

# Contextualizing Change in Public Opinion: Marriage Recognition for Lesbian and Gay Couples in the States, 1992–2011

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## Abstract

Public opinion favoring equal rights for gay men and lesbians has rapidly changed in recent years. Nationally, a majority of the public approve of marriage recognition for gay and lesbian couples. This is contrary to a popular theme about age cohort replacement, where arguments in both academic and popular media would expect much slower change than is observed. Dawn Michelle Baunach (2012) attributes such rapid change to a genuine cultural shift—a phenomenon no measurable variable can explain. These national evolutionary trends overlook the differences of opinion within the nation. Are some states experiencing a cultural shift more rapidly than others, and if so, why? I show that opinion change is quite variable across time and between states. I explain such heterogeneity by analyzing demographic, institutional, and historical data. As a result, the factors that motivate the cultural shift in favor of gay rights are both a process of time and context and little to do with cohort replacement.

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# 1 Introduction

The United States is undergoing a sexual revolution in an unforeseen way: the politics of gays and lesbians have taken center stage in many political arenas, even receiving many considerable nods by the Democratic Party at their national convention in 2012 (Committee et al. 2008). Residents of four states in the November 2012 election cycle weighed in on the issue of marriage recognition for gay and lesbian couples,<sup>1</sup> and Maine was the first state to willingly pursue a statewide ballot measure as opposed to reactively doing so as in many other states. All four states decided in favor of marriage recognition. These developments are sudden especially when considering that Maine rejected marriage recognition only three years earlier. In addition, the polling trends on marriage recognition indicate that a majority in the nation now support the issue (see Figure 1). These changes are quite stunning since public opinion polls indicated sexual minorities as one of the most powerless social groups, only outranking criminals, undocumented workers, and religious minorities (e.g., Ingram, Schneider & DeLeon 2007). Public opinion research on the topic did not expect this change—marriage attitudes were consistently showing a majority against marriage, and this was not expected to change in the near future (Lofton & Haider-Markel 2007, Segura 2005, Yang 1997). Figure 1 is of weighted averages of polling results on marriage since 1992. An analysis from 1992 to the start of the new millennium indicates somewhat erratic but consistently disapproving opinions, as in the first panel of the figure, and a trend line predicts a weakly positive and statistically insignificant change over time. However as the second panel of the figure indicates, opinions have since been on an upward and curvilinear trajectory. These changes are unexpected.

Given that long-term change in public opinion is expected to move slowly—the primary source of change in many social attitudes is cohort replacement (e.g., Inglehart 1977) because people generally do not often change their opinions as they get older (Krosnick 1991, Cutler & Kaufman 1975, Davis 1992, Firebaugh & Davis 1988, Sherkat et al. 2011, Treas 2002, Wilson 1994)—it is then a puzzle as to why and how public opinion has shifted quickly on marriage recognition. Adding to the puzzle, social issues such as marriage have generally been thought of as symbolic, “easy” issues (Carmines &

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<sup>1</sup>Subsequent uses of “marriage recognition,” “same-sex marriage,” and “gay marriage” are all used interchangeably with marriage recognition for gay and lesbian couples.

Stimson 1980). Individuals who decide on these issues would be less likely to change their views, and they would more likely use these types of issues to decide how to vote. Studies unraveling this mystery indicate that cohort replacement may not necessarily be the only explanation for changing policies and attitudes toward gays and lesbians (Andersen & Fetner 2008, Lewis & Gossett 2008) and only explains about one-third of the change over time for marriage specifically (Baunach 2011, Baunach 2012).

