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ABSTRACT

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

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. We show that the process of change was discontinuous over time and present suggestive evidence that the 1992 presidential election followed by the “don’t ask, don’t tell” debate led to a change in attitudes. 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.

JEL Classification: J15, P16, Z13

Keywords: cultural change, AIDS epidemic, LGBT attitudes, public opinion, party politics, presidential elections

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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” that changes incentives to either deviating from proscribed behavior or to punishing those who deviate. This shock can take many forms, e.g., shocks to technology or institutions, or new information that changes beliefs themselves. For example, as a country becomes more urban, it may be less possible or more costly to monitor/punish those who transgress.

What shock could have changed people’s beliefs regarding same-sex relationships? 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.” It became less feasible as well as less desirable to hide being a gay person. Thus, for the same “punishment” to coming out, more gay people were willing do so, thereby making it easier for others to do the same and, over time, generating a new equilibrium fraction of gay people who were out.²

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.”

²This kind of model typically gives rise to multiple stable equilibria. What matters are the comparative statics properties of the model: the shock increases the perceived net reward to coming out, thereby generating a new set of stable equilibria which is characterized by higher fractions of gay people who are out. A complementary explanation is that AIDS increased the willingness of gay people to come out, making other gay people more aware of their own numbers in the population and the degree to which local society was able/willing to punish non-conformers. This information alone could change actions, as shown

The increase in willingness to come out was accompanied by the creation of a plethora of grassroots organizations dealing with various aspects of AIDS and a higher and more focused mobilization of the gay community. During this period, several public figures who had AIDS acknowledged it implicitly or explicitly (e.g., Rock Hudson 1985, Robert Mapplethorpe 1989, or Keith Haring in 1990). National and local organizations mobilized to fight for a cure for AIDS and to end discrimination. Why should this have led to a change in people’s opinion regarding the morality of same-sex relationships? This may have operated via various channels: first, the declarations or knowledge that several famous individuals had AIDS made it clearer that being a gay person was not confined to some small group in society but rather cut across income, education, race, and ethnicity. AIDS cases and the greater rate of “coming out” to friends and family also increased people’s knowledge of the prevalence of same-sex relationships, perhaps persuading people that these were more “normal.”

Second, the competitive nature of the democratic system meant that politicians were always searching for money and votes. In the face of the greater political organization and mobilization of the gay community around AIDS, there was now a large group that could be actively courted by politicians. 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 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.³ The Republican and Democratic parties took openly opposing positions over this ban 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 aforementioned

in Bursztyn, González and Yanagizawa-Drott (2018). The authors show that when men are made aware of neighbors’ (higher than expected) degree of approval of working wives in Saudi Arabia, they become more willing to take actions consistent with allowing their own wife to work.

³See Schmalz (1992).

political debates in 1992-93 and the associated coverage these received in the mainstream media. Although this was a national-level event, our hypothesis is that the impact of these debates was higher 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 response to a national debate that presumably motivated individuals to rethink 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 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.⁴ 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 should be positively correlated with the number 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. 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 next investigate the role of party politics by studying how the change in approval of same-sex relationships differed by self-identified party affiliation and also by using a more “exogenous” measure of political party at the state level. We find that while political parties played an important role, variation in the extent to which states were exposed to AIDS remains significant.⁵ We also examine whether 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

⁴In this sense, the analysis follows a strategy similar to that of Alsan and Wanamaker (2017) that uses the timing (July 1972) 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.

⁵Interestingly, 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.

liberties more generally, people’s increased approval of *same-sex relations* was not part of that process.

Our analysis suggests that the AIDS epidemic played an important role in changing opinions towards same-sex relationships. A puzzling finding is that only women responded to the differential exposure to AIDS and that the response of female democrats was significantly larger than that of male democrats. The effect of the AIDS rate on opinion change for women is very large. Although the approval rate for women in low-AIDS states increased by only 4 percentage points over this period (from an average of 16.1% in the pre-AIDS period to 20.1% in the '90s), the analysis suggests that if these women had been subjected to the same intensity of treatment, their approval would have been 28%, i.e., triple the actual increase. 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.⁶

Our paper contributes to the small literature on cultural change.⁷ 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. It is also possible that people’s willingness to experiment and learn over time is itself a cultural feature 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). 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

⁶See, e.g., Attanasio and Lechene (2002) and Case and Deaton (1998) for some evidence on this asymmetry.

⁷As 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.

believe in the role of luck versus effort in determining individual outcomes.

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. Bau (2019) shows that in response to pension reforms that increased provision in old age in Indonesia and Ghana, parents invested less in the child expected to care for them prior to the reform. Whether this child was female or male, depended on the cultural norm (i.e., on whether it was a matrilineal vs patrilineal society).

Our paper adds to this literature by showing how changed incentives (in this case, the greater incentive to come out and mobilize as a result of AIDS), ultimately led to changes in attitudes. This was a complex process in which the political system played an important role both by bringing these issues to the mainstream public and by causing them to be the topics of wide debate.⁸ It complements a number of recent studies that 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.⁹ 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,

⁸Garretson (2018) independently develops a similar 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.”

⁹Indeed, 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 areas with historically more male-biased sex ratios in Australia 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.

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 countries. They find, by way of contrast with the US results, that these policies are associated with improvements in attitudes towards same-sex relationships.¹⁰ 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 starts with a brief discussion of the context. Section 3 presents our main empirical strategy and results, Section 4 examines the role of gender in obtaining the results and Section 5 presents robustness checks. Section 6 discusses some possible mechanisms and section 7 concludes. The Appendix contains further details on the data and the methodology, as well as robustness checks.

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

According to our general hypothesis, cultural change occurs because the payoff from deviating or from detecting/punishing deviators changes. 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) 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

¹⁰See also Kenny and Patel (2017) for a cross-country analysis.

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>.

discourse.¹² The number of new cases increased rapidly over the next few years, reaching its maximum in 1992 (see Figure 2). By the end of 1992, an estimated 93,000 Americans had died of AIDS.¹³ 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 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.¹⁴ Peer pressure and the perceived value of participating in gay marches and protests increased as vividly illustrated in the slogan “silence = death.”¹⁵ Furthermore, the possibility of developing the disease and eventually being outed in any case, decreased the value of remaining silent.¹⁶ 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.”¹⁷ 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.¹⁸

In parallel, this period saw the creation of important national societies that worked to mobilize individuals and resources such as the the foundation of ACT UP in NYC by Larry Kramer in 1987. October of that year also witnessed a significant march on Washington,

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

¹³Centers for Disease Control and Prevention (CDC) (1993)

¹⁴By 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).

¹⁵See <https://dl.mospace.umsystem.edu/umkc/islandora/object/umkc\%3A27832>.

¹⁶Of 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.

¹⁷We 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.

¹⁸In 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/>.

DC, demanding more federal funds for AIDS treatment and research as well as the end to discrimination against gay people. That same year, President Reagan made his first public speech about AIDS and established a Presidential Commission on HIV. The increasing strength and mobilization of the gay community over this period is visible in the number of people who attended its demonstrations. 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.¹⁹

Perhaps puzzlingly, the increased mobilization of the gay community was not accompanied by greater acceptance of same-sex relationships. As can be seen in Figure 1, aggregate public opinion appears more or less constant at around 20% in the '80s.²⁰ It is only around 1992 that there is a sharp rise in the percentage of individuals who approve of these relationships. This observation leads one to search for a discontinuity around this time period in events or information that affected public opinion.²¹ A natural place to look is at national events that highlighted AIDS and other issues central to the gay community.

1992 was a presidential electoral year and a key year for the gay community. 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.²² 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

¹⁹Source: “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).

²⁰Although 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.

²¹The GSS polls are in 1991 and 1993, so we cannot pinpoint the year beyond the indicated interval.

²²Department of Defense directive 1332.14 explicitly stated “homosexuality was incompatible with military service,” for the first time in 1982.

