longer the case: it is really only women in the high-AIDS states that are reacting differentially in the '90s. These are the women who would have seen the consequences of AIDS up close, who would be most likely to have gay friends, and who would have been more likely to have witnessed the mobilization that accompanied the epidemic. They are at the forefront of cultural change.

⁶³We can reject $\gamma_{H,90}^{female} = \gamma_{H,80}^{female}$, $p = 0.0003$. We can also reject equality between the male and female coefficient in the '90s for the high-AIDS states, i.e., that $\gamma_{H,90}^{female} = \gamma_{H,90}^{male}$, $p = 0.018$ whereas we cannot reject equality in the '80s, $\gamma_{H,80}^{female} = \gamma_{H,80}^{male}$, $p = 0.776$.

We next turn to examining whether the same gender asymmetry exists for politics. Conducting the same analysis as in section 4 and comparing the results for men and women (columns (1) and (4)) of Table ??, it can be seen that male democrats were some 7pp more in favor of same-sex relations in the '70s than their fellow republicans whereas women show no partisan gap during that time period. The gap between male democrats and republicans increases by around 8pp in the '90s relative to the '70s, whereas the increase in the partisan gap for women in the '90s is even more dramatic – 22pp. Thus, along the dimension of political party identification, both sexes react in the '90s but women do so significantly more strongly. As before, residing in a high-AIDS state still has a statistically and economically significant effect in the '90s for women, although slightly reduced in magnitude, and not for men.

Next, we use political views and the presidential election of 1988 as we did previously in section 4. The results are shown in columns (2) and (3) for men and (5) and (6) for women. It is interesting to note that along this dimension of political alignment there are no significant gender differences. Both sexes react similarly in the '90s by becoming 10-14pp more in favor of same-sex relationships when they have a liberal view as opposed to conservative. The AIDS categories remain significant for women but not for men.

Lastly, as shown in Appendix Tables 3 and 4, repeating the exercise that distinguishes between the evolution of civil liberties, gay-related civil liberties, and the effect of the AIDS epidemic, we find that gay-related civil liberties and civil liberties follow a similar process for both the male and female samples.⁶⁴ For men, there is no effect of the AIDS categories on the approval of same-sex relationships whereas for women the relationship remains robust even after controlling for the civil liberties indices.

Exploring Potential Drivers

We have shown gender asymmetry in the approval of same-sex relationships. Why are women reacting more than men in states with higher exposure to the AIDS epidemic in the '90s? What does this tell us about the mechanism by which cultural change is occurring?

Note that the gender asymmetry across AIDS groups rules out an explanation whereby

⁶⁴Columns (3)-(6) in Appendix Table 1 repeat the robustness analysis regarding political categories for each sex.

the rate of same-sex approval increased disproportionately in high-AIDS states in the '90s because of gay men migrating there (say, in order to access better health services). An alternative hypothesis could be that AIDS disproportionately affected men negatively. Could it be that men in high-AIDS states reacted more negatively, thereby effectively canceling the otherwise positive reaction that one sees among women? Comparing columns (3) and (6) in Table 6, not only is the coefficient statistically insignificant in the '80s, but there is also no gender asymmetry in this time period along this dimension.

An alternative explanation is that women had more gay friends and, as a consequence, once debates on gay-related issues become more prominent, were more likely to change their opinions and become more favorable. We use the regression below to examine the evolution of gay friends/acquaintances by sex and year:

$$friend_{igt} = \sum_{\tau} \sum_{g} \gamma_{g\tau} (D_{i\tau} \times sex_{ig}) + \beta X_{i,t} + \epsilon_{igt},$$

where $D_{i\tau}$ stands for a dummy that takes the value 1 if the response was in year τ , and sex_{ig} is a vector of male and female dummies F, M that take value 1 if respondent i is of sex $g = F, M$ and zero otherwise. We also control for education categories (less high school, high school grad, some college, and college grad +), age categories (18 – 29, 30 – 39, 40 – 49, 50 – 64, and 65+), and race (White, Black, Asian, and Other).⁶⁵ Figure 21 graphs the estimated coefficients $\gamma_{g\tau}$, providing evidence that women had around 10% more gay friends than men after controlling for other characteristics, in a statistically significant manner until the late nineties.⁶⁶

Why would women have more gay friends? This could be the case for a variety of reasons. First, it could be that people in general relate differently to women than to men and are more willing to confide in the former.⁶⁷ Second, it could be that women have larger networks than men and thus mechanically are more likely to know a gay person. Third, it could simply be reverse causality: because women are more sympathetic to same-sex

⁶⁵These regressions do not include state identifiers as these are absent from the data except for 1985 and 1986.

⁶⁶See the table below the graph for the estimated difference by year and test of its significance.

⁶⁷See, e.g., Bell (1981) and Fehr (1996).

relationships, they are more likely to have gay friends/acquaintances.⁶⁸ Nonetheless, it is interesting to explore whether gender differences in friendships or in reaction to friendships can account for the differences in their changes in opinions over the '90s.

As expressed earlier, the friendship data suffers from the absence of data pre-AIDS epidemic and especially from that absence of state identifiers in any years other than '85 and '86. This severely limits the range of hypotheses we can test. Nonetheless, we can ask whether friendships at the state level in the mid '80s is a significant driver of the change in the approval of same-sex relationships for either men or women. In order for friendships to be able to explain the gender differential in reaction to AIDS categories, either the proportion of men with gay friends would need to be relatively insensitive to the AIDS category and/or male friendships should not matter as much as female ones to how the genders feel about same-sex relationships.

To examine this question, we construct, by state and gender, a variable equal to the proportion of individuals who have a gay friend/acquaintance. Given that we have only two years of data ('85 and '86), we restrict the sample to states with at least 15 observations by gender. This yields a total of 11 states and a sample of 5613 men and 6808 women. We run the usual SameSexApp regression.⁶⁹

As shown in Table 8 there is no statistically significant relationship, for either gender, between friends and the change in opinion over time (in particular, the coefficient on Friends \times '90s is insignificant).⁷⁰ We could ask, nonetheless, how important is the difference in friendship by gender by using the estimated coefficients on friends in columns (1) and (2) combined with the average share of friends in high vs low-AIDS states. The difference in the average share of friends for men in high vs low-AIDS states is 8.8pp; the equivalent for women is 22.3pp – much larger.⁷¹ Thus the coefficients translate into a difference in approval of same-sex relationships in the '90s (relative to the '70s) of 1.4pp for men and 1.2pp for women in high vs low-AIDS states. This exercise suggests that neither the gender

⁶⁸As shown by Herek and Capitano (1996) using data from 1990-92, individuals who have interpersonal contact with gay people are more likely to express positive views towards the latter.

⁶⁹We also restricted the periods to the '80s and '90s and obtained similar results.

⁷⁰Including the AIDS category variable for this sample is not meaningful as there is insufficient variation (all but 4 states belong to the high category).

⁷¹This exercise is at most suggestive: our sample has only 2 states in the low-AIDS category.

difference in how gay friends/acquaintances translate to approval of same-sex relationships (the coefficients on Friends \times '90s), nor the differential size in friendships, by gender and AIDS categories, is able to explain why the genders react to AIDS categories differently in the '90s. Note, however, that the nature of the data – both in terms of its representativeness across states and in its lack of time variation – does not permit stronger conclusions and severely limits the scope of the investigation.

An alternative hypothesis for the gender asymmetry across AIDS categories is that men, but not women, reacted negatively to the blurring of gender roles that could be associated with greater acceptance of gay men. If this negative reaction occurred where AIDS was higher, this might be responsible for not finding a significant effect of the AIDS category in the '90s for men. A plausible reason why this negative reaction would be greater in high-AIDS states is that the gay community would be more visible and more mobilized there.

To examine this hypothesis we can use whether a man's mother worked as an "exogenous" proxy for how "macho" he might be.⁷² *Ceteris paribus*, one expects a man whose mother worked to be less threatened by the blurring of traditional gender roles.⁷³ To this end, we use the answers to two questions in the GSS, *mawork* and *mawrkgrw*. The GSS question associated with the variable *mawork* asked "Did your mother ever work for pay for as long as a year, after she was married?" and was asked every year from 1973 to 1993. The GSS question associated with the variable *mawrkgrw* asked "Did your mother ever work for pay for as long as a year, while you were growing up?" and was asked every year from 1994 to 2016. As the two questions do not overlap in years in which they were asked, we code the answers "yes" as one and "no" as zero without indicating which question was used and call this variable *Mom Work*.

We examine this issue using a triple difference specification, with the main variable of

⁷²As shown in Fernández, Fogli and Olivetti (2004), men whose mother worked while growing up are more likely to be married to a woman who also works, *ceteris paribus*. Presumably, these men have more liberal gender attitudes more generally.

⁷³A different version of a "macho" hypothesis is that men who serve in the military may be more averse to working with gay men. To examine this alternative we used census data to construct a measure of the importance of the military in 1990 by using the percentage of men in the state who work in the military. This variable had the expected negative sign for *SameSexApp* for men, but it was insignificant and small in magnitude and the AIDS variable remained insignificant as well. Results available upon demand. We thank Scott Taylor for suggesting this alternative to us.

interest being the interaction of a man's mother working with the AIDS category in the '90s. If machismo is responsible for the lack of reaction of men in the '90s to the AIDS rate, we should observe a widening difference in the approval rate of sons of working mothers versus sons of non-working mothers in the '90s (relative to the '70s) between the high and low-AIDS categories. Our specification is:

$$y_{ist} = \kappa + \sum_{\tau} \sum_g \gamma_{g,\tau} D_{ig\tau} + \sum_{\tau} \omega_{\tau} D_{i\tau} \times W_{ist} + \sum_{\tau} \sum_g \gamma_{g,\tau}^w D_{ig\tau} \times W_{ist} + \sum_{\tau} \beta_{\tau} D_{i\tau} X_{i,t} + \delta_s + \delta_t + \epsilon_{ist}$$

where W_{ist} is a dummy equal to one if the respondent's mother was working when they were growing up and zero otherwise. Thus $\gamma_{g,\tau}^w$ is a coefficient that measures the differential effect by AIDS group of having a working mother. Lastly, ω_{τ} is a coefficient that measures the differential effect, by time period, of having a working mother.

Column 3 of Table 8 shows the result of this regression for the sample of men. In the '70s, sons of working mothers were more in favor of same-sex relationships: in low-AIDS states by 3.6pp, in medium-AIDS states by 1.6 pp (i.e. 0.036-0.020), and in high-AIDS states by 5.1 pp (0.036+ 0.015), although these differences are not statistically significant. In the '80s (relative to the '70s), the gap between sons of working vs non-working mothers in high versus low-AIDS states increased by 1.58 pp and in the '90s this gap became 2.57pp. So, the gap is greater in the '90s, but this difference is not statistically significant. Note that even if all men had been sons of working mothers, their approval in the '90s in the high-AIDS states would have been only 1.18pp (2.57-1.39) greater than in the low-AIDS states (relative to the gap that already existed in the '70s).