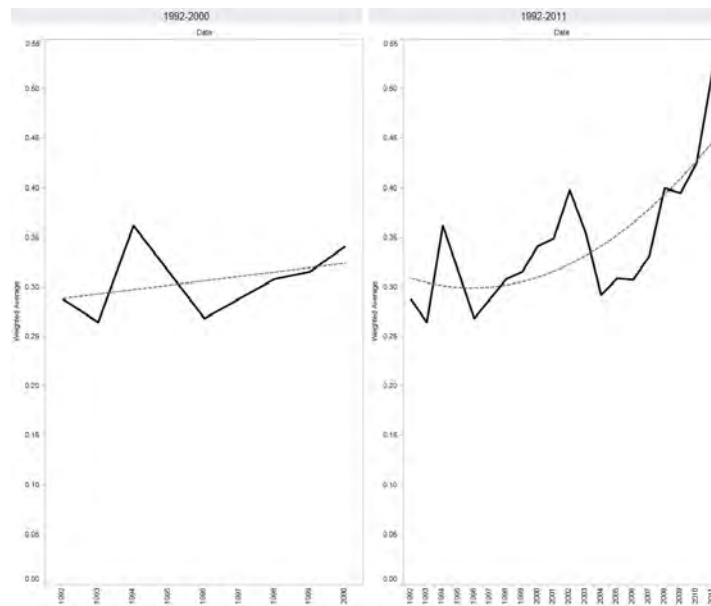


Figure 1: Trends on Marriage Opinion Nationally

Cohort replacement as a theory is tractable and has gained ground as an explanation for changing opinions beyond those in academic research. During the recent marriage campaigns and in response to them, younger generations were ascribed to have “won the day” while seniors were stalwarts of an older era (Brownstein 2012, Enten 2012). Younger generations replacing their seniors, at least in the case of California, explain about half of the change in opinions over time (Lewis & Gossett 2008). National studies continue to show that cohort replacement is a viable theory for explaining opinion change, but it is incomplete. Recent research indicates that people are changing minds within cohorts (Lewis & Hatalsky 2012). With millions of dollars being spent on state marriage campaigns, there is a strong belief that people are persuadable. Campaigns make these investments to a belief that the right message

may resolve value conflicts individuals have regarding marriage. Academic research facilitates this belief and shows that on gay rights, people are most likely to be ambivalent due to value conflicts (Alvarez & Brehm 2002, Craig, Martinez & Kane 2005).

The theory of cohort replacement, though tractable, lacks agency. Theories of attitude stability on symbolic, easy issues imply that those within age cohorts will not change their opinions (Carmines & Stimson 1981). As younger cohorts are brought up into a social setting where sexual minorities are positively presented in mass media and other settings, the controversy over LGBTs rights issues will subside. This theory is problematic because it proscribes any form of social and political activism. If younger cohorts are more accepting, then the best strategy for those who are a part of the LGBT social movement is to sit and wait. The theory of cohort replacement relates to changing contexts, younger generations coming of age with a different context. But older cohorts are also a part of that changing context, and the theory of cohort replacement also holds harmless those older cohorts, writing them off as victims of their own time. With national trends increasing at an unexpected pace, it is difficult to think that cohort replacement accounts for such change.

Even with a national majority in favor of marriage recognition, only a handful of states have legalized marriage for gay and lesbian couples. There is substantial heterogeneity within the United States in regards to the types of policies that protect gays and lesbians. The politics of gay rights is one that is often determined by state and local governments (e.g., Button, Rienzo & Wald 2000, Dorris 1999, Klawitter & Hammer 1999, Stone 2012)—it is more rare for national political institutions to decide on the rights of gays and lesbians, especially with respect to marriage recognition. This may well explain why a national majority in favor of marriage recognition does not equate to a majority of states instating marriage at the ballot box. It is also the reason that many attempts to ban or pass marriage in the states have failed at the dismay of the gay and lesbian rights movement (see Lewis 2012). Since the “battleground” for marriage continues to be at the state-level, it is critical to understand what public opinion is and how it has changed at that level of analysis. As Greg Lewis and Seong Oh (2008) note, “[o]pinion varies enormously across states” (p. 51), and in studying the trends across states, I find that there is substantial variability both across time and space .

What role may political institutions play in these changes? And more specifically, have the failings at the ballot box on marriage recognition ac-

tually started a dialogue among people that they never would have had? In essence, the salience of marriage recognition is the beginning of the process of changing the image of the issue (Baumgartner & Jones 1993). Without such importance and cognitive processing on the issue, it would not be visible enough to incur attitude shifts. Political institutions, elite actors, and information have roles to play and the direct initiative or referendum, which has been the institutional tool of the religious right to roll back and take preventative measures against the LGBT rights movement (Stone 2012), is the mechanism obligating residents to be exposed to messages and information about minorities they would have otherwise not received.

Using all the relevant surveys from iPOLL at the Roper Center for Public Opinion Research, I generate dynamic public opinion estimates for each state to analyze how opinion has changed on marriage recognition. I show from 1992 to 2011 that opinion change is quite variable between states. I explain such heterogeneity by analyzing demographic, institutional, and historical data. As a result, the factors that motivate a cultural shift in favor of gay rights are both a function of time and context. Cohorts actually explain very little of the variation, but national and statewide contexts do affect the likelihood someone is in a favor of marriage recognition. The following section will review previous studies on public opinion to situate this paper in a broader discussion on trends analyses on LGBT rights. To motivate the analysis, research questions are posed that linger from the literature reviewed. I then present the methods used to analyze the data and the results from the analyses. The results of the analyses suggest that states condition the applicability of cohort replacement as a viable theory and attenuate arguments that a uniform cultural shift has occurred in the United States leaving open the role the direct initiative has played in such changes over time.