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.”²³

The opposing party platforms signalled a much more profound debate than the specific issues they mentioned. As explicated by an article in *The NYT Magazine* 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.”²⁴ 1992 was the year that political parties took on the battle, implicitly, of whether being a gay person was socially acceptable, socially endorsable.

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. As we will now go on to show, this generated an unprecedented level of coverage of these issues in the national media. Furthermore, as shown by Bartels (2002), individual party identification is a powerful force in opinion formation and simply having the two major parties come out with divergent opinions might have led to a sharp discontinuity in national opinion polls.²⁵

Americans during this time period mostly got informed by watching the news on TV.²⁶ Figure 4 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 and ii. the AIDS epidemic.²⁷ The left-hand y-axis counts the number of stories related to gay people

²³See <https://www.presidency.ucsb.edu/documents/app-categories/elections-and-transitions/party-platforms> for party platform texts.

²⁴Schmalz (1992).

²⁵Whether this is because debates and attention to an issue lead people to learn or simply because of political “priming” is a matter of ongoing debate (see, e.g., Lenz (2009)).

²⁶According 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>.

²⁷These are not disjoint sets: there are 2787 stories about AIDS and 589 stories about issues relevant to the gay community more generally. A total of 103 news items cover both the AIDS epidemic and the gay community. See the Appendix for the data construction details.

whereas the right-hand y-axis counts the news stories related to AIDS/HIV. As can be seen clearly from the figure, the latter was a dominant event all throughout the '80s. On average from 1982 through 1992, 159 stories per year covered the AIDS epidemic.²⁸ At its peak in 1987, 339 news stories were devoted to this issue. To place this magnitude in perspective, 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 and 1993 are two outlier years.²⁹ In 1993, a household that watched all three evening news programs would have seen a story related to gay people once every three to four days as opposed, say, to once every 19 to twenty days on average throughout the preceding decade. Within these stories, the salience of the issue of gays in the military is illustrated in Figure 5. This figure decomposes, by year, the news items related to gay issues into four mutually exclusive partitions according to topic: gays in the military, gays in presidential-related news, the intersection of these two, and other news.³⁰ In 1992, 21 out of the 55 gay-related stories were about gays in the military, and 55 out of 105 stories covered the same topic in 1993.³¹

The figures clearly illustrate 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 make plausible the argument that people were led to debate and reevaluate their views on same-sex relationships. Although these were national events and thus might be expected to impact everyone in a similar fashion, we will next turn to showing that this is not the case. In particular, as we will show in the next section, the impact of these national events was substantially higher in those states with a high AIDS rate.

²⁸By 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.

²⁹There were 55 and 105 news stories related to the gay community in 1992 and 1993, respectively.

³⁰Within the gay news, we searched for the terms armed, army, reserv*, navy, air force, and military, for the first topic; president, Clinton, election, campaign, Bush, Democrat, Republican and Reagan, for the second topic.

³¹Authors' calculations.

3 The Roles of AIDS and Politics

In order to study the impact of AIDS, we examine the change in opinion at the state level between 1973-2002. The starting point is defined by the first year poll data is available. The analysis ends in 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 associated with changes in opinion.³² 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 last 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 1991-93.³³ The discontinuity in opinion can be measured. For example, 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. In addition, one can rigorously test whether there is a structural break in the time series of opinion by running the supremum Wald test for a single break point with an unknown break year (see Perron (2006)).³⁴ The test identifies a break at 1992 and the null hypothesis of no break is rejected at $p=0.0000$.

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?.” This question gets to the heart of people’s moral views regarding same-sex relations unlike, say, questions

³²Furthermore, 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.

³³Further evidence that the discontinuity is related to events in the US is provided by comparing the evolution of opinion in the UK using poll data from NatCen. They asked the same question with the same range of answers as the GSS. As can be seen in Figure A1 in the Appendix, there is no corresponding jump in opinion in the years 1991-1993.

³⁴To run this test, we first fill in the missing years by linear interpolation from the adjacent years. We use the `sbsingle` command in STATA.

regarding the rights of gay people. 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.³⁵ We include all individuals between the ages of 18 and 69 that reside in states with observations in all three time periods.³⁶ Our final sample consists of a total of 21,727 observations over 32 states.

The GSS question: “Is it wrong for same-sex adults to have sexual relations?” 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.³⁷

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 1992.³⁸ 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.³⁹ It is useful to note now that while the incidence of AIDS is not exogenous to attitudes at the state level, it should not be affected by changes in opinion that took place in the nineties as 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 7 shows the geographic distribution of CAR92 over US states.

³⁵The '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.

³⁶No 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.

³⁷The robustness analysis considers alternative specifications.

³⁸See 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.

³⁹The 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, $p = 0$.)

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 6. 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.

As discussed in the introduction, 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 should be positively correlated with the number 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. 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.

Figure 8 shows the evolution over time of the SameSexApp, differentiating by high versus low-AIDS states. As is clear from the figure, public opinion stayed fairly constant over the '70s period. 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 $t \in \tau$, $\tau \in \{\text{'70s}, \text{'80s}, \text{'90s}\}$,

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.⁴⁰ 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.⁴¹

3.1 Cultural Change and AIDS

Table 1 presents the results using the entire sample. The first specification includes only state and year fixed effects. None of the AIDS categories are significant in this specification. The next three columns introduce an increasing number of individual controls. As can be seen in columns 2-4, women and men have similar views in the '70s but a gap opens up afterwards. Women are some 3.5 percentage points more likely to approve of same-sex relationships than men in the '80s and around 6 to 7 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 3 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,

⁴⁰The 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.

⁴¹In addition to the categorical analysis, we also use an alternative continuous specification with $\log(1 + CAR92_s)$. As shown in section 5, the results are robust to this alternative specification.

low-AIDS states increased their approval from 15.7% to 26.6%. 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 is a topic that has been of concern to many religions.⁴² 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. 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.

3.2 Cultural Change and Politics

As discussed previously in section 2, electoral politics and the debate on the ban of gay people from the military were pivotal events in 1992-93. There are various questions that are interesting to explore vis-a-vis the interaction of politics and cultural change. One

⁴²See, e.g., Long (2013).

question is whether Democrats in particular changed their views in this period. As we will see, the answer to this is affirmative. Given this, it is also of interest to ask whether the change in opinion associated with the AIDS epidemic can be attributed to politics in this sense.

We can examine the effect of politics in various ways. To begin with, we ask how individuals' 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.⁴³ Figure 9 shows the evolution over time of the share of SameSexApp for the two main party identifications.

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. They go from being 8pp more likely to approve in the '70s, to an additional 2.5pp in the '80s. In the '90s, independents are an additional 8pp more likely to approve than republican relative to the '70s. 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. The coefficient on this variable is also smaller, by about 13%, indicating that part of what this variable was picking up previously was the effect of partisan opinion on this issue.⁴⁴

⁴³We do a robustness check that recategorizes the two "near" independent responses as democrat and republican, respectively.

⁴⁴The findings on the importance of political party identification are in line with those of (Garretson,

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.

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 1988.⁴⁵ Figure 10 shows the evolution of the share of individuals who approve of same-sex relationships by Republican vs Democratic state. Column (3) introduces this variable – 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 (4) reintroduces the AIDS categories. As is clear from the table, individuals from Democratic states were some 5-6pp more favorable than those from Republican states in the '90s relative to the '70s. 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.

3.3 Cultural Change and Civil Liberties

Although we have interpreted the cultural change towards same-sex relationship in the '90s as resulting from the combination of the political debate and the AIDS epidemic, an alternative explanation might be that the US was undergoing a period of increased support towards civil liberties. To illustrate this possibility, Figure 11 plots 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 that case, one could hypothesize that the change in opinion towards same-sex relationships is simply a reflection of increased support for civil liberties. This, we will demonstrate, was not the case: the AIDS epidemic

2018) using a different data set (ANES).