In the medium-AIDS states, relative to the low-AIDS states, the gap between sons of working vs non-working moms increases by a large amount in the '80s relative to the '70s: it is 10.2pp greater. In the '90s, however, this gap shrinks, becoming 3pp. From this we conclude that there is no strong evidence that machismo, at least as measured via mother's work behavior, played an important role in the gender differential in SameSexApp. Although the gap grew for high vs low-AIDS states in the '90s, it is not statistically significant and we do not see the same pattern for the gap in medium vs low-AIDS states.

Lastly, we cannot rule out as a possible explanation that women and men are simply

different. This has been found to be the case in a variety of settings (e.g., reaction to competition, risk aversion, over-confidence), including altruism, though the biological as opposed to cultural influences behind these findings are unclear.⁷⁴ In the specific case of attitudes towards same-sex relationships, if women care more about their children and grandchildren (who could potentially be gay), this might lead them to change their attitudes towards same-sex relationships more than men.⁷⁵ This mechanism would have motivated women to react more in states with a higher exposure to AIDS (and presumably to the gay community).

7 Robustness

In this section we carry out a series of robustness exercises including “accounting” for pre-existing state differences in same-sex approval, introducing state-level time trends, and using an alternative definition of SameSexApp among others. The finding that women became significantly more in favor of same-sex relationships in the '90s in high-AIDS states is robust across all specifications.

Pre-existing State Characteristics

The fact that there are marked differences in approval rates across high vs low-AIDS states already in the '70s (see Figure 19), raises the concern that preexisting state characteristics could be driving the results. Indeed, regressing SameSexApp only on data from the '70s and omitting state fixed effects shows that high-AIDS states had a higher approval rate then. Table 9 presents the result of this regression for the most complete specification of individual characteristics in column (1). Note that women from high-AIDS states are already 7pp more favorable in the '70s.

To the extent that the state-level characteristics responsible for the opinion gap across AIDS groups are constant over time, they are captured in state fixed-effects. To the extent that the opinion gap is driven by individual-level characteristics that are evolving over

⁷⁴See Croson and Gneezy (2009) for a review of the literature and see Giffin (2017) for altruism.

⁷⁵There is evidence suggesting that women care more about their children, at least as demonstrated by how cash transfers are spent when given to wives rather than husbands (see, e.g., Attanasio and Lechene (2002) and Case and Deaton (1998) and evolutionary arguments (e.g. Edlund (2013))).

time, such as income, urbanicity, racial composition, education, etc., these characteristics are included directly in our controls. For characteristics that are not explicitly included, we can attempt to capture them via state-level time trends. We leave this test to the next subsection.

An alternative way to address this concern is to include state characteristics in the '70s that eliminate the preexisting difference in opinion across high versus low-AIDS states. As we are already controlling for individual characteristics, it is illuminating to examine other attitudes in which states varied by AIDS-rate category. A natural hypothesis is that states that were more liberal towards same-sex relations in the '70s also had more liberal attitudes towards sex more generally. Greater tolerance towards same-sex relationships would be simply an additional feature of this more liberal view. The GSS has two questions that were asked already in the 1970s and that seem well suited to exploring this issue, one asking about premarital sex and the other about pornography.

In terms of pre-marital sex, the GSS asks: “There’s been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sex relations before marriage, do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all.” We coded as more liberal (with a dummy that takes the value of one in this case) answers of “only sometimes” or “never” wrong. The other answers are coded as zero. We create a state-level average, Premar70, over the '70s period by averaging individual responses by state.

In terms of pornography, the GSS asks: “Which of these statements comes closest to your feelings about pornography laws? Illegal to all, illegal under 18, legal.” Here we take the answers “legal” and “illegal under 18” as the more liberal responses. Following the same procedure as above, we create the '70s average variable by state, Pornlaw70.

Column (2) of Table 9 introduces the 1970s state-level attitudes-towards-sex variables, Premar70 and Pornlaw70 which, as shown, effectively kills the significance of the AIDS categories in explaining the difference in opinions across women in the '70s. A one standard-deviation increase in Premar70 (0.12) is associated with an increase of about 4.3pp in the probability of approving of same-sex relationships. A one standard-deviation increase in Pornlaw70 (.06) is associated with a 3.4pp increase in the probability of women

approving of same-sex relationships.

We can now ask whether women still respond to the AIDS categories if we include the '70s attitudes towards sex variables (allowing the effect of these to change over the three time periods). This exercise is carried out in columns (3)-(5) of Table 9. As can be seen, introducing these variables does not alter our basic finding: in the '90s the approval gap between women who reside in a high vs low-AIDS state increases by some 8.3 pp. We take this finding as providing evidence that the AIDS category is able to capture an effect on women's opinions that goes beyond the factors that were driving this difference in the '70s.

Other Robustness Checks

Table 10 conducts a variety of robustness tests using the specification with the most complete set of individual controls. Column 1 includes a regional fixed effect, using the US Census regional definitions of Northeast, Midwest, South, and West. Column 2 excludes the state with the highest CAR92 – New York – and Column 3 excludes the state with the lowest CAR92 – Montana. Column 4 employs an alternative definition of SameSexApp. This alternative definition codes any answer other than “it is always wrong” as constituting approval. As can be seen across these four additional robustness tests, the coefficient on the high-AIDS category is statistically significant and its magnitude remains very similar across specifications. Note that in all specifications the racial opinion gap noted in Table 6 persists in the '70s and '90s. Although Figure 19 does not suggest any differential time trend in the pre-period (the '70s), column 5 allows for the possibility that states may be following different trends by including a state-level linear time trend. As can be seen, introducing state time trends increases the coefficient on high-Aids states in the '90s, although the statistical significance decreases slightly. Next, column 6 uses sampling weights (wtssall) provided by the GSS as a final check. As is clear, similar results are obtained, with the coefficient on the high-AIDS states in the '90s now slightly larger.

Lastly, column 7 uses a continuous rather than a categorical specification of the AIDS variable: $\log(1 + CAR92)$. Using \log allows the effect to be non-linear and adding a 1 to CAR92 allows us to compare hypothetical states with no AIDS (or a pre-AIDS world with other exposures to the epidemic). As can be seen in the table, this version of the main

variable is statistically significant at the 5 percent level. To interpret the magnitude of the coefficient on $\log(1 + CAR92) \times '90s$ of approximately 0.04, note that a one standard deviation in CAR92 takes it from its mean of 72 to 125. This implies an increase in women's approval of around 2.4 percentage points. Women's average approval in the '70s was 22.4%; the corresponding figure in the '90s was 39.8%. Hence 2.4 percentage points is around 14 percent of the increase over this time period. Alternatively, if the AIDS epidemic had never occurred, i.e., had CAR92 been zero, the change in women's approval rate would have been around 7.5 percentage points lower. Note that, reassuringly, this estimate is close to the one we obtain when we use the coefficient on the high-AIDS category in the '90s.

8 Conclusion

The last few decades witnessed a dramatic change in public opinion towards gay people. This paper investigates the hypothesis that this resulted from an endogenous process of increased public attention to gay-related issues that was put in motion by the AIDS epidemic. Although there was no real change in public opinion in the first decade following the onset of the AIDS epidemic, we hypothesize that increased mobilization of the gay community combined with the nature of the political process – the need to raise funds and votes – led the Republican and Democratic parties to take opposing positions on gay-related issues, especially on the Pentagon's ban of gay people in the military. These debates and their coverage in the media both served to inform individuals as to where their party stood on these issues and to stimulate conversations about these topics among people more generally, ultimately leading to changes in public opinion.

We show that there is a discontinuity in national opinion regarding the morality of same-sex relationships around 1992. This discontinuity is mirrored in media coverage of gay-related issues, gay-related bills introduced to Congress, and in the party platforms in the Presidential election. As we show, the change in approval of same-sex relationships is greater in those states that were more exposed to the AIDS epidemic. These states would have seen greater mobilization, more people coming out to friends and family, and more court cases regarding discrimination towards people with AIDS or gay individuals in

schools and in the workplace. In the face of a national debate that motivated individuals to dedicate more thought to their positions towards gay people, we would expect opinions to react more precisely in those states with greater direct interaction with the gay community.

Our paper investigates the hypothesis using a difference-in-difference empirical strategy. We differentiate across three time periods – prior to AIDS, during the AIDS epidemic but before the 1992 presidential election, and after the presidential election – and show that states with higher AIDS rates experienced a greater change in opinion precisely in the third period. The variation in the AIDS rate across states can be thought of as proxying for a range of things that would ultimately lead to variation in opinion change. As shown, a perhaps puzzling finding is that only women reacted to the variation in the AIDS rate and that, interestingly, self-identified democratic women reacted markedly more in the '90s than their male counterparts. Although we investigated a few hypotheses for this asymmetry, data limitations do not allow us to identify the exact mechanism at work. One possibility, consistent with other evidence, is that women care more about their children, leading them to be more sympathetic to gay people. Once women understood how universal same-sex attraction is, something that would have happened more in states with a higher exposure to AIDS (and presumably to the gay community), their approval of same-sex relationships changed more in high-AIDS states.

Should one conclude from the findings of our paper that the AIDS epidemic or, more generally, a negative shock to a marginalized group, will lead to positive cultural change towards this group? We think not. In fact, one can easily imagine that had science been less advanced and had the US held a less liberal view of civil rights, the AIDS epidemic could have led to the quarantine of those with the disease and to the persecution of gay men.⁷⁶

The case of gay individuals is special in a variety of important ways. First, feeling attraction towards same-sex individuals transcends class and racial distinctions. When this is combined with a competitive democratic process that incentivizes politicians to obtain money and votes as widely as possible, there is greater potential of seeing this organized group as politically attractive, courting, and responding to its concerns. Second, from the

⁷⁶Identifying AIDS victims with tattoos in the forearms and buttocks was suggested, for example, by William Buckley in a 1986 NYTimes oped piece (Buckley Jr. (1986)).

perspective of, say, a parent who may have a gay child, there may be large gains from society having more accepting attitudes towards same-sex relationships. This is not so, for example, in the case of discriminated racial/ethnic groups or immigrants. Greater acceptance of these groups, at least in the short run, may also generate losses to more privileged groups from greater competition for jobs or schools (e.g. for white males). Third, given the state of economic development in most advanced countries, expectations of a child's duty towards family are lower (including providing them with a grandchild which, in any case, is now technologically and legally feasible in several countries). Nevertheless, the interaction of an exogenous shock with the political process provides important lessons for how cultural change can happen in a relatively short time period that transcend its particular domain.

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Figures

“Is it wrong for same-sex adults to have sexual relations?”