## 2 An Immeasurable Cultural Shift

Extensive research using survey data collected across decades provides insight as to what is going on at the individual level of public opinion. Most pertinent to this study are the works of Jeni Loftus (2001) and Dawn Michelle Baunach (2011, 2012). Both authors resolve that cultural or cultural ideological shifts explain the variation in their models. I seek to add to their findings by providing an institutional context to them.

Jeni Loftus (2001) set her aim on explaining general attitudes toward

homosexuality. She found that as sexual liberalism tended to increase that there was a decrease in the moral disapproval of homosexuality. Loftus (2001) characterizes many of the individual factors that have mattered over time, and she includes national demographic data to provide some leverage on the role diversity plays in influencing the cultural shift. Loftus (2001) finds that demographic and individual factors do influence an ideological cultural shift. Particularly, as the country has become more diverse and urban, Americans lessened in their moral objections to homosexuality.

Dawn Michelle Baunach (2011; 2012) employed a different research task solely looking at marriage recognition, and she employed a different methodological scope. As opposed to Loftus (2001), Baunach (2011; 2012) does not employ any contextual factors that might influence individual opinions. Instead, Baunach relies solely on the individual level factors that may influence marriage recognition opinions. Using decomposition analysis, Baunach (2012) shows how the contemporary effects explaining marriage opinions (e.g., gender, religion, race, partisanship, etc.) do not really become effectual until the mid-1990s. Since most variables did not become significant until later years, Baunach claims that attitudes about marriage recognition were for the most part negative. It is only over time that attitudes became less widespread and more localized. These localized attitudes explain why contemporary explanatory variables that explain gay rights opinions are predictive (e.g., Brewer 2008). Cohorts comprise about one-third of the variation in marriage opinions, and by replacing them, the cohorts currently in the electorate have more localized, unique attitudes. Also, she concludes that most of the movement over time is in the constant of her regression models meaning that unobserved variables likely affected marriage opinions. As opposed to concluding that the question remains as to what may potentially explain the variation, Baunach concludes that this is evidence of a cultural shift: “the results suggest that changing attitudes toward same-sex marriage reflect a cultural shift as is evidenced by the strong effect of the constant in the decomposition analysis” (p. 376). Baunach (2012) may be premature in regard to the extent to which a cultural shift is immeasurable. Her findings leave an explanation wanting.

## 3 Context and Public Opinion

The previous research on the change over time in public opinion on gay marriage has employed multiple analyses at multiple levels. Depending on the level of analysis, researchers have made different findings. Most studies attempt to explain change in public opinion via national survey data (Andersen & Fetner 2008, Baunach 2011, Baunach 2012, Sherkat et al. 2011, Hicks & Lee 2006) or national summaries of survey data (Stoutenborough, Haider-Markel & Allen 2006). Once taken to the state level, all of the analyses switch from explaining variability in public opinion to using such variation to explain policy effects using either estimates or proxies (e.g., Barclay & Fisher 2003, Brace et al. 2004, Lewis 2005, Lewis & Oh 2008, Lax & Phillips 2009*a*). There has yet to be a study that places the variation in marriage opinions over time and between states on the left hand side of the equation. The lack of study is likely due to the unavailability of reliable rolling opinion estimates (e.g., Pacheco 2011) or reliable methods to address these questions (e.g., Yang 2006; Wilkes and Corrigan-Brown 2011). Though previous research has yet to study these dynamics at this level, they are informative to situating the potential explanations for opinion change that have less to do with cohorts and more to do with contexts.

### 3.1 Institutions

The interplay between political institutions and public opinion is dynamic. There is evidence that changes in public opinion are reflected in policy, and these policy changes induce a shift in public opinion (Johnson, Brace & Arceneaux 2005, Page & Shapiro 1983, Stimson, MacKuen & Erikson 1995, Wlezien 1995, Wlezien & Soroka 2009). These thermostatic models indicate that public opinion is in part endogenous to the outcomes of institutions. Any attempts to explain change in public opinion need to include an assessment of the contexts of different political institutions. The institutional context may condition the likelihood people consider the rights of gays and lesbians, which may affect their perceptions of marriage recognition.

#### 3.1.1 Courts

The role of courts in shifting public opinion has been a contested topic. Some empirical research has put in doubt that courts can bring about social

change; thus, little evidence of public opinion shifts due to court opinions (Rosenberg 1991). However on LGBT rights, James Stoutenborough and colleagues (2006) contend that public opinion not only follows the decisions of the Supreme Court but that these opinions shift in the direction of the opinion, which would be contrary to a thermostatic model. Other theories posit that raising the salience of LGBT rights either through court decisions or the policy process will always result in a negative response (Donovan, Wenzel & Bowler 2000, Green 2000, Haider-Markel & Meier 1996). Given such disagreement in the literature, the effects of court decisions either at the state or national level remain unclear.