⁴⁵These were calculated using data from David Leip's Atlas of U.S. Presidential Elections. <http://uselectionatlas.org>.

had an independent effect on cultural change towards same-sex relationships that is distinct from the expansion of civil liberties.

In what follows, we show: i. The relationship between exposure to AIDS epidemic and SameSexApp is not replicated with attitudes towards gay-related civil liberties; ii. On the other hand, attitudes towards civil liberties and gay-related civil liberties move jointly; iii. Furthermore, the evolution of civil liberties and the change in attitudes towards same-sex relationships do not co-move.

The presence of a civil liberties subject in the core module of the GSS is particularly useful as it asks the same set of questions over time related to civil liberties of different groups. To investigate the evolution of gay rights and civil liberties we will 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.

Constructing the Indices

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.⁴⁶ 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

⁴⁶The 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.

person who advocates doing away with elections and letting the military run the country.”

In total, we have 12 variables.⁴⁷ We recoded the answer to these questions, creating 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 12 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 four questions related to gay civil liberties. The index is the first component from the PCA, as it 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.⁴⁸ 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

⁴⁷These 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.

⁴⁸See the Appendix for details.

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 remain the same as in the main regression, and we cluster standard errors at the state level.

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 that changed 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.

4 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. As can be seen in Figure 14, 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

on average 8.7 percentage points more favorable than men. We now turn to exploring this gender differential more fully.

Figure 15 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. We next turn to examining whether the same relationship between the AIDS categories and SameSexApp exists when we examine males and females separately.⁴⁹

Columns (1)-(3) and (4)-(6) in Table 6 repeat the specifications of columns (2)-(4) 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.⁵⁰ 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.

An important conclusion emerges from Table 6: although both men and women are becoming more favorable to same-sex relationships over time, only women are responding to the AIDS epidemic differentially by AIDS rate category. The coefficient on the high-AIDS category indicates that women from states in that group increased their approval relative to those in the low-AIDS category by some 8.2 percentage points. 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.

We next turn to examining whether the same gender asymmetry exists for politics. Figure 16 shows the evolution over time of the fraction of individuals of each gender that

⁴⁹Exploring differences in responses by race would also be interesting but the sample size by state is too small to permit a meaningful analysis.

⁵⁰We 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, $\gamma_{H,80}^{female} = \gamma_{H,80}^{male}$, $p = 0.776$.

approve of same-sex relations by party identification. Clearly the opinion gap between Democrats and Republicans widens significantly more for women in the '90s than it does for men. Returning to the same exercise as in section 3.2 and comparing the results for men and women (columns (1) and (3)), 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. Men and women who identify as independent, on the other hand, are 10 and 6pp more in favor of same-sex relationships. The gap between male democrats and republicans increases by around 8pp in the '90s relative to the '70s, the increase in the partisan gap for women in the '90s is even more dramatic. Female democrats became an additional 22pp more in favor of same-sex relations relative to republicans in the '90s. The gap between female independents and republicans also increases in the '90s. Female independents become 11pp more likely to favor same-sex relations relative to independents in the '90s than what they were in the '70s; there is no statistically significant effect for male independents.

The results above show a steady increase in female Democrat's approval of same-sex relationships relative to republican women over time, culminating in a 22pp gap in the '90s. The partisan gap for men, on the other hand, culminates in a 15pp gap in approval. We next ask whether the reaction of women to the AIDS rate is captured completely by this identification. Columns (2) and (4) in table 7 reintroduce the AIDS categories. As can be seen, including both sets of variables does not affect the coefficients on party identification for either sex. Furthermore, residing in a high-AIDS state still has a statistically and economically significant effect in the '90s for women, although slightly reduced in magnitude. This finding points to the existence of additional factors driving the gender gap in opinion that are not captured by party identification but instead operate along the AIDS dimension.

Next, we can use the presidential election of 1988 as we did previously in section 3.2 (see Figure 17). The results are shown in columns (5)-(8) of the table. As is evident, once the AIDS categories are introduced there is no statistically significant effect from the presidential variable by state (Pres Dem).⁵¹

⁵¹We also created a continuous measure of a state's political leanings by using the ratio of votes for the republican vs democratic presidential candidate in 1988. The results were robust to this alternative specification.

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. For men, there is no effect of the AIDS categories on the approval of same-sex relationships whereas for women the relationship remains robust.

5 Robustness

5.1 Pre-existing State Characteristics

The fact that there are marked differences in approval rates across high vs low-AIDS states already in the '70s both for women and men (see Figure 15), 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 8 presents the results of this regression for the most complete specification of individual characteristics for all individuals, only men, and only women in columns (1)-(3), respectively. Men from a high-AIDS state are already 9pp more favorable than those from a low-AIDS state; women from high-AIDS states are 7pp more favorable.

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 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, by accounting for them, 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.

Columns (4)-(6) of Table 8 repeat the regressions of (1)-(3) but this time include the 1970s state-level attitudes-towards-sex variables, Premar70 and Pornlaw70. Introducing these variables effectively kills the significance of the AIDS categories in explaining the difference in opinions across individuals in the '70s. A one standard-deviation increase in Premar70 (0.12) is associated with an increase of about 3.5pp in the probability of approving of same-sex relationships for men and 4.3pp for women. A one standard-deviation increase in Pornlaw70 (.06) is associated with a 1.7pp increase in the probability of men approving of same-sex relationships and of 3.4pp for women.

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 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 7.5 pp (column (6)). There continues to be no differentiation among men’s approval rate by AIDS category. 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.

5.2 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 15 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 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.

Lastly, column 7 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.

6 Discussion

Our result shows an asymmetry between men and women. Why are women reacting more than men to the AIDS epidemic? One possibility 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. Using the Newsweek polling data that asked whether the individual had “a friend or acquaintance who is gay or lesbian,” Figure 18 decomposes the proportion of individuals who state that they have a gay friend or acquaintance by gender.⁵² To do so we use the following regression:

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

where D_{τ} 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). These regressions do not include state identifiers as these are largely absent from the data. Figure 18 reports the estimated coefficients $\gamma_{g\tau}$, providing evidence that women had around 10% more gay friends than men before the debate.

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.⁵³ 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

⁵²See section 2 for information on these polls.

⁵³See, e.g., Bell (1981) and Fehr (1996).

relationships, they are more likely to have gay friends/acquaintances. 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 SameSexApp 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.⁵⁴

As shown in Table 11 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).⁵⁵ 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.⁵⁶ 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 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

⁵⁴We also restricted the periods to the '80s and '90s and obtained similar results.

⁵⁵Including the AIDS category variable for this sample is not meaningful as there is insufficient variation (all but 4 states belong to the high category).

⁵⁶This exercise is at most suggestive: our sample has only 2 states in the low-AIDS category.

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 is that men 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.⁵⁷ *Ceteris paribus*, one expects a man whose mother worked to be less threatened by the blurring of traditional gender roles. 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 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:

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

⁵⁷As 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.

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 11 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 slightly greater in the '90s, but this difference is not statistically significant. Even if all men had been sons of working mothers in the '90s in the high-AIDS states, their approval would have been only 1.18pp 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.⁵⁸ In the specific case of attitudes towards same-sex relationships, the fact that women care more about their children and grandchildren (who could potentially be gay), could lead them to change their attitudes towards same-sex relationships more than men.⁵⁹ This would have required

⁵⁸See Croson and Gneezy (2009) for a review of the literature and see Giffin (2017) for altruism.

⁵⁹Evidence that women care more about their children comes from studies of how cash transfers are spent when given to wives rather than husbands (see, e.g., Attanasio and Lechene (2002) and Case and Deaton

women to understand 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).

7 Conclusion

The last few decades witnessed a dramatic change in public opinion towards gay people. This paper investigated the hypothesis that the AIDS epidemic and the ensuing political process led to this transformation. 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 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.

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

(1998) and evolutionary arguments (e.g. Edlund (2013)).