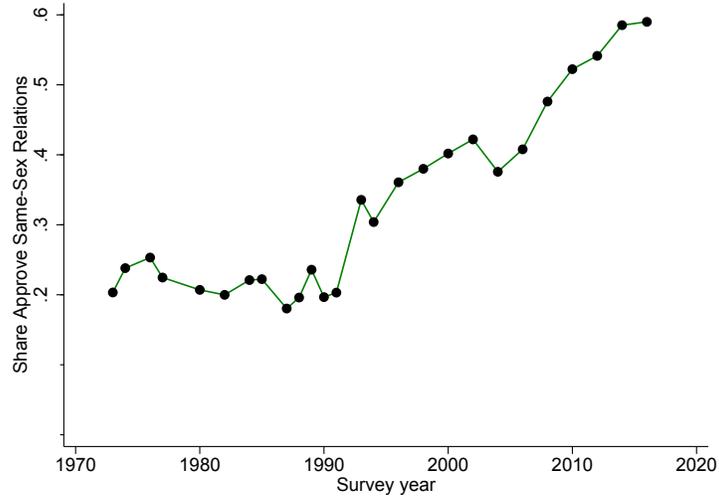


Figure 1

Evolution of share of US population who answered “Never Wrong” or “Sometimes Wrong” to the question “Is it wrong for same-sex adults to have sexual relations?”, from 1972 to 2016. Source: GSS.

**Stage 3 (AIDS) Classifications and Deaths of Persons with Diagnosed HIV Infection Ever Classified as Stage 3 (AIDS), among Adults and Adolescents, 1985–2015
United States and 6 Dependent Areas**

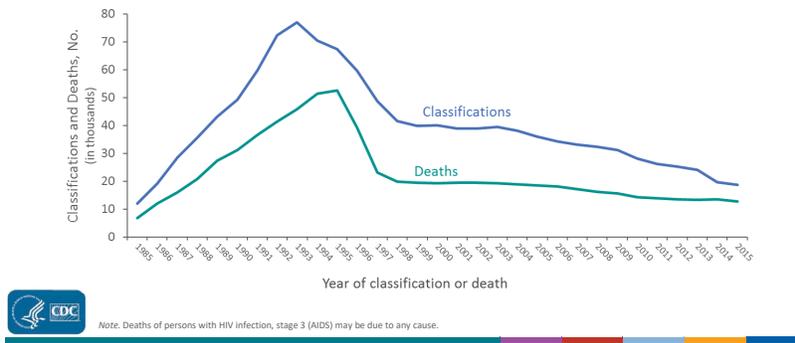


Figure 2

Source: Center of Disease Control (CDC) - HIV Surveillance Report 1992 (Feb 1993).

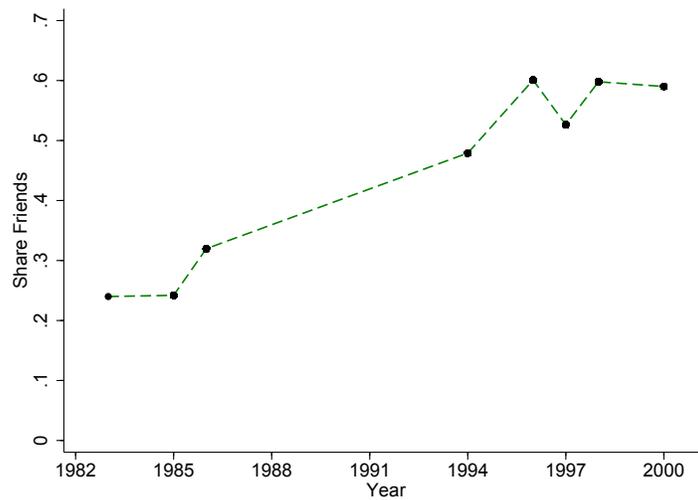


Figure 3

Evolution of share of US Population who answered “Yes” to the question “Do you have a friend or acquaintance who is gay or lesbian” in 1983, 1985, 1986, 1994, 1996, 1997, 1998, 2000. Source: Newsweek.

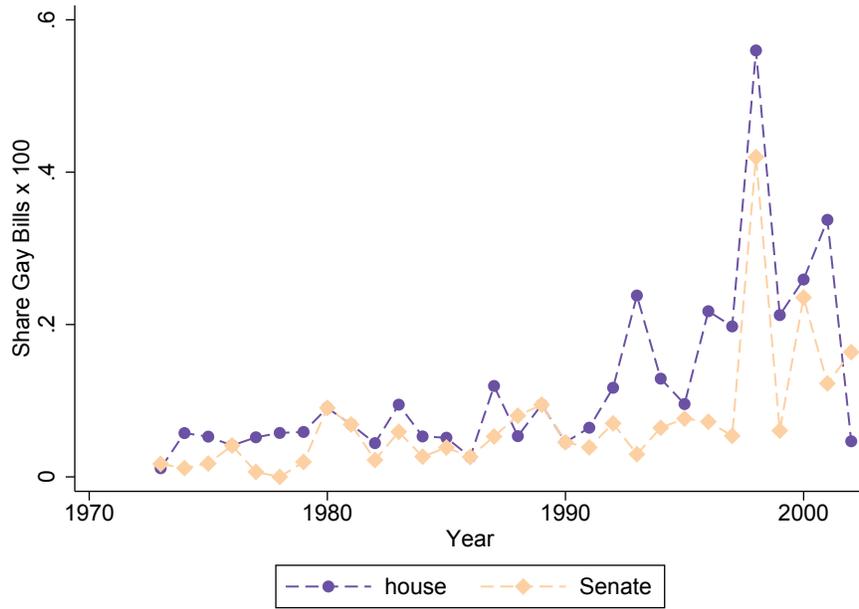


Figure 4
Evolution of the share (times 100) of gay-relevant bills introduced to Congress by year. Data source: DIME.

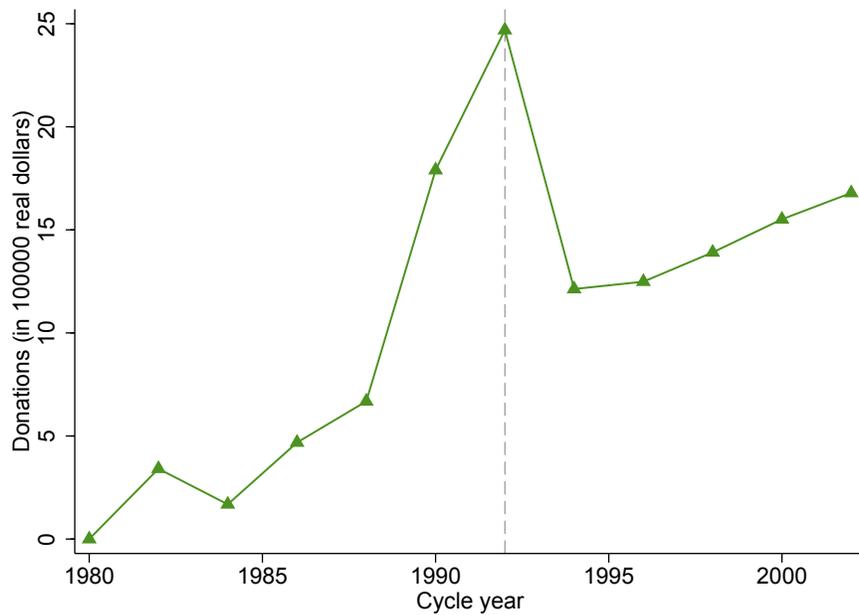


Figure 5
Evolution of monetary donations by the Human Rights Campaign to political campaigns by 2-year election cycles (in 2015 dollars). See the Appendix for more details.

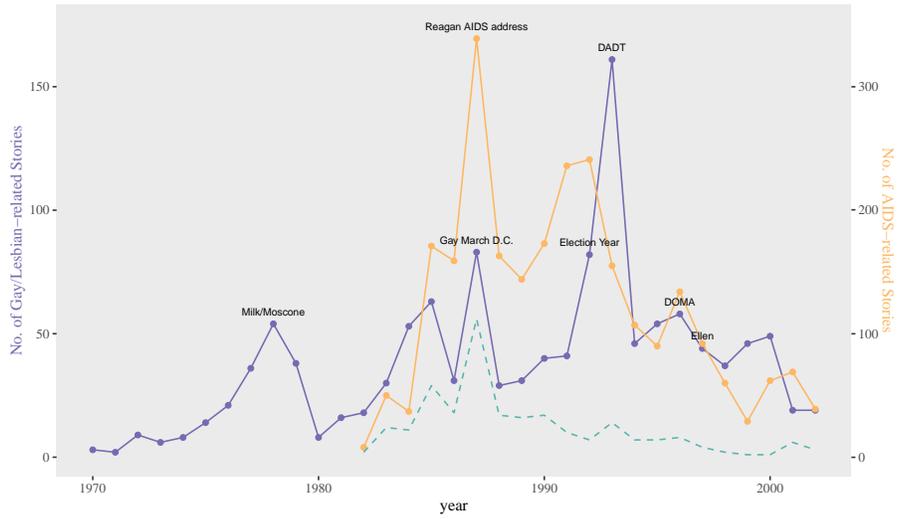


Figure 6

Evolution of the number of evening news stories (ABC, CBS, NBC) related to the gay community (Left y-axis) and AIDS epidemic (Right y-axis). The dashed line shows the number of news stories that appears in both categories (left axis). Source: Vanderbilt News Archive. See the Appendix for more detail.

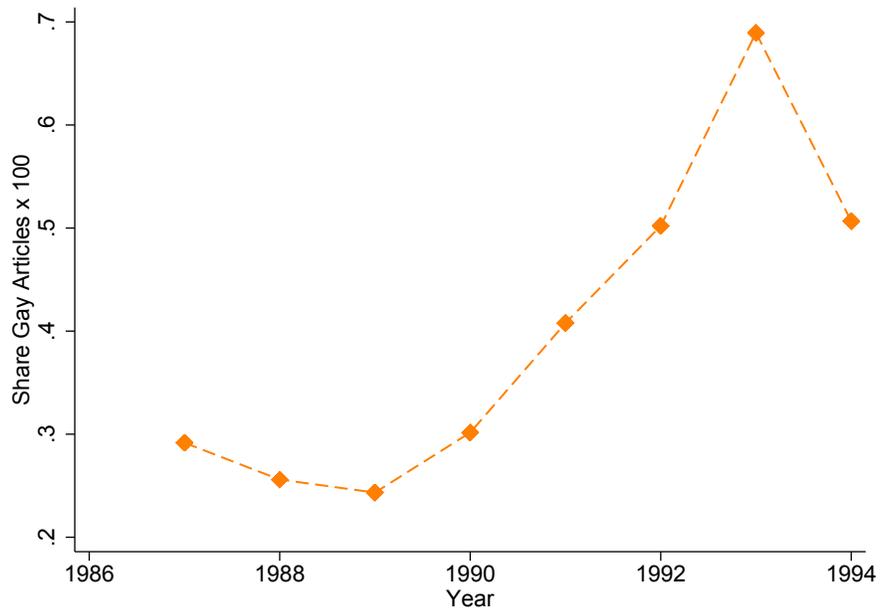


Figure 7

Evolution of the average share (times 100) of gay-relevant newspaper articles.