### **3.1.2 Policies**

The policies that a state develops regarding the treatment of LGBTs are both reflective of and consequential to public opinion. The thermostatic models previously referenced would predict that public opinion be a part of the interplay of opinion and policy. States do not follow the opinions of their residents in a congruent fashion. Jeffrey Lax and Justin Phillips (2009a) showed that on issues such as marriage recognition that there is actually a conservative bias ; it would take more than a majority within the state to approve of marriage recognition before it becomes policy. Also as policies develop, they are more likely to garner more increasingly negative public attitudes if the scope of the policy begins to expand (Haider-Markel & Meier 1996). Given the interplay between policy and public opinion at the national level (Stimson, MacKuen & Erikson 1995, Wlezien 1995) and the state level (Brace et al. 2002, Johnson, Brace & Arceneaux 2005), it is likely the passage of a state policy regarding LGBTs affects public opinion on related policies, even if passage of such policies may not be fully reflective of the entire state (Lax & Phillips 2011).

### **3.1.3 Partisanship**

There have been some arguments that partisan politics in the United States is being redefined by gay rights issues and social paradigms of the family structure (e.g., Cahn & Carbone 2010, Fisher 2008).<sup>2</sup> The partisan divide

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<sup>2</sup>In a similar regard, Gelman et al. (2008) make the case that the red state, blue state divide is evidenced in social issues opinions of affluent residents of the two state-types.



is also evident among political elites, as members of Congress are realigning more often along party lines than on religion in determining their vote on LGBT rights issues (Lublin 2005, Liu & Macedo 2005). High-profile partisan personalities in executive offices may potentially exert an influence on public opinion. When he was President, George W. Bush used marriage recognition as a candidate and party defining issue (Hillygus & Shields 2005, Lewis 2005). As parties are generally disciplined by the image they produce (Cox & McCubbins 1993, Cox & McCubbins 2005), the composition of state legislatures should likely have an impact on opinion just as they have had on marriage policy (Barclay & Fisher 2003).

### 3.1.4 Direct Democracy

One of the most fundamental aspects of gay marriage is that the issue has been widely voted on in popular referenda or initiatives. Residents of states with these initiatives are primed to think about marriage more than their peers. In evaluating presidential candidates, residents in states with a popular vote on marriage were more likely to cite the candidates stance on same-sex marriage as consequential to their presidential vote choice (Donovan, Tolbert & Smith 2008). The agenda-setting function of direct democracy may insert the motivation to take-up considerations on an issue that would otherwise not have been the case (Nicholson 2005).

News media and campaign ads flood the airwaves with an open discussion about same-sex marriage in states where the issue is up for a popular vote. What are the effects of this increased salience and information? Are people in marriage states more likely than not to consider marriage? Does this increased salience affect the probability individuals support same-sex marriage?

Anthony Downs (1957) theorizes the existence of an “issue-attention cycle”. This cycle occurs in five stages: (1) The pre-problem stage; (2) Alarmed discovery and euphoric enthusiasm; (3) Realizing the cost of significant progress; (4) Gradual decline of public interest; (5) The post-problem phase. Donovan et al. (2008) contend the issue-attention cycle is extended by direct initiatives or referenda this extended attention explains why voters in marriage ballot states were more likely to vote based on a candidates stance on marriage. The consequences of an extended attention cycle also explain the potential for attitude change. The sustained issue-attention will be at the third stage of Downsian cycle, after an initial shock and prior to

a gradual decline. The third stage of the Downsian cycle is where the most cognitive processing on an issue occurs; it is the stage at which attitude change is most likely to happen. The extension of the attention cycle allows initial, emotive reactions to policy changes to have a more sobering second thought (e.g, Lerner, Goldberg & Tetlock 1998).

Similarly, John Zaller (1992; 1996) explains in his RAS model that news media and elites establish a policy agenda. Direct initiatives are also a way to establish a policy agenda (Nicholson 2005). Unless an issue is salient enough to be discussed, then the expectation is for attitudes on the issue to remain stagnant (Baumgartner & Jones 1993). It is not until the image of the issue changes and a policy window opens that the policy is likely to change. Frank Baumgartner and Bryan Jones made the case that increase in public concern about an issue is among the first steps in inducing a policy shift.

Though the direct initiative has more often than not produced outcomes that have stymied the efforts of gay marriage advocates, the increased discussion around gay marriage has made it more of a reality and has made individuals think about gay marriage. For gays and lesbians, the increased importance around marriage actually made it more popular and believable to happen (Egan & Sherrill 2005).