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.

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.⁶⁰ Second, from the 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 societal 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

⁶⁰As quoted by the NYT (Schmalz, 1992), Rahm Emanuel, then the Clinton campaign's national finance director, 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."

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?”

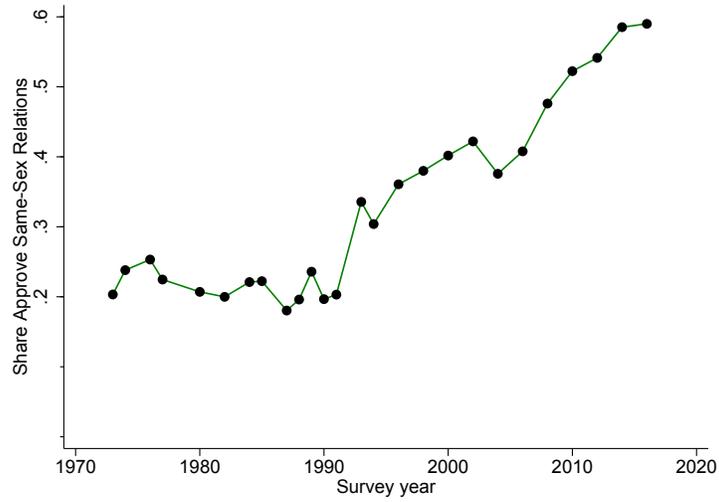


Figure 1

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**

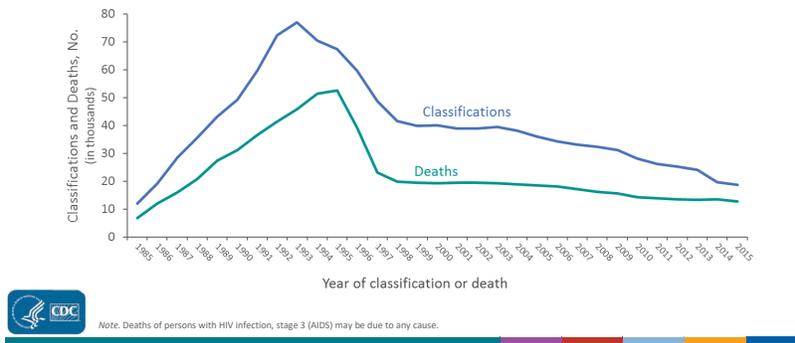


Figure 2

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

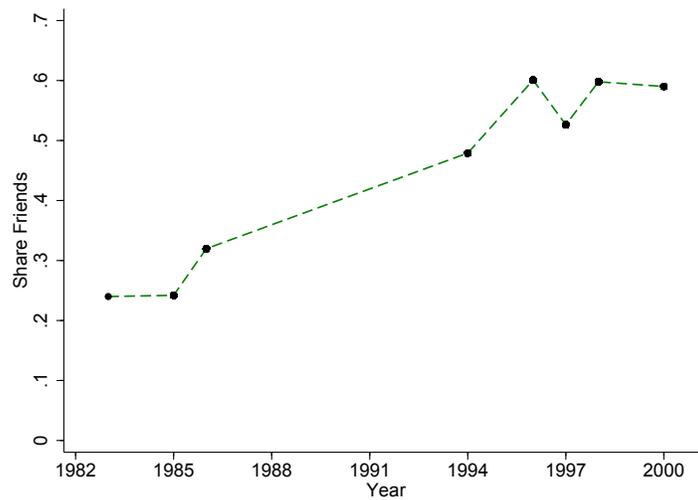


Figure 3

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.

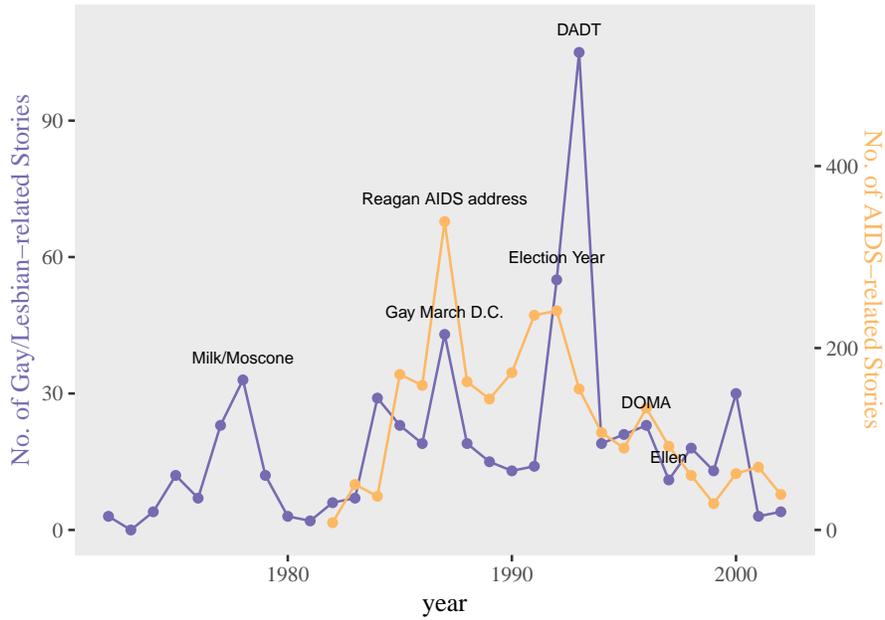


Figure 4

Evolution of the 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.

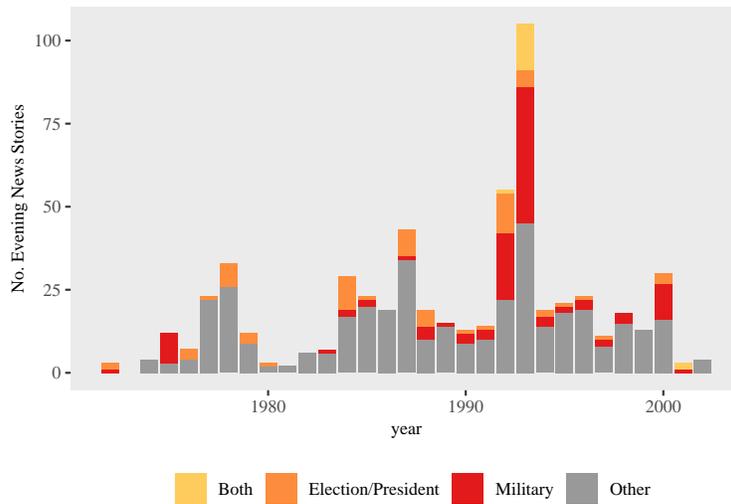


Figure 5

Evolution of the decomposition of the number of evening news stories related to the gay community into four mutually exclusive sets. The networks are ABC, CBS, NBC and the sets are: the military, the president, a combination of the president and the military, and “others.” Source: Vanderbilt News Archive. See the Appendix for more detail.

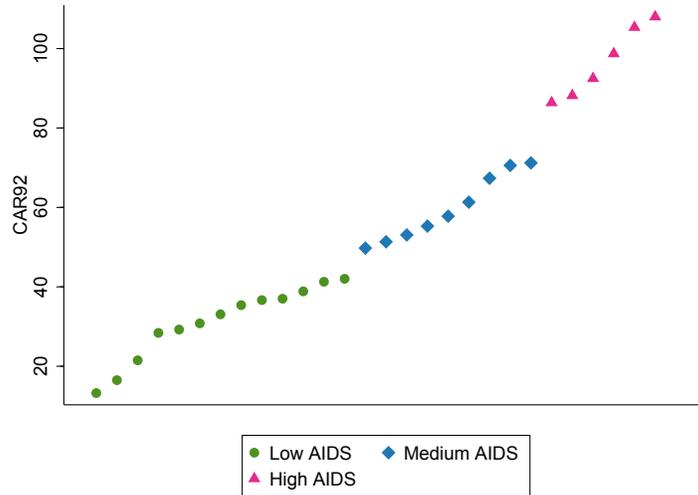


Figure 6

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.