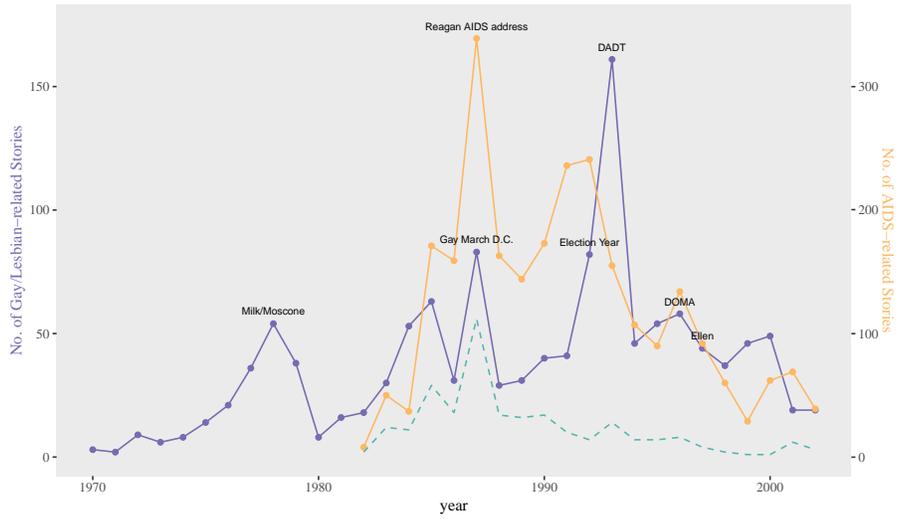


Figure 8

Evolution of the number of evening news stories (ABC, CBS, NBC) related to the gay community (Left y-axis) and AIDS epidemic (Right y-axis). Source: Vanderbilt News Archive. See the Appendix for more detail.

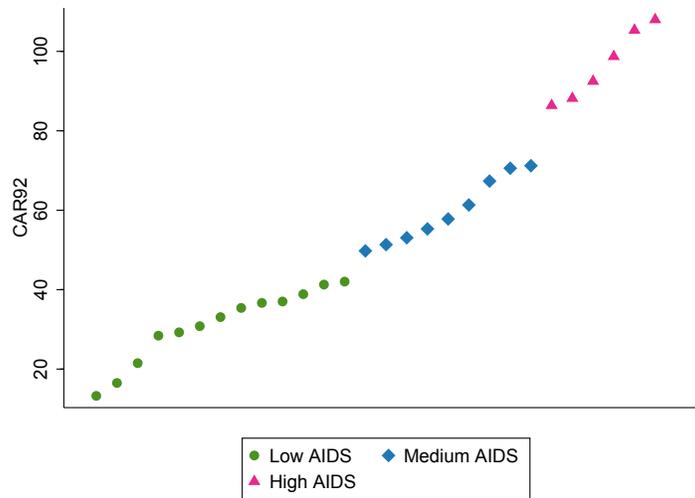


Figure 9

The cumulative AIDS rate, per 100,000 state population, by the end of 1992. The information comes from the Center of Disease Control (CDC) - HIV Surveillance Report 1992 (Feb 1993). The relevant table lists, by state, both the number of AIDS cases reported that year, the annual rate implied per 100,000 population that year, as well as the cumulative total of state cases by the end of 1992. We use these numbers to back out the state population and then construct the cumulative total rate, per 100,000, as of the end of 1992. The plot omits the 4 states with CAR92 above 150: CA, FL, NJ, and NY.

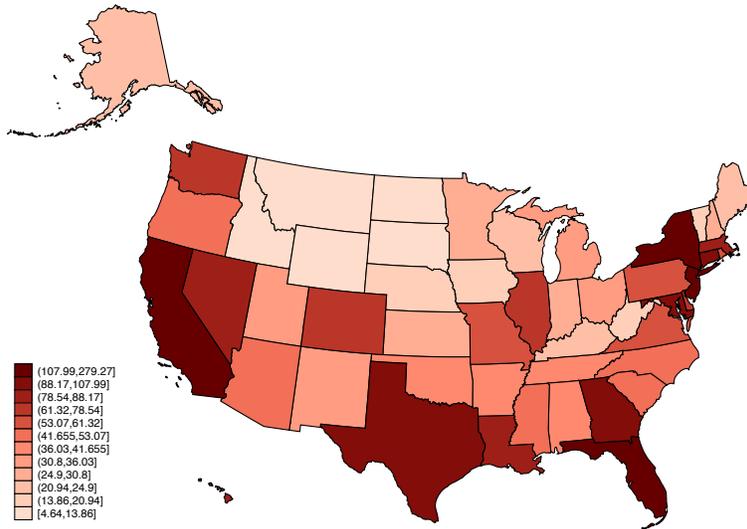


Figure 10
 Source: Center of Disease Control (CDC) - HIV Surveillance Report 1992 (Feb 1993).

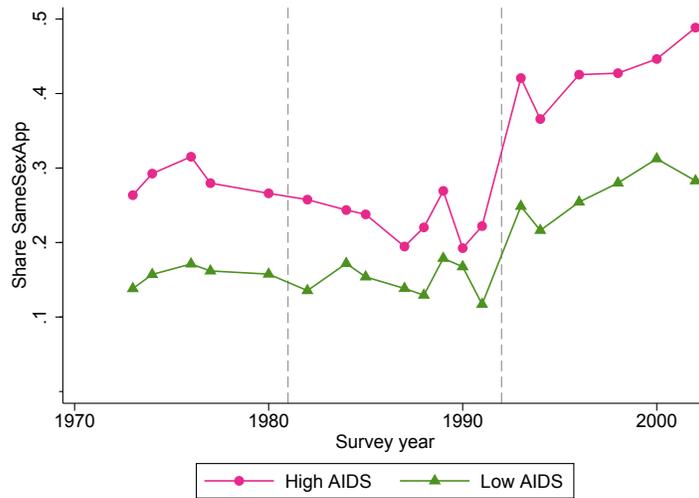


Figure 11

Share of answers “Never/only sometimes wrong” to the GSS question “Is it wrong for same-sex adults to have sexual relations? See text for definition of High vs Low-AIDS categories.

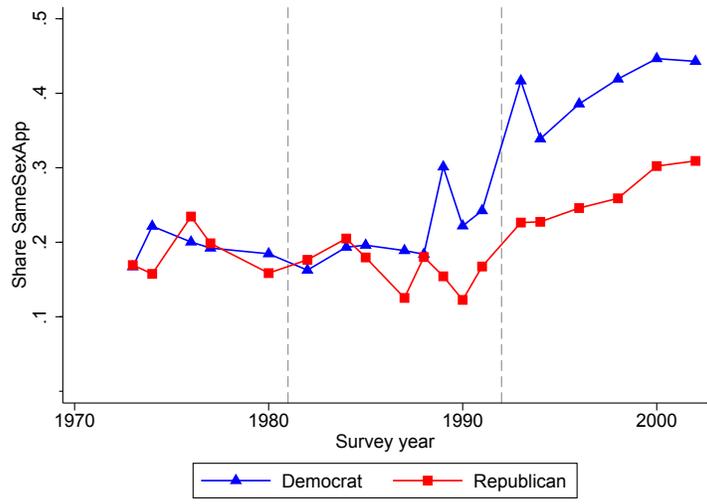


Figure 12

Source: GSS. Democrats include those who answer that they identify as a “Strong Democrat,” and “Not strong Democrat.”; Republican include those who answer “Strong Republican,” and “Not strong Republican.” See text for details.

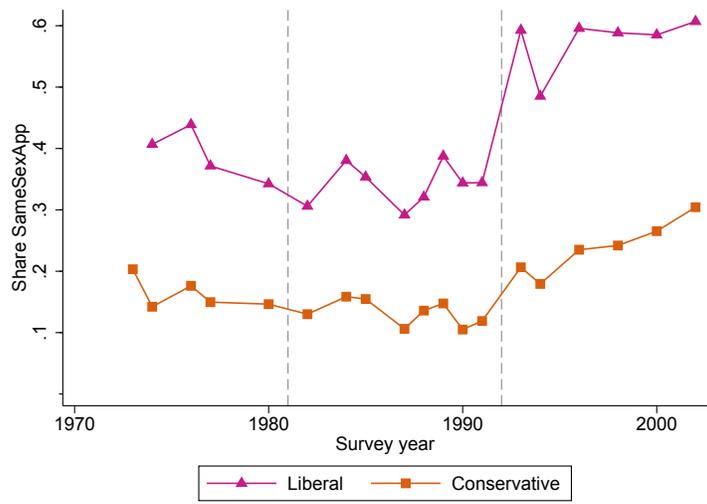


Figure 13

Source: GSS. Democrats include those who answer that they identify as a “Strong Democrat,” and “Not strong Democrat.”; Republican include those who answer “Strong Republican,” and “Not strong Republican.” Liberals include those who answer 1-3 (where 1 is “extremely liberal”), moderates are those who answer 4, and conservatives answer 5-7 (where 7 is “extremely conservative”). See text for details.

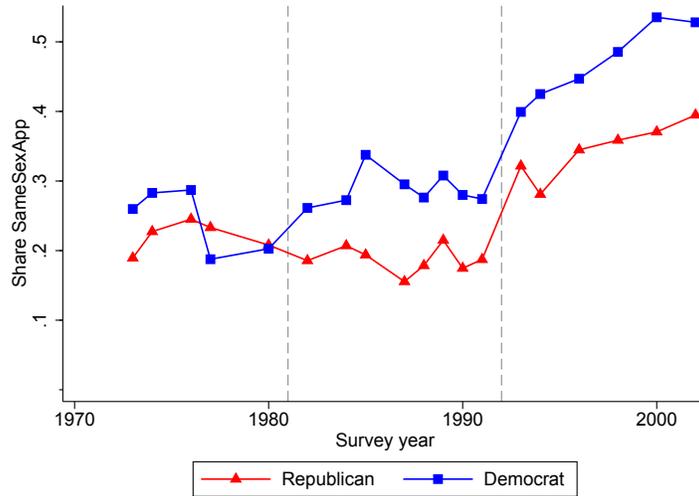


Figure 14

States are classified into Republican vs Democrat according to which candidate obtained the greater share of the public vote in the 1988 election. Sources: David Leip’s Atlas of U.S. Presidential Elections. GSS.