Direct democracy increases the amount of information people need to have in order to determine a vote (Benz & Stutzer 2004, Bowler & Donovan 2002, Smith 2002). These information searches—though likely not done in an unbiased fashion (see Lau & Redlawsk 2006, Iyengar et al. 2008)—obligate the residents of states to think about an issue that they otherwise would not (Leduc 2002). Such thought processes make those individuals more susceptible to attitude change; whatever their initial response may have been, the thought processing on the issue lingers.

As political science research on framing effects show, a step individuals take in changing their attitudes on issues is receiving a strong message regarding an issue (Chong & Druckman 2007). These messages occur in an electoral environment, where competing messages leave most people ambivalent and persuadable (Chong & Druckman 2010, Hillygus & Shields 2009).

## **3.2 Population Characteristics**

Previous research also indicates that there are demographic and behavioral characteristics in the state that provide leverage on explaining the policies that get developed. Naomi Cahn and June Carbone (2010) contend these

differences are very real and emulate the difference between two different family paradigms. A “Red Family” paradigm exhibits conservative family structures where women are expected to marry at a younger age, and the nuclear family is the primary familial unit. The states with these paradigms generally have higher divorce rates. A “Blue Family” paradigm exhibits a greater variety of family structures, with more affluent and educated individuals choosing to marry later in life. These family paradigm structures describe different populations, and these populations are expected to have different policies in regards to supporting alternative familial structures. In addition, the family paradigms should also cohere with opinions about alternative familial structures, including marriage recognition.

In addition, Barclay and Fisher (2003) find the percent of college educated residents in a state negatively affects the likelihood of a state adopting an anti-marriage amendment. A host of other research designs have argued that racial diversity (Dorris 1999), urban density (Klawitter and Hammer 1999) and state wealth (Wald, Button & Rienzo 1996) to be population specific attributes that would be influential in the development of marriage policy.

From the research performed, the following questions remain unexamined or underexamined:

1. To what degree have attitudes toward marriage recognition changed over time?
2. Have attitudes changed in the same way across the states?
3. To what extent do nationwide and statewide events, demographics, and other time variant and time invariant factors affect public opinion?
4. Are cohorts explaining a significant source of variation in opinions on marriage recognition?

## **4 State–level Dynamic Public Opinion: Do States Matter?**

Having reliable estimates of state level public opinion eludes researchers of state politics. Ideally, periodic opinion polls from every state would provide the best estimates to track public opinion. However, such data do not exist

for every state though there are some notable public opinion research institutions rectifying this problem of missing data (e.g., National Annenberg Election Studies, Public Policy Institute of California, and YouGov! Polmetrix). These more nuanced data will give students of state politics more leverage to test theories; however, these data will not be able to characterize change from earlier time periods. Without ideal data, scholars have had to rely on proxies of state opinion to leverage inferences. These proxies usually rely on estimating the strength of the gay community and opinion of policymakers and then assume that such correlates cohere with overall opinion (Lewis and Oh 2008, p. 43; see also Barclay and Fisher 2003; Dorris 1999; Haeberle 1996; Klawitter and Hammer 1999; Wald et al. 1996). Even without ideal data, new techniques in public opinion estimation provide an opportunity to analyze state opinion.

## 4.1 Measurement

To measure dynamic state-level opinion, I used polling data available from publically available sources from 1992-2011. Each survey that contained a question about same-sex marriage and contained relevant demographic and regional data were used, which totals 121 unique surveys with 125,218 observations. Using the rolling estimate of public opinion as developed by Julianna Pacheco (2011) as a way of using multilevel logistic regression and poststratification (MRP; see also Lax & Phillips 2009b, Park, Gelman & Bafumi 2004), I estimated public opinion as a function of a respondents demographic characteristics and geographic location:

$$\begin{aligned} \Pr(y_{i,\tau} = 1) &= \text{logit}^{-1}(\beta_{i,\tau}^0 + \beta_{i,t}^1 * x_{i,\tau}^{female} + \beta_{i,\tau}^2 * x_{i,\tau}^{black} + \alpha_{j[i],\tau}^{state} + \alpha_{k[i],\tau}^{age} + \alpha_{l[i],\tau}^{education}) \\ \alpha_{j,\tau}^{state} &\sim N(0, \sigma_{state}^2) \text{ for } j = 1, \dots, 51; \\ \alpha_{k,\tau}^{age} &\sim N(0, \sigma_{age}^2) \text{ for } k = 1, \dots, 4; \\ \alpha_{l,\tau}^{education} &\sim N(0, \sigma_{education}^2) \text{ for } j = 1, \dots, 4; \\ \tau &= [t - 1, t + 1] \text{ for } t = 1992, \dots, 2010. \end{aligned} \tag{1}$$