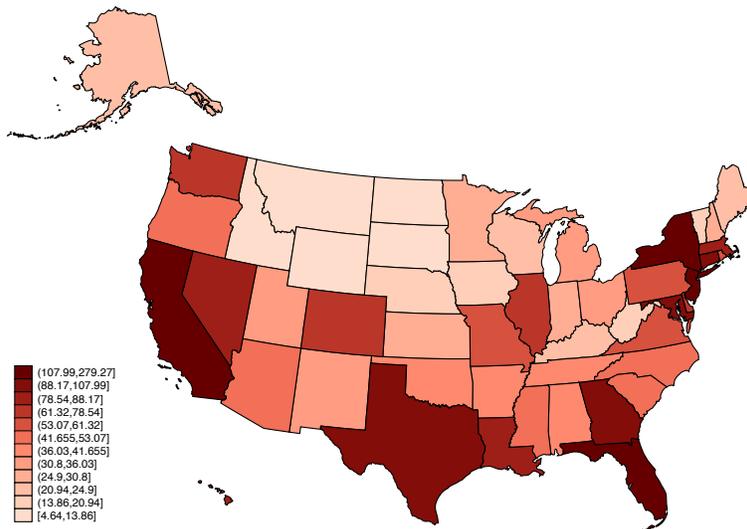


Figure 7

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

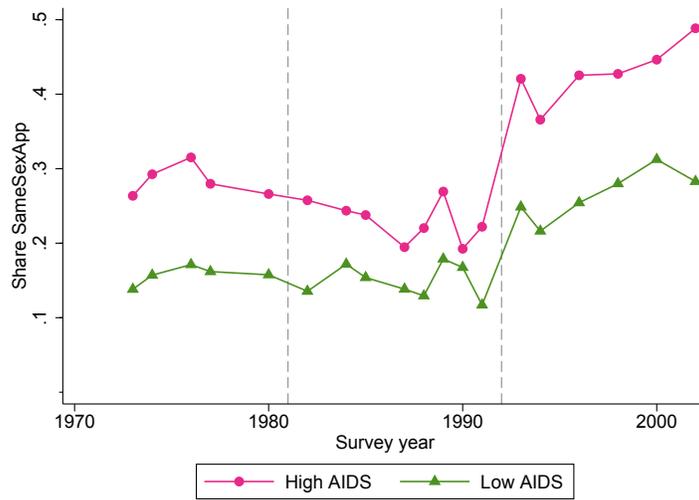


Figure 8

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.

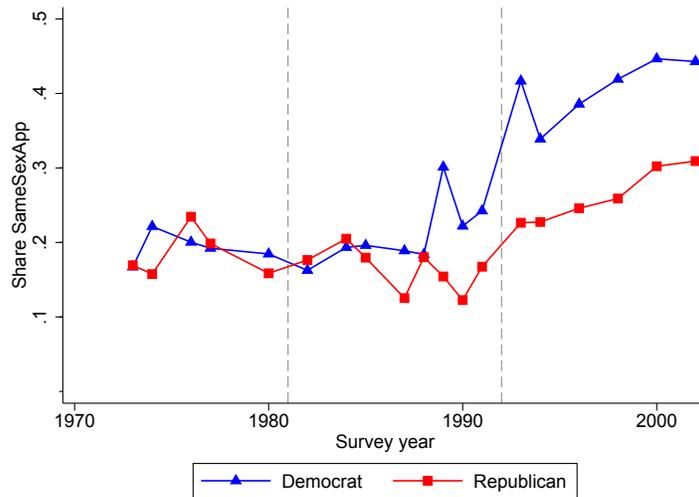


Figure 9

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.

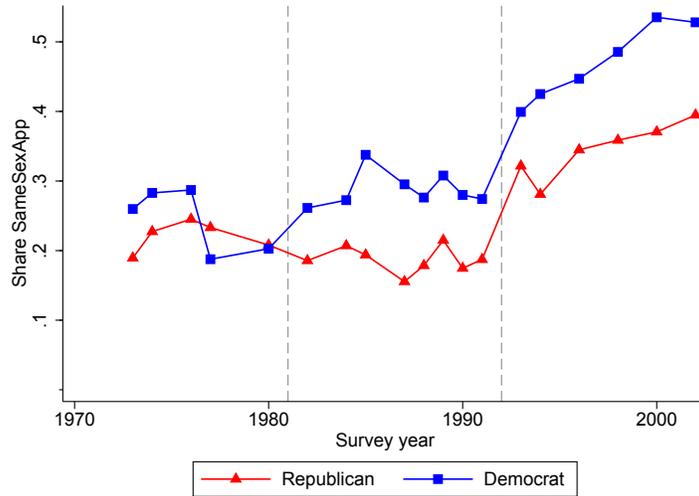


Figure 10

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.

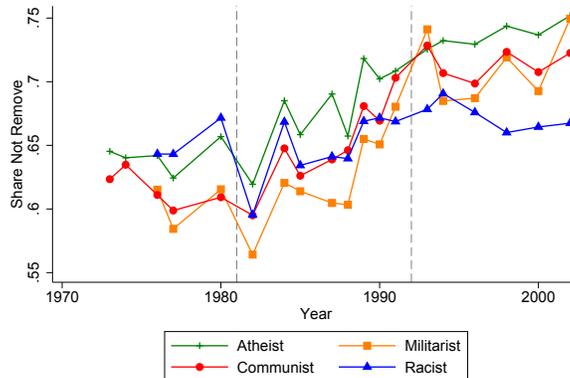


Figure 11

Graph of share of individuals that would not be in favor of removing a book from the library if it advocated homosexuality, militarism, communism, and atheism, respectively. GSS. See text for exact questions.

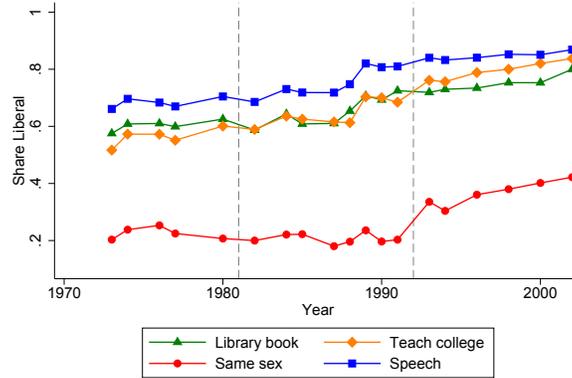


Figure 12

Share of GSS sample who take 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. Source: GSS.

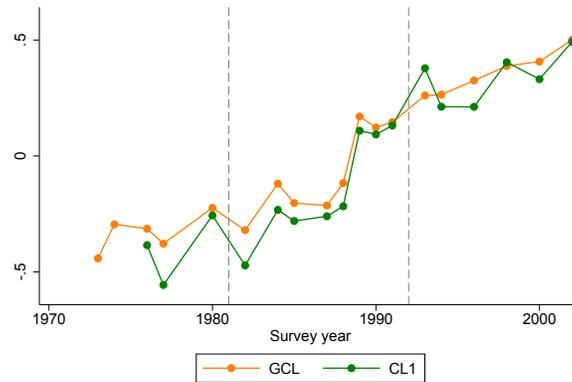


Figure 13

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

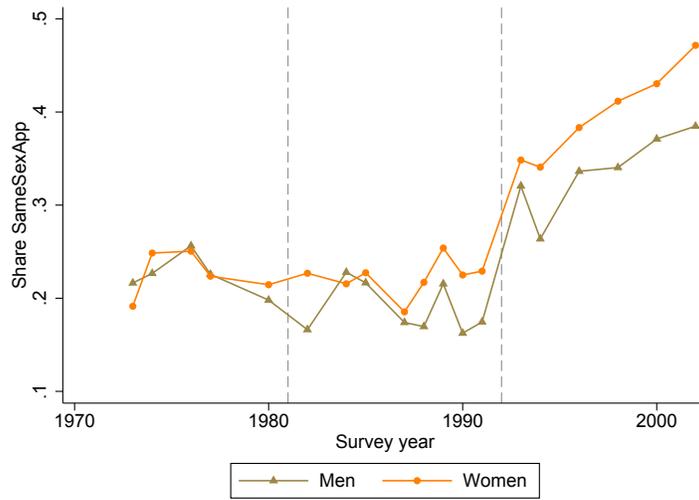


Figure 14: See notes to Figure 1.