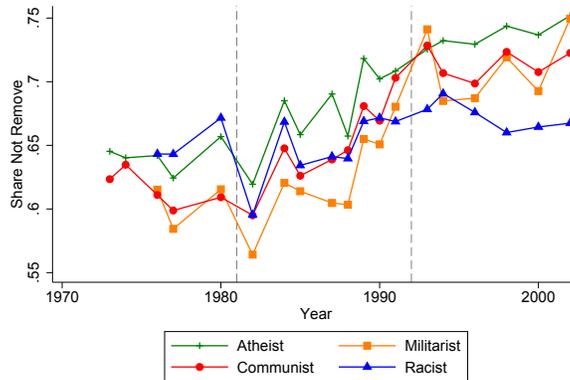


Figure 15

Share of individuals that would not be in favor of removing a book from the library if it advocated racism, militarism, communism, and atheism, respectively. Data source: GSS. See text for exact questions.

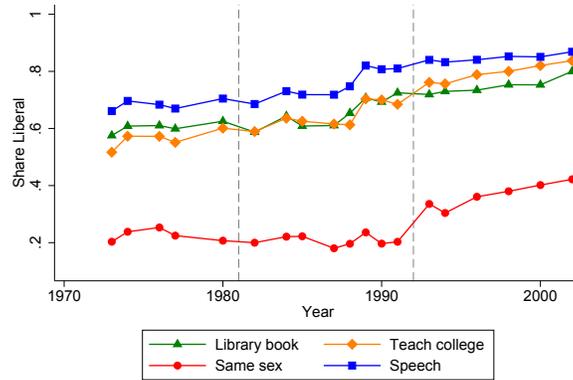


Figure 16

Share that takes the more liberal position on whether an “admitted homosexual” should be allowed to make a speech; allowed to teach in a college; and whether book advocating homosexuality should be allowed to remain in the public library. Same sex is identical to SameSexApp. See text for details. Data source: GSS.

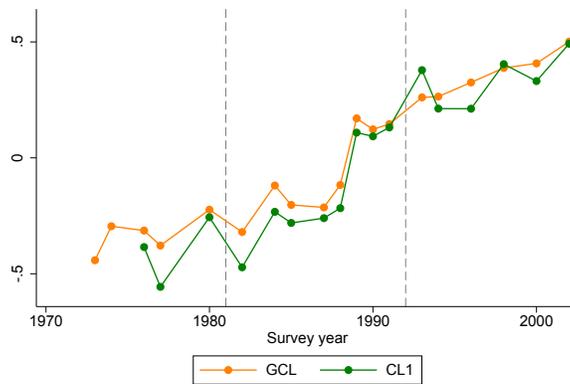


Figure 17

Evolution of Gay Civil Liberties Index (GCL) and Civil Liberties Index (CL1). See text for details.

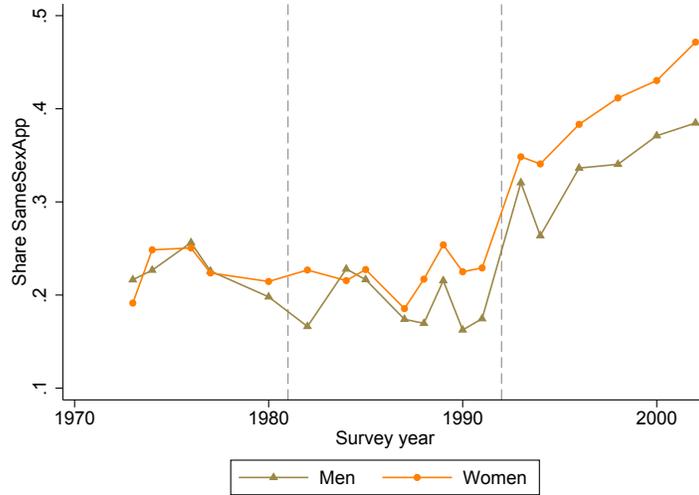


Figure 18: See notes to Figure 1.

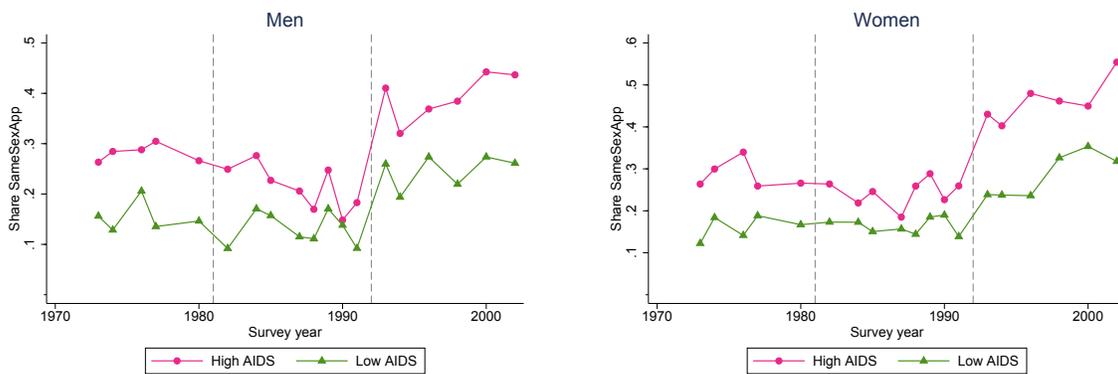


Figure 19: See notes to Figure 11.

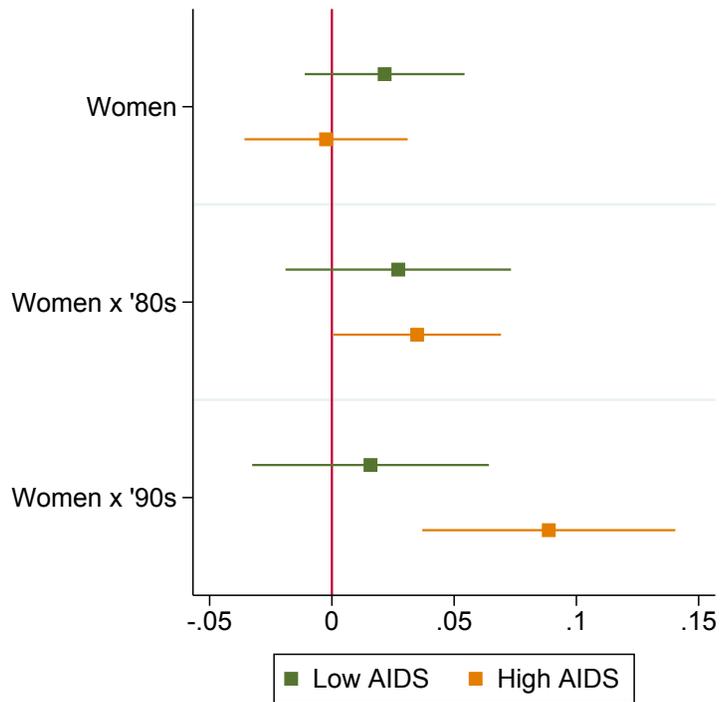


Figure 20

These coefficients are the β_τ 's in the following regression which is run separately for individuals in low vs high-AIDS states: $y_{ist} = \kappa + \sum_\tau \beta_\tau female_{ist} \times D_{i\tau} + \sum_\tau \gamma_\tau D_{i\tau} X_{i,t} + \delta_s + \delta_t + \epsilon_{ist}$. Standard errors are clustered at the state level.

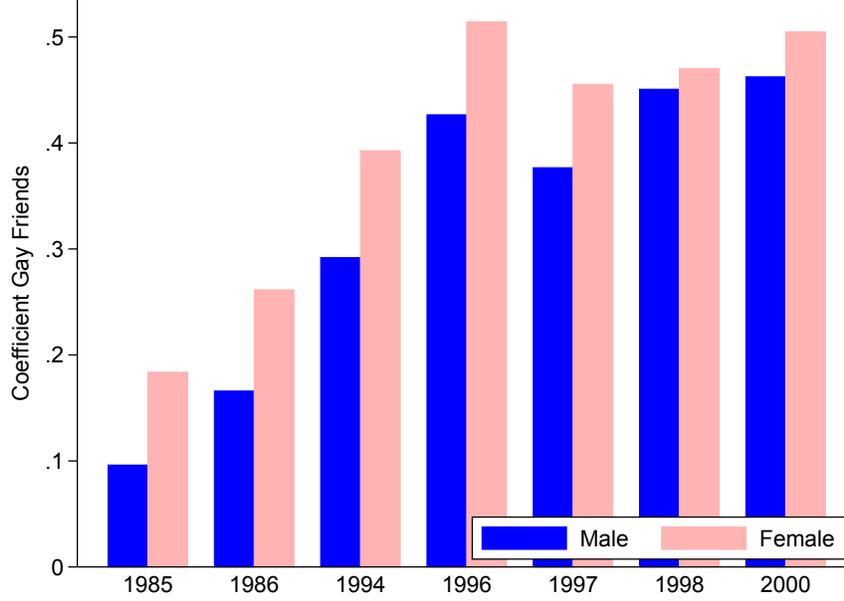


Figure 21

This figure decomposes, by gender, the proportion of individuals who state that they have a gay friend or acquaintance by plotting $\gamma_{g\tau}$ from $friend_{igt} = \sum_{\tau} \sum_g \gamma_{g\tau} (D_{\tau} \times sex_{ig}) + \beta X_{i,t} + \epsilon_{igt}$ where D_{τ} is a dummy that takes the value 1 if the response was in year τ , and sex_{ig} is a vector of male and female dummies F, M that take value 1 if respondent i is of sex $g = F, M$ and zero otherwise. We also control for education categories (less high school, high school grad, some college, and college grad +), age categories (18 – 29, 30 – 39, 40 – 49, 50 – 64, and 65+), race (White, Black, Asian, and Other).