As in the equation above, the opinion estimate for individual ( $i$ ) in state ( $j$ ) at time ( $\tau$ ) is a combination of the respondents basic demographic characteristics: gender, race, education, and age; geographic location; and time: pooled

across a three-year window.<sup>3</sup> The poststratification step is then conducted on the predictions from the model,  $\Theta_C^\tau$ . Using state population estimates from the U.S. Census, the predictions are poststratified to population frequencies of the demographic characteristics used in the model:<sup>4</sup>

$$\hat{Y}_j^\tau = \frac{\sum_{C\epsilon j} N_C^\tau \Theta_C^\tau}{\sum_{C\epsilon j} N_C^\tau}. \quad (2)$$

The benefit of this modeling approach is that it increases the reliability of estimates of states with smaller populations via partial pooling (Gelman & Hill 2006), and it provides reliable estimates with surveys that do not have large sample sizes (Lax & Phillips 2009*b*). The pooling across adjacent years produces estimates that are slightly smoothed. The tradeoff for additional observations for accuracy of estimates is not high (Pacheco 2011), and I use a small pooling window in consideration that larger windows would smooth over potential temporal fluctuations. As I provide in the following section, pooling the estimates across a three-year window does not mischaracterize the variation across years.

## 4.2 Estimates

The state level opinions span a nineteen year window for each state and Washington, DC. As described in Figure 2, over the years, there has been substantial variability between states. The histograms with normal density plots detail the type of change between years has been both a shift in the central tendency and spread of the estimates. The central tendency and variance of the estimates change over time, with the spread of the estimates narrowest in 1995 ( $\sigma^2 = 9.69$ ) and widest in 2008 ( $\sigma^2 = 87.02$ ). If there were any pretence that marriage opinions were changing uniformly across the states, then the histograms show that change has not been uniform. In addition, the spread in recent years is wider in comparison to previous years. As Baunach (2011, 2012) indicates, the issue of marriage has more recently become a salient social issue where attitudes have become more localized. Just as individuals have over time become more distinct and localized, the

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<sup>3</sup>Due to survey data limiations, the estimate for 1992 pools only 1993, as the availability for data prior to 1992 does not have geographic locations. For years with missing data, only two years were used instead of three.

<sup>4</sup>Poststratification estimates used weights from the American Community Survey to account for population shifts between decades.

Table 1: One Facet State by Year Analysis of Variance

Source	Sum of Squares	df	Mean Square
State	35,275.87	50	725.52
Year	16,919.47	19	890.50
State*Year, e	13,551.12	950	14.26
Total	66,746.45	1019	65.50

Variance Components (se)	
$\hat{\sigma}_{state}^2$	35.56 (7.25)
$\hat{\sigma}_{year}^2$	17.18 (5.67)
$\hat{\sigma}_{sy,e}^2$	14.26 (0.65)

histograms also indicate that states have become much more localized and unique in recent years.

A one-facet state-crossed-with-years analysis examines the sources of variation of marriage opinions. This type of analysis is developed through generalizability theory (see Raykov & Marcoulides 2010, pp.223–46), which examines the sources of variation in a study in order to move beyond an assumption that there is a single source of error.<sup>5</sup> The results of this analysis are in Table 1 and indicate that a major source of variation is between states. The variance components provide an assessment of the amount of variation in the model that is attributable to states and years. States make up 53.1% of the variation while periods only make up 25.6% of the total variation; the remaining variation 21.3% is attributable to state-year interactions confounded with error. These results indicate that states are a substantial source of variation on marriage opinions. This analysis is not definitive, as the analysis is on estimates that are pooled across years reducing annual variation. It does provide a upper bound, and the analysis shows that states account for a substantial portion of change.

In addition to the spread of the states across years, I convey change within the states in Figure 3. The opinion estimates are provided for each state with raw estimates and a lowess trend line. As evidenced from the trends, states have had different trajectories on their respective opinions on marriage recognition. Some locations have had a largely an upward trajec-

<sup>5</sup>Another way of viewing this analysis is via a fully-identified analysis of variance (ANOVA).