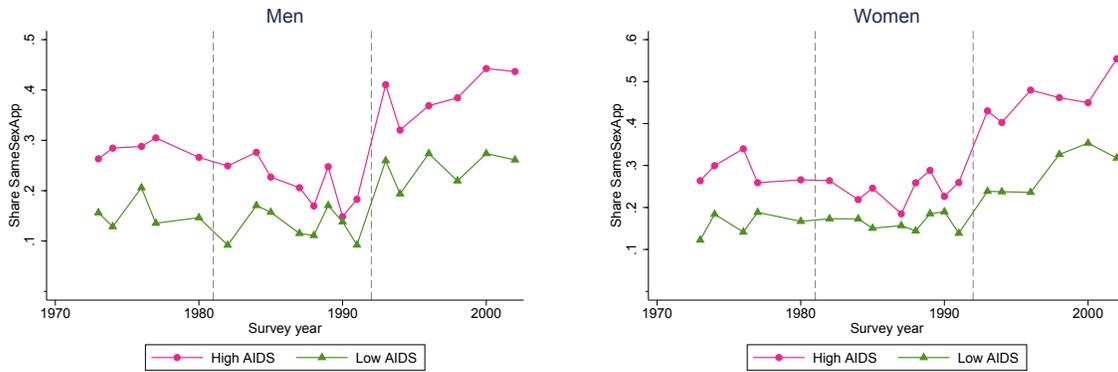


Figure 15: See notes to Figure 8.

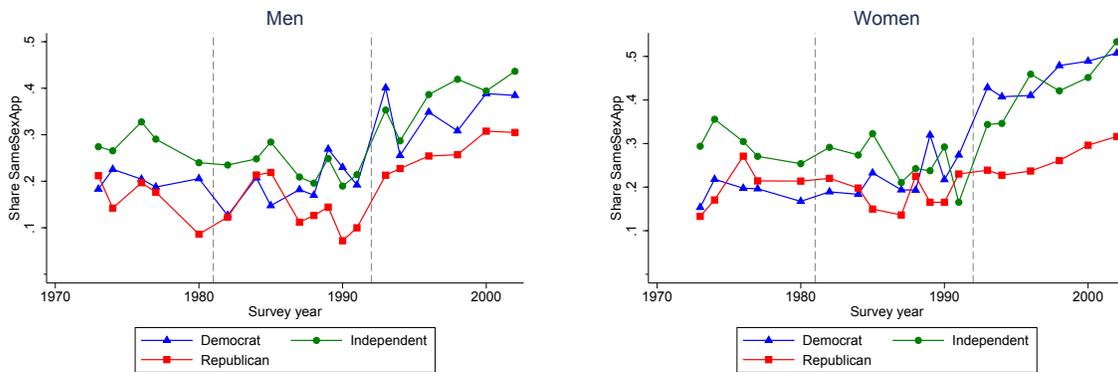


Figure 16: See notes to Figure 9.

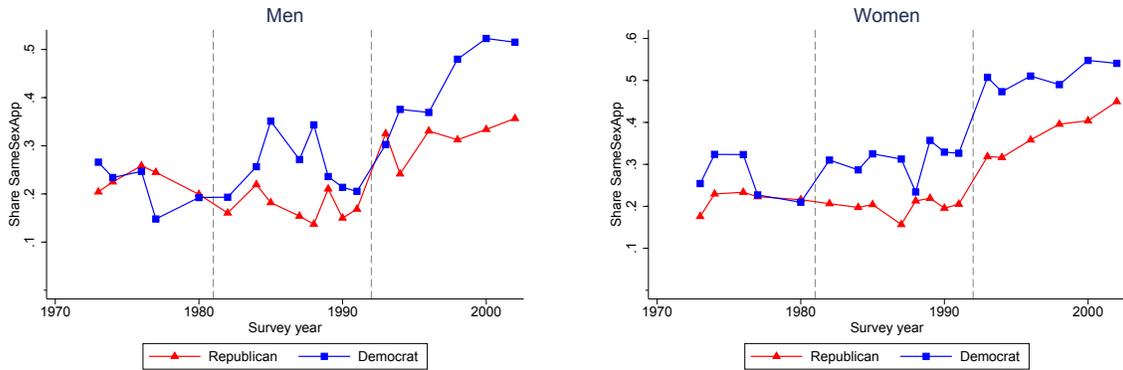


Figure 17: See notes to Figure 10.

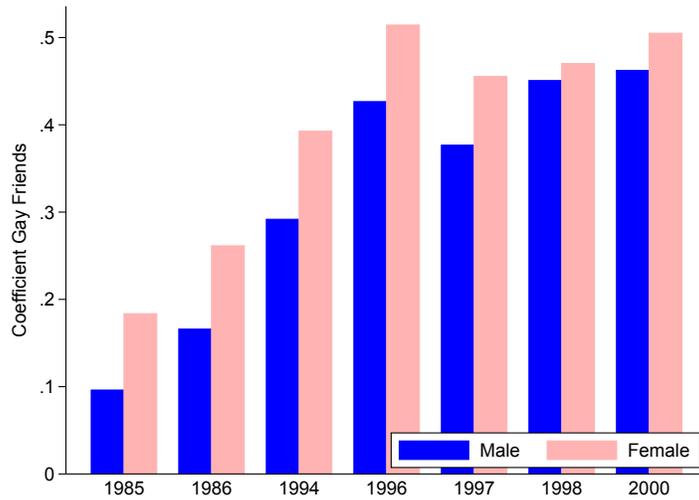


Figure 18

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).

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)
Black	-0.0350** (0.016)	-0.0827*** (0.012)	-0.0617*** (0.014)
Other	-0.0322 (0.081)	-0.0608 (0.082)	-0.0818 (0.080)
Black x '80s	-0.0576** (0.027)	-0.0517* (0.029)	-0.0515* (0.028)
Other x '80s	-0.0534 (0.077)	-0.0322 (0.077)	0.00480 (0.074)
Female x '90s	0.0709*** (0.011)	0.0740*** (0.011)	0.0611*** (0.012)
Black x '90s	-0.128*** (0.021)	-0.109*** (0.024)	-0.0966*** (0.023)
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)
Black	-0.0617*** (0.014)	-0.0541*** (0.015)	-0.0678*** (0.014)	-0.0602*** (0.016)
Black x '80s	-0.0515* (0.028)	-0.0401 (0.028)	-0.0542* (0.028)	-0.0437 (0.029)
Black x '90s	-0.0966*** (0.023)	-0.0800*** (0.022)	-0.106*** (0.024)	-0.0895*** (0.023)
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. 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)
	Party id	Party id	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)		
Med AIDS x '80s		0.00107 (0.030)		0.0118 (0.026)
High AIDS x '80s		-0.0239 (0.026)		-0.0222 (0.022)
Med AIDS x '90s		0.0306 (0.027)		0.0391 (0.026)
High AIDS x '90s		0.0473* (0.025)		0.0531** (0.025)
Pres Dem x '80s			0.0458 (0.031)	0.0496* (0.029)
Pres Dem x '90s			0.0596** (0.027)	0.0532* (0.030)
State & Year FE	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓
Observations	21300	21300	21727	21727
Adj. R sq	0.166	0.167	0.153	0.154