Coefficient on Year by Gender

Year	1985	1986	1994	1996	1997	1998	2000
$\Delta\gamma_{gt}$	0.088	0.096	0.101	0.088	0.079	0.019	0.043
F-Stat	7.15	5.76	6.85	5.14	4.06	0.19	1.29
p-value	0.0075	0.0164	0.0089	0.0234	0.0439	0.6595	0.2555

Tables

Table 1: **Approval of Same-sex Relations**
Dependent variable: SameSexApp

	(1)	(2)	(3)
Medium AIDS x '80s	0.00594 (0.038)	0.0153 (0.033)	0.00477 (0.029)
High AIDS x '80s	-0.0381 (0.030)	-0.0262 (0.028)	-0.0231 (0.026)
Medium AIDS x '90s	0.0334 (0.035)	0.0395 (0.029)	0.0342 (0.027)
High AIDS x '90s	0.0523* (0.027)	0.0617** (0.027)	0.0547** (0.026)
Female	-0.00567 (0.008)	-0.00660 (0.008)	0.00748 (0.009)
Female x '80s	0.0382*** (0.010)	0.0396*** (0.010)	0.0345*** (0.011)
Female x '90s	0.0709*** (0.011)	0.0740*** (0.011)	0.0611*** (0.012)
Black	-0.0350** (0.016)	-0.0827*** (0.012)	-0.0617*** (0.014)
Black x '80s	-0.0576** (0.027)	-0.0517* (0.029)	-0.0515* (0.028)
Black x '90s	-0.128*** (0.021)	-0.109*** (0.024)	-0.0966*** (0.023)
Other	-0.0322 (0.081)	-0.0608 (0.082)	-0.0818 (0.080)
Other x '80s	-0.0534 (0.077)	-0.0322 (0.077)	0.00480 (0.074)
Other x '90s	-0.100 (0.075)	-0.0835 (0.074)	-0.0506 (0.075)
State & Year FE	✓	✓	✓
Res cat.		✓	✓
Income cat. & Educ			✓
Observations	21727	21727	21727
Adj. R sq	0.109	0.121	0.153

SameSexApp is a dummy variable that equals 1 if the individual answered "Not wrong at all," or "sometimes wrong," to the GSS question on whether it is "wrong for same-sex adults to have sexual relations?" See text for definitions of categories for individual characteristics and AIDS categories. All specifications other than (1) contain 10-year age interval dummies. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 2: **Religion and Marital Status**
 Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)
Medium AIDS x '80s	0.00477 (0.029)	0.00381 (0.029)	0.00562 (0.028)	0.00496 (0.028)
High AIDS x '80s	-0.0231 (0.026)	-0.0253 (0.025)	-0.0197 (0.025)	-0.0213 (0.024)
Medium AIDS x '90s	0.0342 (0.027)	0.0322 (0.026)	0.0338 (0.025)	0.0320 (0.025)
High AIDS x '90s	0.0547** (0.026)	0.0505* (0.025)	0.0524** (0.025)	0.0488* (0.024)
Catholic		-0.00224 (0.015)		-0.00300 (0.015)
Jewish		0.247*** (0.036)		0.250*** (0.034)
None		0.0337 (0.025)		0.0348 (0.025)
Other		0.00357 (0.075)		0.00792 (0.071)
Catholic x '80s		0.0347** (0.016)		0.0327* (0.016)
Jewish x '80s		0.0668 (0.050)		0.0640 (0.049)
None x '80s		0.0513* (0.027)		0.0449 (0.028)
Other x '80s		-0.0151 (0.083)		-0.0190 (0.079)
Catholic x '90s		0.0542*** (0.018)		0.0519*** (0.018)
Jewish x '90s		0.0726 (0.045)		0.0668 (0.046)
None x '90s		0.0738** (0.029)		0.0680** (0.029)
Other x '90s		-0.0300 (0.073)		-0.0288 (0.070)
Widowed			0.00955 (0.022)	0.0106 (0.022)
Divorced/Separated			0.0992*** (0.027)	0.101*** (0.027)
Single			0.0972*** (0.016)	0.0974*** (0.016)
Widowed x '80s			-0.00319 (0.026)	-0.00760 (0.027)
Divorced/Separated x '80s			-0.0191 (0.025)	-0.0207 (0.025)
Single x '80s			-0.00535 (0.028)	-0.00590 (0.028)
Widowed x '90s			0.0231 (0.032)	0.0216 (0.032)
Divorced/Separated x '90s			-0.0136 (0.025)	-0.0129 (0.026)
Single x '90s			0.0536** (0.023)	0.0496** (0.023)
State & Year FE	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓
Observations	21727	21659	21725	21657
Adj. R sq	0.153	0.163	0.163	0.172

SameSexApp is a dummy variable that equals 1 if the individual answered "Not wrong at all," or "sometimes wrong," to the GSS question on whether it is "wrong for same-sex adults to have sexual relations?" See text for definitions of categories for individual characteristics and AIDS categories. The excluded groups are Protestant for religion and married for marital status. All specifications include 10-year age interval dummies, race, and sex. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 3: **Political Parties: Indiv and State** Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)	(5)	(6)
	Party id	Party id	Polviews	Polviews	Pres. Party	Pres. Party
Independent	0.0813*** (0.011)	0.0813*** (0.011)				
Democrat	0.0351*** (0.012)	0.0351*** (0.012)				
Independent x '80s	0.0254* (0.014)	0.0258* (0.014)				
Democrat x '80s	0.0682*** (0.016)	0.0683*** (0.016)				
Independent x '90s	0.0851*** (0.018)	0.0836*** (0.018)				
Democrat x '90s	0.162*** (0.018)	0.160*** (0.019)				
Moderate			0.0407*** (0.015)	0.0408*** (0.015)		
Liberal			0.178*** (0.017)	0.178*** (0.017)		
Moderate x '80s			0.00681 (0.015)	0.00692 (0.015)		
Liberal x '80s			-0.00205 (0.020)	-0.00213 (0.020)		
Moderate x '90s			0.0895*** (0.019)	0.0894*** (0.018)		
Liberal x '90s			0.127*** (0.022)	0.125*** (0.023)		
Pres Dem x '80s					0.0468 (0.031)	0.0505* (0.028)
Pres Dem x '90s					0.0599** (0.027)	0.0533* (0.030)
Med AIDS x '80s		0.00107 (0.030)		0.00672 (0.027)		0.0113 (0.025)
High AIDS x '80s		-0.0239 (0.026)		-0.0221 (0.024)		-0.0221 (0.022)
Med AIDS x '90s		0.0306 (0.027)		0.0282 (0.024)		0.0399 (0.027)
High AIDS x '90s		0.0473* (0.025)		0.0424* (0.023)		0.0545** (0.026)
State & Year FE	✓	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓	✓
Observations	21300	21300	21727	21727	21727	21727
Adj. R sq	0.166	0.167	0.191	0.192	0.150	0.151

For partyid, Democrats include those who answer that they identify as a “Strong Democrat,” and “Not strong Democrat.”; Republican include those who answer “Strong Republican,” and “Not strong Republican.” Independents (excluded group) are those who answered “Independent, Independent near Democrat, and Independent near Republican.” Political views (Polviews) is classified into liberal, moderate, and conservative (excluded) as explained in the text. For Pres. Party, states are classified into Republican vs Democrat according to which candidate obtained the greater share of the public vote in the 1988 election. Sources: David Leip’s Atlas of U.S. Presidential Elections & GSS. See text for details. All specifications include 10-year age interval dummies, race, and sex. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 4: **PCA Loadings**

Variable	GCL	CL1	CL2
College Homo	0.59	-	-
Library Homo	0.55	-	-
Speak Homo	0.59	-	-
College Mil	-	0.29	0.33
Libray Mil	-	0.31	-0.31
Speak Mil	-	0.30	0.07
College Atheist	-	0.29	0.35
Speak Atheist	-	0.29	0.033
Library Atheist	-	0.30	-0.37
Speak Com.	-	0.30	-0.06
College Com.	-	-0.26	-0.06
Library Com.	-	0.31	-0.39
Speak Racist	-	0.27	0.21
College Racist	-	0.26	0.50
Library Racist	-	0.28	-0.29
Eigenvalue	2.19	5.90	1.21
Share Total Variance	0.73	0.49	0.10

These are the loadings, the eigenvalues, and the share of the total variance explained by GCL, CL1, and CL2 which are the principal components of the gay civil liberties and civil liberties variables, respectively. See the text for details on its construction.

Table 5: Civil Liberties and Gay Rights

	(1)	(2)	(3)	(4)	(5)
	Gay CivLib	Gay CivLib	Gay CivLib	SameSexApp	SameSexApp
Female	0.0456 (0.041)	0.0704 (0.044)	0.0707 (0.044)	0.00748 (0.009)	0.0181 (0.011)
Female x '80s	0.0515 (0.049)	0.138*** (0.049)	0.138*** (0.049)	0.0345*** (0.011)	0.0403** (0.015)
Female x '90s	0.0556 (0.056)	0.102 (0.068)	0.100 (0.067)	0.0611*** (0.012)	0.0703*** (0.016)
Black	0.0244 (0.065)	0.122* (0.061)	0.123** (0.060)	-0.0617*** (0.014)	-0.0550** (0.026)
Black x '80s	-0.131* (0.077)	-0.0173 (0.062)	-0.0181 (0.060)	-0.0515* (0.028)	-0.0429 (0.027)
Black x '90s	-0.117 (0.072)	-0.0172 (0.061)	-0.0235 (0.059)	-0.0966*** (0.023)	-0.0701** (0.032)
Other	-0.192 (0.323)	0.148 (0.260)	0.150 (0.256)	-0.0818 (0.080)	-0.0420 (0.160)
Other x '80s	-0.114 (0.297)	-0.106 (0.241)	-0.105 (0.235)	0.00480 (0.074)	0.0125 (0.165)
Other x '90s	-0.126 (0.326)	-0.229 (0.245)	-0.243 (0.241)	-0.0506 (0.075)	-0.0393 (0.151)
Med AIDS x '80s	0.0603 (0.109)		0.0430 (0.076)	0.00477 (0.029)	0.00858 (0.035)
High AIDS x '80s	-0.125* (0.072)		-0.0614 (0.060)	-0.0231 (0.026)	0.00312 (0.031)
Med AIDS x '90s	0.0625 (0.102)		0.102 (0.070)	0.0342 (0.027)	0.0320 (0.027)
High AIDS x '90s	0.0154 (0.087)		0.0595 (0.073)	0.0547** (0.026)	0.0688** (0.029)
Civ. Lib. 1		0.417*** (0.012)	0.417*** (0.012)		0.0534*** (0.004)
Civ. Lib. 1 x '80s		-0.0361*** (0.010)	-0.0359*** (0.010)		-0.0101** (0.004)
Civ. Lib. 1 x '90s		-0.101*** (0.011)	-0.101*** (0.011)		0.000878 (0.005)
Civ. Lib. 2		-0.0676*** (0.020)	-0.0677*** (0.020)		0.00872 (0.006)
Civ. Lib. 2 x '80s		-0.0381 (0.027)	-0.0382 (0.027)		0.00129 (0.007)
Civ. Lib. 2 x '90s		-0.0420* (0.024)	-0.0418* (0.024)		-0.0275*** (0.008)
State & Year FE	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓
Observations	21625	16804	16804	21727	16506
Adj. R sq	0.218	0.492	0.492	0.153	0.207