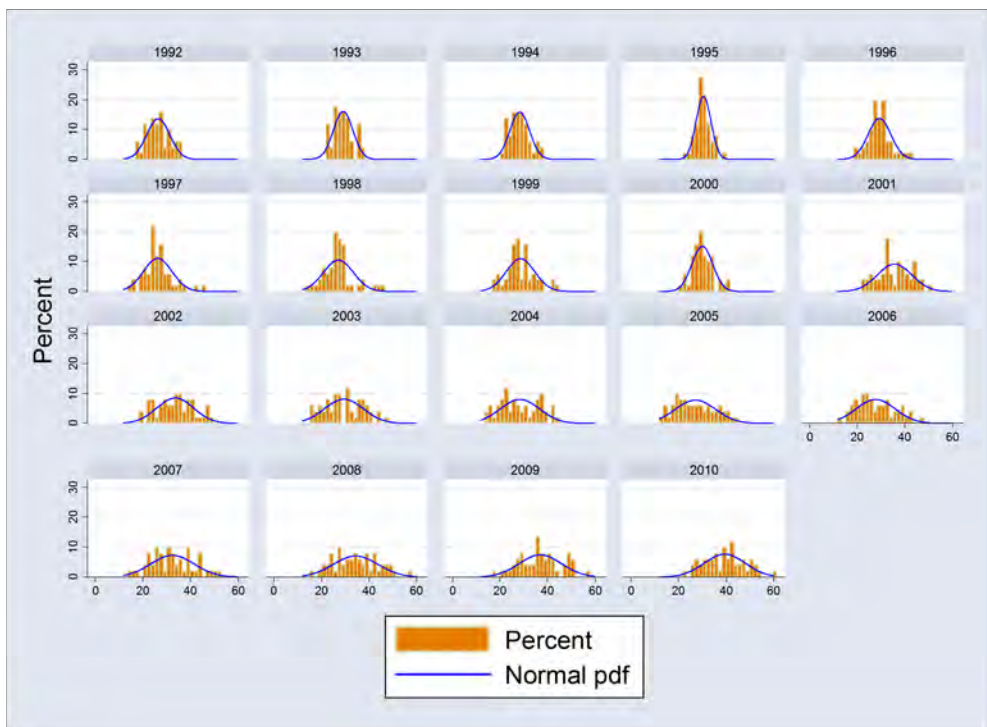


Figure 2: Histograms of marriage opinions by years across states

tory such as California and the District of Columbia. Other states have experienced minimal change such as South Carolina and Utah. Just as some like Rhode Island have had a largely a linear trend, there are states that take punctuated upward trend such as South Dakota. These differences make all the more clear that context is a factor that impacts opinions on marriage recognition. Unaccounted covariates and potential explanations at the state level may have made the national opinion studies underspecified—leaving the nefarious cultural shift in both the constant and error terms of the structural models. Having provided evidence that states matter in the analysis of marriage opinions, I now pivot to the potential explanations from the previous literature that explain such change.



Figure 3: Trends in Opinion by State



## 5 Explaining Change in the States

With evidence that there is substantial variability both across time and between states, I turn to analyzing the potential individual and contextual factors that explain such variation. In this section I move away from maximum-likelihood estimation and into Bayesian estimation. I make this methodological choice because Bayesian estimation is useful in analyzing survey data (Gelman et al. 2003, Heeringa, West & Berglund 2009), time-series cross-sectional data (Shor et al. 2007), and age-period-cohort models with repeated cross-sectional data (Yang 2006, Yang & Land 2008). I use multilevel modeling techniques incorporating the methods of age-period-cohort models with non-nested random effects designs (i.e., mixed effects) to analyze the random and fixed effects of states, years, cohorts, and individuals. This modeling approach decomposes time trends into cohort and periodic differences, so the estimation procedure allows for covariates that explain opinion change that are unique to specific lived experiences. In addition, the modeling technique allows for decomposition of variance at the state level, so we can characterize the features of context at a certain point in time in one state that may uniquely explain an individuals support for marriage recognition as opposed to others. The models presented below have the following general specification:

$$\begin{aligned}
 \Pr(y_i = 1) &= \text{logit}^{-1}(\beta_i^0 + X_i\beta + \alpha_{l[i]}^{year} + \alpha_{m[i]}^{cohort} + \alpha_{n[i]}^{state} + \alpha_{n[i],l[i]}^{state.year}) \\
 \alpha_i^{year} &\sim N(X_l\gamma^{l,1}, \sigma_{period}^2) \\
 \alpha_m^{cohort} &\sim N(X_m\gamma^{m,2}, \sigma_{cohort}^2) \\
 \alpha_j^{state} &\sim N(\alpha_{q[n]}^{region} + X_n\gamma^{n,3}, \sigma_{state}^2) \text{ for } j = 1, \dots, 51; \\
 \alpha_{n,l}^{state.year} &\sim N(X\gamma^{n,l,4}, \sigma_{state.period}^2) \\
 \alpha_q^{region} &\sim N(0, \sigma_{region}^2) \text{ for } j = 1, \dots, 5;
 \end{aligned} \tag{3}$$

Wilkes & Corrigan-Brown (2011) present analyses that assess the posterior distribution of the variance components of the random effects by starting with a model that only includes period random effects and building it into a more complex model. I use the same technique to investigate the sources of variation in marriage opinions. The model includes fixed effects at the individual ( $X\beta$ ), period and state levels ( $X\gamma$ ). These fixed effects will characterize the magnitude to which individual characteristics and contextual

characteristics influence opinions on marriage recognition. In addition, the model will be capable of estimating the degree to which explaining opinions on marriage recognition is variant between cohorts, periods, and states.