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." 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 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 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)
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. 2		-0.0676*** (0.020)	-0.0677*** (0.020)		0.00872 (0.006)
Civ. Lib. 1 x '80s		-0.0361*** (0.010)	-0.0359*** (0.010)		-0.0101** (0.004)
Civ. Lib. 2 x '80s		-0.0381 (0.027)	-0.0382 (0.027)		0.00129 (0.007)
Civ. Lib. 1 x '90s		-0.101*** (0.011)	-0.101*** (0.011)		0.000878 (0.005)
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: **Political Parties: Indiv and State**
 Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Men	Men	Women	Women	Men	Men	Women	Women
Independent	0.106*** (0.022)	0.106*** (0.022)	0.0630*** (0.013)	0.0626*** (0.013)				
Democrat	0.0718*** (0.020)	0.0720*** (0.020)	0.00864 (0.013)	0.00835 (0.013)				
Independent x '80s	0.00747 (0.022)	0.00805 (0.022)	0.0367 (0.022)	0.0369* (0.022)				
Democrat x '80s	0.0307 (0.025)	0.0307 (0.025)	0.0951*** (0.020)	0.0953*** (0.020)				
Independent x '90s	0.0442 (0.030)	0.0440 (0.030)	0.118*** (0.024)	0.114*** (0.025)				
Democrat x '90s	0.0817** (0.032)	0.0803** (0.032)	0.223*** (0.026)	0.220*** (0.027)				
Black	-0.0508* (0.025)	-0.0516* (0.025)	-0.0627** (0.024)	-0.0622** (0.024)	-0.0511* (0.027)	0.00444 (0.035)	-0.0730*** (0.021)	-0.0429* (0.021)
Other	-0.0996 (0.138)	-0.0998 (0.138)	-0.0327 (0.078)	-0.0326 (0.078)	-0.125 (0.127)	-0.0950 (0.124)	-0.0538 (0.071)	-0.0386 (0.071)
Black x '80s	-0.0537 (0.035)	-0.0529 (0.035)	-0.0863** (0.038)	-0.0865** (0.038)	-0.0363 (0.035)	-0.0522 (0.038)	-0.0544 (0.036)	-0.0513 (0.036)
Other x '80s	0.0410 (0.131)	0.0427 (0.132)	-0.0688 (0.077)	-0.0659 (0.077)	0.0725 (0.119)	0.0564 (0.118)	-0.0447 (0.067)	-0.0510 (0.068)
Black x '90s	-0.117*** (0.038)	-0.117*** (0.038)	-0.155*** (0.030)	-0.160*** (0.029)	-0.0867** (0.037)	-0.117*** (0.040)	-0.0918*** (0.026)	-0.105*** (0.025)
Other x '90s	-0.0898 (0.129)	-0.0933 (0.129)	-0.0925 (0.096)	-0.102 (0.097)	-0.0314 (0.118)	-0.0523 (0.114)	-0.0403 (0.087)	-0.0606 (0.089)
Med AIDS x '80s		-0.0165 (0.034)		0.0142 (0.031)		-0.00689 (0.035)		0.0133 (0.030)
High AIDS x '80s		-0.0254 (0.029)		-0.0261 (0.029)		-0.0363 (0.029)		-0.0311 (0.026)
Med AIDS x '90s		0.00279 (0.035)		0.0497* (0.027)		0.00617 (0.035)		0.0591* (0.030)
High AIDS x '90s		0.0157 (0.034)		0.0641** (0.025)		0.00556 (0.036)		0.0753*** (0.027)
Pres Dem x '80s					0.0551 (0.036)	0.0603 (0.040)	0.0385 (0.032)	0.0472 (0.035)
Pres Dem x '90s					0.0715* (0.037)	0.0679 (0.045)	0.0474* (0.025)	0.0301 (0.033)
State & Year FE	✓	✓	✓	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓	✓	✓	✓
Observations	9656	9656	11644	11644	9859	9859	11868	11868
Adj. R sq	0.155	0.155	0.177	0.178	0.143	0.133	0.162	0.157

For columns (1)-(4), 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." For columns (5)-(8), states are classified into Republican vs Democrat according to which candidate obtained the greater share of the public vote in the 1988 presidential election. Sources: David Leip's Atlas of U.S. Presidential Elections & GSS. See text for details. All specifications contain 10-year age interval dummies. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 8: **Attitudes in the 1970's**
 Dependent variable: SameSexApp

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Men	Women	All	Men	Women
Medium AIDS	0.0487* (0.027)	0.0612* (0.031)	0.0366 (0.026)	0.000877 (0.021)	0.0228 (0.029)	-0.0180 (0.022)
High AIDS	0.0855*** (0.029)	0.0997*** (0.030)	0.0741** (0.030)	0.00974 (0.022)	0.0389 (0.030)	-0.0124 (0.021)
Black	-0.0757*** (0.015)	-0.0495* (0.028)	-0.0943*** (0.023)	-0.0595*** (0.016)	-0.0383 (0.028)	-0.0732*** (0.023)
Female	0.00695 (0.009)			0.00736 (0.009)		
Premar70s				0.327*** (0.091)	0.292** (0.109)	0.356*** (0.089)
Pornlaw70s				0.447*** (0.133)	0.283* (0.164)	0.564*** (0.153)
Year FE	✓	✓	✓	✓	✓	✓
Res cat.	✓	✓	✓	✓	✓	✓
Income cat. & Educ	✓	✓	✓	✓	✓	✓
Observations	6259	2868	3391	6259	2868	3391
Adj. R sq	0.121	0.123	0.124	0.133	0.129	0.139

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. *** p < 0.01, ** p < 0.05, * p < 0.1

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

	(1)	(2)	(3)	(4)	(5)	(6)
	Men	Men	Men	Women	Women	Women
Medium AIDS x '80s	0.00672 (0.045)	0.0137 (0.036)	-0.00496 (0.034)	0.0404 (0.043)	0.0443 (0.033)	0.0383 (0.029)
High AIDS x '80s	-0.0216 (0.038)	-0.0145 (0.035)	-0.0177 (0.034)	0.00660 (0.034)	0.00945 (0.031)	0.00843 (0.028)
Medium AIDS x '90s	-0.00698 (0.045)	-0.000695 (0.038)	-0.0170 (0.035)	0.0545 (0.039)	0.0549* (0.032)	0.0557* (0.031)
High AIDS x '90s	-0.0217 (0.032)	-0.00460 (0.027)	-0.0216 (0.028)	0.0722** (0.030)	0.0830*** (0.025)	0.0750*** (0.025)
Premar70 x '80s	-0.290** (0.110)	-0.218** (0.099)	-0.126 (0.101)	-0.164 (0.142)	-0.121 (0.108)	-0.0599 (0.089)
Premar70 x '90s	0.115 (0.189)	0.200 (0.172)	0.236 (0.163)	0.0124 (0.168)	0.127 (0.140)	0.177 (0.140)
Pornlaw70 x '80s	0.306 (0.252)	0.236 (0.228)	0.126 (0.210)	-0.261 (0.272)	-0.284 (0.249)	-0.374* (0.220)
Pornlaw70 x '90s	-0.0214 (0.395)	-0.0546 (0.333)	-0.0189 (0.310)	-0.126 (0.347)	-0.230 (0.291)	-0.283 (0.281)
Black		-0.0826*** (0.025)	-0.0502* (0.027)		-0.0819*** (0.020)	-0.0700*** (0.022)
Other		-0.104 (0.140)	-0.120 (0.128)		-0.0290 (0.064)	-0.0542 (0.070)
Black x '80s		-0.0389 (0.035)	-0.0422 (0.035)		-0.0722** (0.035)	-0.0629* (0.036)
Other x '80s		0.0447 (0.129)	0.0649 (0.121)		-0.0996 (0.064)	-0.0433 (0.066)
Black x '90s		-0.0892** (0.038)	-0.0845** (0.036)		-0.118*** (0.025)	-0.0993*** (0.026)
Other x '90s		-0.0742 (0.125)	-0.0421 (0.117)		-0.0863 (0.082)	-0.0536 (0.086)
State & Year FE	✓	✓	✓	✓	✓	✓
Res cat.		✓	✓		✓	✓
Income cat. & Educ			✓			✓
Observations	9859	9859	9859	11868	11868	11868
Adj. R sq	0.0683	0.108	0.143	0.0835	0.135	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. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Region	Exclude NY	Exclude MT	Alt Approve	State Trend	Cont.	Weighted
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	-0.0679*** (0.021)	-0.0807*** (0.020)	-0.0694*** (0.021)	-0.0383** (0.015)	-0.0727*** (0.021)	-0.0712*** (0.022)	-0.0783*** (0.021)
Other	-0.0528 (0.070)	-0.0149 (0.066)	-0.0524 (0.070)	-0.0252 (0.058)	-0.0568 (0.068)	-0.0534 (0.070)	-0.0759 (0.096)
Black x '80s	-0.0643* (0.037)	-0.0326 (0.030)	-0.0594 (0.036)	-0.0484 (0.031)	-0.0549 (0.036)	-0.0565 (0.036)	-0.0346 (0.035)
Other x '80s	-0.0401 (0.067)	-0.0662 (0.068)	-0.0436 (0.067)	-0.0780 (0.066)	-0.0388 (0.065)	-0.0411 (0.066)	-0.0105 (0.096)
Black x '90s	-0.101*** (0.024)	-0.0915*** (0.027)	-0.102*** (0.026)	-0.124*** (0.019)	-0.103*** (0.025)	-0.0997*** (0.027)	-0.0757*** (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)	-0.0520 (0.086)	-0.0315 (0.108)
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