SameSexApp is a dummy variable that equals 1 if the individual answered "Not wrong at all," or "sometimes wrong," to the GSS question on whether it is "wrong for same-sex adults to have sexual relations?" Civ. Lib 1 & 2 are the civil rights indices. Gay CivLib is the index of civil liberties for gays. See text for details and definitions of categories for individual characteristics and AIDS categories. All specifications include 10-year age interval dummies. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 6: **Gender** Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)	(5)	(6)
	Men	Men	Men	Women	Women	Women
Medium AIDS x '80s	-0.00143 (0.045)	0.00658 (0.039)	-0.00988 (0.034)	0.0131 (0.038)	0.0208 (0.034)	0.0160 (0.030)
High AIDS x '80s	-0.0458 (0.034)	-0.0304 (0.032)	-0.0279 (0.029)	-0.0320 (0.031)	-0.0249 (0.030)	-0.0230 (0.028)
Medium AIDS x '90s	0.0101 (0.041)	0.0157 (0.037)	0.00275 (0.034)	0.0522 (0.034)	0.0551* (0.028)	0.0576** (0.026)
High AIDS x '90s	0.0145 (0.032)	0.0208 (0.034)	0.00990 (0.036)	0.0804*** (0.029)	0.0868*** (0.027)	0.0821*** (0.026)
Black	-0.0214 (0.032)	-0.0830*** (0.025)	-0.0496* (0.027)	-0.0482** (0.020)	-0.0834*** (0.019)	-0.0702*** (0.021)
Other	-0.0672 (0.139)	-0.106 (0.140)	-0.122 (0.128)	-0.00789 (0.065)	-0.0274 (0.064)	-0.0530 (0.070)
Black x '80s	-0.0486 (0.036)	-0.0347 (0.035)	-0.0395 (0.035)	-0.0624* (0.035)	-0.0655* (0.035)	-0.0581 (0.036)
Other x '80s	0.0255 (0.127)	0.0521 (0.128)	0.0711 (0.121)	-0.114* (0.066)	-0.0979 (0.064)	-0.0429 (0.067)
Black x '90s	-0.125*** (0.037)	-0.0945** (0.037)	-0.0911** (0.036)	-0.126*** (0.024)	-0.118*** (0.024)	-0.101*** (0.026)
Other x '90s	-0.0959 (0.124)	-0.0711 (0.126)	-0.0385 (0.117)	-0.0974 (0.085)	-0.0876 (0.082)	-0.0545 (0.086)
State & Year FE	✓	✓	✓	✓	✓	✓
Res cat.		✓	✓		✓	✓
Income cat. & Educ			✓			✓
Observations	9859	9859	9859	11868	11868	11868
Adj. R sq	0.0905	0.107	0.143	0.124	0.135	0.164

SameSexApp is a dummy variable that equals 1 if the individual answered “Not wrong at all,” or “sometimes wrong,” to the GSS question on whether it is “wrong for same-sex adults to have sexual relations?” See text for definitions of categories for individual characteristics and AIDS categories. All specifications other than (1) and (4) contain 10-year age interval dummies. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 7: **Politics**
 Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)	(5)	(6)
	Men	Men	Men	Women	Women	Women
Med AIDS x '80s	-0.0165 (0.034)	-0.00689 (0.035)	-0.0108 (0.037)	0.0142 (0.031)	0.0133 (0.030)	0.00770 (0.031)
High AIDS x '80s	-0.0254 (0.029)	-0.0363 (0.029)	-0.0358 (0.029)	-0.0261 (0.029)	-0.0311 (0.026)	-0.0303 (0.028)
Med AIDS x '90s	0.00279 (0.035)	0.00617 (0.035)	-0.00361 (0.031)	0.0497* (0.027)	0.0591* (0.030)	0.0473 (0.029)
High AIDS x '90s	0.0157 (0.034)	0.00556 (0.036)	-0.00380 (0.031)	0.0641** (0.025)	0.0753*** (0.027)	0.0628** (0.025)
Independent	0.106*** (0.022)			0.0626*** (0.013)		
Democrat	0.0720*** (0.020)			0.00835 (0.013)		
Independent x '80s	0.00805 (0.022)			0.0369* (0.022)		
Democrat x '80s	0.0307 (0.025)			0.0953*** (0.020)		
Independent x '90s	0.0440 (0.030)			0.114*** (0.025)		
Democrat x '90s	0.0803** (0.032)			0.220*** (0.027)		
Pres Dem x '80s		0.0603 (0.040)			0.0472 (0.035)	
Pres Dem x '90s		0.0679 (0.045)			0.0301 (0.033)	
Moderate			0.0400** (0.019)			0.0408** (0.017)
Liberal			0.180*** (0.022)			0.191*** (0.022)
Moderate x '80s			-0.0198 (0.022)			0.0287 (0.021)
Liberal x '80s			-0.0138 (0.026)			0.00286 (0.029)
Moderate x '90s			0.0811*** (0.021)			0.100*** (0.027)
Liberal x '90s			0.1000*** (0.028)			0.142*** (0.028)
State & Year FE	✓	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓	✓
Observations	9656	9859	9859	11644	11868	11868
Adj. R sq	0.155	0.133	0.169	0.178	0.157	0.201

See notes in Table 3 for definitions. All specifications contain 10-year age interval dummies and race. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 8: Friends and Macho Attitudes
 Dependent variable: SameSexApp

	(1) Men	(2) Women	(3) Men
Friends x '80s	0.0613 (0.139)	0.0659 (0.094)	
Friends x '90s	0.161 (0.185)	0.0554 (0.074)	
Medium AIDS x '80s			-0.0941** (0.036)
High AIDS x '80s			-0.0438 (0.028)
Medium AIDS x '90s			-0.0245 (0.034)
High AIDS x '90s			-0.0139 (0.036)
Mom Work			0.0361 (0.023)
Mom Work x '80s			-0.0183 (0.033)
Mom Work x '90s			-0.0102 (0.025)
Medium AIDS x Mom Work			-0.0199 (0.035)
High AIDS x Mom Work			0.0147 (0.042)
Medium AIDS x Mom Work x '80s			0.102* (0.052)
High AIDS x Mom Work x '80s			0.0158 (0.045)
Medium AIDS x Mom Work x '90s			0.0303 (0.039)
High AIDS x Mom Work x '90s			0.0257 (0.034)
State & Year FE	✓	✓	✓
Res cat.	✓	✓	✓
Income cat. & Educ	✓	✓	✓
Observations	5613	6808	8828
Adj. R sq	0.133	0.154	0.149

Friends is the state level average, by gender, of people who answered yes to whether they have a gay friend or acquaintance. Data source: Newsweek polls 1985 and 1986. Mom work is a variable coded as 1 if the respondent answered affirmatively to the question "Did your mother ever work for pay for as long as a year, after she was married?" (years 1973 to 1993). Similarly, it is coded as 1 if the respondent answered affirmatively to "Did your mother ever work for pay for as long as a year, while you were growing up?" (year 1994 onwards). All specifications include 10-year age interval dummies. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 9: **1970s State Characteristics and AIDS**
 Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)	(5)
	Only '70s	Only '70s	All Periods	All Periods	All Periods
Medium AIDS	0.0297 (0.027)	0.00884 (0.024)			
High AIDS	0.0698** (0.031)	-0.000991 (0.029)			
Premar70s		0.347*** (0.098)			
Pornlaw70s		0.425** (0.180)			
Medium AIDS x '80s			0.0202 (0.042)	0.0272 (0.033)	0.0233 (0.029)
High AIDS x '80s			-0.00929 (0.040)	-0.00214 (0.038)	0.00103 (0.035)
Medium AIDS x '90s			0.0547 (0.040)	0.0598* (0.031)	0.0622** (0.029)
High AIDS x '90s			0.0739** (0.030)	0.0889*** (0.028)	0.0834*** (0.027)
Premar70 x '80s			-0.171 (0.110)	-0.141 (0.090)	-0.111 (0.078)
Premar70 x '90s			0.0894 (0.143)	0.169 (0.114)	0.190* (0.109)
Pornlaw70 x '80s			-0.0269 (0.232)	-0.0594 (0.217)	-0.130 (0.200)
Pornlaw70 x '90s			-0.305 (0.257)	-0.336 (0.206)	-0.354* (0.196)
Res cat.	✓	✓		✓	✓
Income cat. & Educ	✓	✓			✓
Observations	3391	3391	11868	11868	11868
Adj. R sq	0.124	0.136	0.0837	0.136	0.164

Premar70 averages over the '70s, at the state level, responses to the GSS question "There's been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sex relations before marriage, do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all." Pornlaw70 does the same for the GSS question "Which of these statements comes closest to your feelings about pornography laws? Illegal to all, illegal under 18, legal." See the text for the coding of responses. Robust clustered standard errors in parentheses. Other variables as defined in text. See text for details. All specifications include 10-year age interval dummies and race. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 10: **Robustness** Dependent variable: SameSexApp

	(1) Region	(2) Exclude NY	(3) Exclude MT	(4) Alt Approve	(5) State Trend	(6) Weighted	(7) Cont.
Medium AIDS x '80s	0.0272 (0.030)	0.0162 (0.031)	0.0153 (0.030)	0.0632** (0.025)	-0.0115 (0.046)	0.0213 (0.027)	
High AIDS x '80s	-0.0131 (0.032)	-0.0266 (0.030)	-0.0240 (0.028)	-0.00175 (0.022)	0.000442 (0.052)	-0.0335 (0.025)	
Medium AIDS x '90s	0.0641* (0.034)	0.0580** (0.026)	0.0567** (0.026)	0.0668** (0.027)	-0.000383 (0.070)	0.0599** (0.025)	
High AIDS x '90s	0.0952*** (0.034)	0.0820*** (0.030)	0.0810*** (0.027)	0.0725** (0.029)	0.127* (0.073)	0.0667** (0.026)	
Black x '70s	-0.0679*** (0.021)	-0.0807*** (0.020)	-0.0694*** (0.021)	-0.0383** (0.015)	-0.0727*** (0.021)	-0.0783*** (0.021)	-0.0712*** (0.022)
Other x '70s	-0.0528 (0.070)	-0.0149 (0.066)	-0.0524 (0.070)	-0.0252 (0.058)	-0.0568 (0.068)	-0.0759 (0.096)	-0.0534 (0.070)
Black x '80s	-0.0643* (0.037)	-0.0326 (0.030)	-0.0594 (0.036)	-0.0484 (0.031)	-0.0549 (0.036)	-0.0346 (0.035)	-0.0565 (0.036)
Other x '80s	-0.0401 (0.067)	-0.0662 (0.068)	-0.0436 (0.067)	-0.0780 (0.066)	-0.0388 (0.065)	-0.0105 (0.096)	-0.0411 (0.066)
Black x '90s	-0.101*** (0.024)	-0.0915*** (0.027)	-0.102*** (0.026)	-0.124*** (0.019)	-0.103*** (0.025)	-0.0757*** (0.027)	-0.0997*** (0.027)
Other x '90s	-0.0557 (0.085)	-0.0985 (0.082)	-0.0549 (0.087)	-0.0891 (0.073)	-0.0542 (0.082)	-0.0315 (0.108)	-0.0520 (0.086)
log(1+CAR92) x '80s							-0.0208 (0.019)
log(1+CAR92) x '90s							0.0369** (0.014)
State & Year FE	✓	✓	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓	✓	✓
Observations	11868	10927	11792	11868	11868	11868	11868
Adj. R sq	0.163	0.157	0.164	0.120	0.165	0.163	0.163