Table 11: **Friends and Macho Attitudes**

	(1)	(2)	(3)
	Men	Women	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. 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

Online Appendix

News Analysis

To construct the variables related to Figures 4 and 5, we use the Vanderbilt Television News Archive (VTNA) which records broadcasts from the five largest U.S. national television networks. These include ABC, CBS, CNN, NBC, and Fox News. It records news broadcasts as televised, going as far back as August 5, 1968. We restrict our analysis to the “big three” networks: ABC, CBS, and NBC.⁶¹

Our data set is constructed by searching for news broadcasts that include the words AIDS or HIV. This yielded 2787 news items. The AIDS epidemic appears for the first time in our sample in October 6th 1982 – two months after the CDC coined the term AIDS, in an NBC evening news segment titled “Killer Disease: AIDS”.⁶² We constructed an additional data set that covered all the news stories that included the words homosexual(s), gay(s), or lesbian(s), yielding 589 items.

PCA

The Gay Civil Liberties (GCL) index is the first component of the three questions described in Section 3.3. 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

⁶¹We exclude CNN and FOX News as these launched in 1980 and 1996, respectively.

⁶²The CDC coined the term AIDS - Acquired Immune Deficiency Syndrome – at the end of July 1982. The news segment lasted two minutes and illustrates the lack of knowledge surrounding the disease: “(Miami Beach, Florida) [Walter SCOTT - comments on disease.] Incred. occurrence of acquired immune-deficiency syndrome (AIDS), originally found only in male homosexuals and drug addicts, and now spreading to others, examined. Scott’s case discussed. Current status of disease’s nationwide. impact outlined on screen. [Centers for Disease Control spokesperson Dr. Harold JAFFEE - isn’t surprised that disease has spread to general population.] Possible cause of disease considered.” See <https://tvnews.vanderbilt.edu/broadcasts/520586> for more information.

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. 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.

7.1 Appendix Figures and Tables

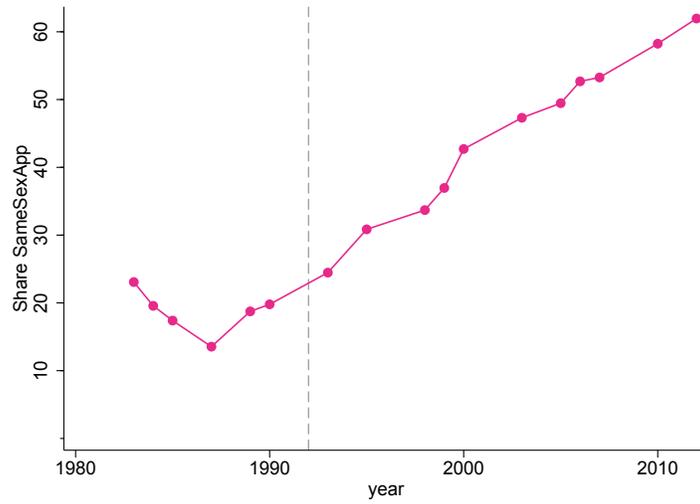


Figure A1

Evolution of share of UK population who answered “Never Wrong” or “Sometimes Wrong” to the question “Is it wrong for same-sex adults to have sexual relations?”, from 1983 to 2012. Source: NatCen. from Park and Rhead (2013).

Appendix Table 1 - **Political Parties: Alternative Def**
 Dependent variable: SameSexApp

	(1) All	(2) All	(3) Men	(4) Men	(5) Women	(6) 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)
Female	0.00721 (0.008)	0.00733 (0.008)				
Female x '80s	0.0336*** (0.011)	0.0337*** (0.011)				
Black	-0.0690*** (0.014)	-0.0688*** (0.014)	-0.0623** (0.025)	-0.0630** (0.025)	-0.0745*** (0.023)	-0.0739*** (0.023)
Black x '80s	-0.0714** (0.029)	-0.0716** (0.029)	-0.0506 (0.037)	-0.0499 (0.037)	-0.0838** (0.037)	-0.0841** (0.037)
Female x '90s	0.0517*** (0.012)	0.0512*** (0.012)				
Black x '90s	-0.137*** (0.025)	-0.140*** (0.024)	-0.124*** (0.038)	-0.124*** (0.037)	-0.148*** (0.031)	-0.152*** (0.030)
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. 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 Rights

	Men				
	(1) Gay Rights	(2) Gay Rights	(3) Gay Rights	(4) Approve	(5) Approve
Black	0.173* (0.096)	0.286*** (0.089)	0.293*** (0.087)	-0.0496* (0.027)	-0.0258 (0.039)
Black x '80s	-0.224 (0.137)	-0.102 (0.107)	-0.110 (0.104)	-0.0395 (0.035)	-0.0552 (0.041)
Black x '90s	-0.345*** (0.123)	-0.174 (0.122)	-0.185 (0.120)	-0.0911** (0.036)	-0.0627* (0.035)
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. 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. 1 x '90s		-0.0885*** (0.016)	-0.0892*** (0.016)		-0.00742 (0.006)
Civ. Lib. 2 x '90s		-0.0563* (0.032)	-0.0559* (0.033)		-0.0361*** (0.013)
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. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1

Appendix Table 4 - Civil Liberties and Gay Rights

	Women				
	(1) Gay Rights	(2) Gay Rights	(3) Gay Rights	(4) Approve	(5) Approve
Black	-0.0878 (0.087)	0.00224 (0.095)	-0.000252 (0.095)	-0.0702* ** (0.021)	-0.0784** (0.034)
Black x '80s	-0.0582 (0.093)	0.0415 (0.084)	0.0457 (0.084)	-0.0581 (0.036)	-0.0305 (0.036)
Black x '90s	0.0490 (0.090)	0.0916 (0.090)	0.0904 (0.094)	-0.101* ** (0.026)	-0.0740* (0.043)
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. 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. 1 x '90s		-0.113* ** (0.016)	-0.112* ** (0.016)		0.00857 (0.005)
Civ. Lib. 2 x '90s		0.0259 (0.031)	0.0260 (0.030)		0.0206* (0.011)
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. Robust clustered standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1