Column (1) includes regional fixed effects, (2) excludes NY, (3) excludes MT, (4) redefines SameSexApp to only exclude the answer "always wrong," (5) includes a state linear time trend, (6) uses a continuous definition of the AIDS rate rather than a categorical variable, and (7) uses sampling weights. See text for all details. All specifications include 10-year age interval dummies. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Online Appendix

Donations

Figure 5 uses the Database on Ideology, Money in Politics, and Elections (DIME).⁷⁷ To search for campaign donations from the Human Rights Campaign we used the keyword “Human Rights Camp” under names. We added the organizations named “hrc”. This yielded a total of 11 distinct entries representing the donations of the Human Rights Campaign funds from 1979 to 2002. Lastly, we aggregated these amounts to the election-cycle level, adjusting by the CPI for that year (2015 is the base year).⁷⁸

PCA

The Gay Civil Liberties (GCL) index is the first component of the three questions described in Section 5. PCA summarizes the data, by extracting the k orthogonal components explaining the highest share of the variation in the data. The principal components are weighted sums of the given variables. All components are required to fully explain the correlations in the principal components analysis. The first component is constructed to capture the highest possible fraction of variance in the data (subject to the constraint that the linear weights sum to one), the second to capture the highest fraction of the remaining variance, conditional on being orthogonal to the first component, and so on. We used the Kaiser’s eigenvalue method, which consists in keeping the components with an eigenvalue greater than 1. This leaves us with one component for the gay civil liberties variables, GCL. The correlation between a component and a variable is called the variable’s loading on that component. Variables that load heavily on the same component are highly related. Table 4 reports the loadings, the eigenvalue and the share of the total variance explained by the first component (Column 1). The first component explains 73% of the total variance of the gay-related civil liberties questions and has close to equal loadings on the three questions.

⁷⁷This dataset was compiled by Adam Bonica (see Bonica (2016)). DIME records systematically information on over 130 million political contributions made by individuals and organizations from 1979 to 2014 to local and federal elections.

⁷⁸Election cycles are assigned an even year corresponding to a national election year and within the domain of campaign finance broadly covers the time period the candidates can receive contributions and can depend on the type of elections (primary or general), e.g., the 2014 U.S. House district general election cycle began on the 7th of November 2012 and ended on the 4th of November 2014.

The next two columns reports the equivalent for CL1 and CL2.

PCA by Gender

We return to the relationship between civil liberties and gay civil liberties we investigated earlier, decomposing by gender, to test whether the lack of relationship is due to the pooling of men and women. We use the same questions and the main difference is that we construct a Gay Civil Liberties index for women and men separately. In each case, the first component of the civil liberties questions related to gay people is used as the index. Appendix Table 2 reports the loadings, the eigenvalue and the share of the total variance explained by the first component for the male sample (column 1) and the female sample (column 4). The first component is almost identical for the male and the female sample with 73% of the total variance of the gay-related civil liberties questions explained and close to equal loadings on the three questions. The results for the civil liberties indices (CL1 and CL2) are also summarized in the Appendix Table 2.

Appendix Tables 3 and 4 report the coefficients of the main regression in section ?? for the male and the female sample, respectively. The pattern is very similar to the Table 5 with the pooled sample. Medium AIDS states exhibit a negative difference-in-difference estimator for the male sample in the '80s, only. As soon as we control for both CL1 and CL2, and the AIDS categorical variable, the AIDS epidemic is not economically or statistically significant anymore. Furthermore, exploring the relationship between *SameSexApp* and the Civil Liberties indices, in the last two columns of the Appendix Tables 3 and 4, we still find the relationship between the AIDS epidemic and *SameSexApp* strongly driven by the female sample, with no striking differences by gender along the Civil Liberties indices.

Appendix Figures and Tables

Appendix Table 1 - **Politics: Alternative Def**
 Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)	(5)	(6)
	All	All	Men	Men	Women	Women
Independent	0.0415** (0.017)	0.0416** (0.017)	0.0971*** (0.023)	0.0971*** (0.023)	-0.00395 (0.020)	-0.00445 (0.020)
Democrat	0.0478*** (0.013)	0.0477*** (0.013)	0.0832*** (0.017)	0.0833*** (0.017)	0.0211 (0.015)	0.0207 (0.015)
Independent x '80s	0.00856 (0.023)	0.00923 (0.023)	-0.0329 (0.033)	-0.0319 (0.034)	0.0430 (0.026)	0.0437 (0.026)
Democrat x '80s	0.0497*** (0.017)	0.0496*** (0.017)	0.00456 (0.022)	0.00431 (0.022)	0.0841*** (0.023)	0.0843*** (0.023)
Independent x '90s	0.0680*** (0.025)	0.0669*** (0.024)	0.0191 (0.035)	0.0194 (0.035)	0.110*** (0.028)	0.107*** (0.028)
Democrat x '90s	0.138*** (0.018)	0.136*** (0.018)	0.0761*** (0.027)	0.0753*** (0.027)	0.187*** (0.024)	0.184*** (0.024)
Med AIDS x '80s		0.00310 (0.030)		-0.0130 (0.034)		0.0149 (0.032)
High AIDS x '80s		-0.0214 (0.025)		-0.0224 (0.029)		-0.0236 (0.029)
Med AIDS x '90s		0.0312 (0.026)		0.00455 (0.034)		0.0502* (0.027)
High AIDS x '90s		0.0477* (0.025)		0.0132 (0.034)		0.0683*** (0.024)
State & Year FE	✓	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓	✓
Observations	21300	21300	9656	9656	11644	11644
Adj. R sq	0.166	0.167	0.155	0.154	0.177	0.178

Democrats include those who answer that they identify as a "Strong Democrat," "Not strong Democrat," "Independent, near Democrat"; Republican includes those who answer "Strong Republican," "Not strong Republican," and "Independent, near Republican." All specifications include 10-year age interval dummies, sex, and race. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Appendix Table 2 - **Loadings PCA by Gender**

Variable	Male			Female		
	GCL	CL1	CL2	GCL	CL1	CL2
colhomo	0.5854	-	-	0.5884	-	-
libhomo	0.5554	-	-	0.5499	-	-
spkhomo	0.5907	-	-	0.5928	-	-
colmil	-	0.2902	0.3245	-	0.2848	-0.3417
libmil	-	0.3073	-0.3038	-	0.3047	0.3139
spkmil	-	0.3027	0.0631	-	0.2984	-0.0724
colath	-	0.2891	0.3534	-	0.2891	-0.3497
spkath	-	0.2892	0.0356	-	0.2915	-0.0314
libath	-	0.2956	-0.3622	-	0.3021	0.3652
spkcom	-	0.3025	-0.0711	-	0.3046	0.0545
colcom	-	-0.2594	-0.0206	-	-0.2576	0.0921
libcom	-	0.3104	-0.399	-	0.3149	0.382
spkrac	-	0.2714	0.2207	-	0.2698	-0.1917
colrac	-	0.2564	0.5074	-	0.2562	-0.486
librac	-	0.2838	-0.2652	-	0.2835	0.3042
eigenvalue	2.2	5.97	1.23	2.18	5.82	1.2
share total variance	0.73	0.5	0.1	0.73	0.48	0.1

These are, by gender, the loadings, the eigenvalues, and the share of the total variance explained by GCL, CL1, and CL2 which are the principal components of the gay civil liberties and civil liberties variables, respectively. See the text for details on its construction.

Appendix Table 3 - Civil Liberties and Gay Civil Liberties

	Men				
	(1) Gay CivLib	(2) Gay CivLib	(3) Gay CivLib	(4) SameSexApp	(5) SameSexApp
Med AIDS x '80s	0.112 (0.129)		0.166* (0.098)	-0.00988 (0.034)	0.00284 (0.038)
High AIDS x '80s	-0.123* (0.069)		0.00871 (0.062)	-0.0279 (0.029)	-0.000952 (0.034)
Med AIDS x '90s	0.0417 (0.130)		0.112 (0.109)	0.00275 (0.034)	-0.00414 (0.032)
High AIDS x '90s	-0.0155 (0.094)		0.112 (0.087)	0.00990 (0.036)	0.0259 (0.036)
Civ. Lib. 1		0.425*** (0.013)	0.425*** (0.013)		0.0574*** (0.006)
Civ. Lib. 1 x '80s		-0.0238 (0.017)	-0.0251 (0.016)		-0.0210*** (0.006)
Civ. Lib. 1 x '90s		-0.0885*** (0.016)	-0.0892*** (0.016)		-0.00742 (0.006)
Civ. Lib. 2		-0.0491 (0.032)	-0.0498 (0.032)		0.0189** (0.008)
Civ. Lib. 2 x '80s		-0.0504 (0.041)	-0.0493 (0.041)		-0.00489 (0.007)
Civ. Lib. 2 x '90s		-0.0563* (0.032)	-0.0559* (0.033)		-0.0361*** (0.013)
State & Year FE	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓
Observations	9819	7797	7797	9859	7659
Adj. R sq	0.222	0.517	0.518	0.143	0.191

See Table 5 for variable definitions. All specifications include 10-year age interval dummies and race. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Appendix Table 4 - Civil Liberties and Gay Civil Liberties

	Women				
	(1) Gay CivLib	(2) Gay CivLib	(3) Gay CivLib	(4) SameSexApp	(5) SameSexApp
Med AIDS x '80s	0.0120 (0.121)		-0.0573 (0.087)	0.0160 (0.030)	0.0128 (0.043)
High AIDS x '80s	-0.138 (0.108)		-0.132 (0.100)	-0.0230 (0.028)	0.00224 (0.040)
Med AIDS x '90s	0.0622 (0.123)		0.0882 (0.075)	0.0576** (0.026)	0.0646** (0.032)
High AIDS x '90s	0.0181 (0.126)		0.00299 (0.124)	0.0821*** (0.026)	0.0999** (0.042)
Civ. Lib. 1		0.411*** (0.017)	0.411*** (0.018)		0.0492*** (0.004)
Civ. Lib. 1 x '80s		-0.0481** (0.018)	-0.0468** (0.018)		-0.000887 (0.004)
Civ. Lib. 1 x '90s		-0.113*** (0.016)	-0.112*** (0.016)		0.00857 (0.005)
Civ. Lib. 2		0.0893*** (0.025)	0.0892*** (0.025)		-0.000132 (0.010)
Civ. Lib. 2 x '80s		0.0240 (0.032)	0.0245 (0.032)		-0.00651 (0.011)
Civ. Lib. 2 x '90s		0.0259 (0.031)	0.0260 (0.030)		0.0206* (0.011)
State & Year FE	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓
Observations	11806	9007	9007	11868	8847
Adj. R sq	0.216	0.474	0.474	0.164	0.220

See Table 5 for variable definitions. All specifications include 10-year age interval dummies and race. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1