## 5.1 Random Effects

The random effects in this modeling design incorporate the factors that predict change over time and space. One is the time period—this tracks the overall trend effects that are evident in the data. Another is cohort—this tracks the change within different age groups, so we can account for factors such as cohort replacement. Finally, I incorporate states and regions. The effects from these variables model the differences between the states, with partial pooling that will increase the accuracy of estimates in states with fewer observations. An interaction of state and period is also allowed in the model to account for unique moments within states. As is customary in non-nested random effects models, each random effect has a variance posterior distribution. These variance components indicate the degree to which there is variability across each random effect. By investigating how much variation is reduced in increasingly complex models, I account for the potential factors that explain cohort, period, and regional differences. In addition, reductions in variance parameters indicate which random effects account for differences in marriage opinions. This decomposition indicates the sources of a cultural shift that may be occurring both across time and space.

## 5.2 Fixed Effects

Provided the previous literature, I employ a set of fixed effects at numerous levels. For the individual level, I use age, education, race, partisanship, and gender. I do not employ other individual covariates, as they are not common in all of the surveys (e.g., religiosity or knowing someone who is LGBT). Though somewhat limited, these demographics are routinely predictive of marriage opinions and account for a substantial portion of variation (Brewer 2008; Lax and Phillips 2009a, 2009b). The models underspecification may alter the estimates of the partial slope coefficients at the individual level, as religiosity and other variables are correlated with membership in the Republican Party. Such omitted variables may mischaracterize the effect of partisanship, but given the strong positive correlation between religiosity and Republicanism, identifying as a Republican should account for most of the

variation these other variables would have done. I center age and education at their grand mean by period.

In addition to the fixed effects at the individual level, the periodic and spatial fixed effects are of more interest to the model. I include temporal effects that are unique to certain states. Variables indicating a year at which a significant state Supreme Court case was heard regarding LGBTs provide the legal context. The data for these came from Pinello (2003) and were updated to include cases that were beyond the publication year of the text. The percentage of the Democratic Party in both the lower and upper chambers in the state legislature is also used, centered at the periodic group mean.<sup>6</sup> In addition, I include a dichotomous variable for whether the governor of the state is a member of the Democratic Party. I also include the average personal income in the state centered by period.

The model also has time invariant state level fixed effects to describe the context of the LGB community in the state. Gary Gates and Jason Ost (2004) rank states based upon their LGB composition and laws protecting sexual minorities. These rankings provide an approximate measure of LGB community building within the states. These rankings were reverse coded and grand mean centered. As Cahn and Carbone (2010) have argued, median age at marriage for women is a strong indicator of “Red Families” and “Blue Families”, so I include as a fixed effect for states, the grand mean centered median age at marriage.<sup>7</sup> Since research has indicated that diversity is a factor that affects opinions, I use state level estimates of percent urban centered by state.<sup>8</sup> In addition, there are periodic events that affect all the states, which include court decisions of the U.S. Supreme Court, and the partisanship of the President. I include these as temporal fixed effects. I also include rolling estimates of the national mood toward gays and lesbians by the national estimate of the feeling thermometer as reported by the Gallup Organization. The national emotional mood toward gays and lesbians are expected to correspond to approval of marriage recognition.

Due to data limitations, if there are years where no observations are present, I apply the temporally based fixed effects to the observations in the

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<sup>6</sup>As Barclay and Fisher (2003) had to do, I use the partisanship of the two senators for Nebraska due to their unicameral and non-partisan legislature.

<sup>7</sup>A single fixed effect was used due to lack of variation in this measure of the time frame analyzed.

<sup>8</sup>Centering by period allows for easier comparison between states; whereas, centering by state allows for easier comparison within states over time.

subsequent year. Though imperfect, it allows for some modeling over time as opposed to ignoring historical moments that may affect public opinion. This only occurs in 1995. Each model had 5,000 iterations in a Markov Chain Monte Carlo analysis using three chains in a Gibbs sampler with half of the iterations discarded and the other half used in the analysis.

## 6 Results

### 6.1 Variance Components

I performed seven different regressions each employing additional random or fixed effects in order to investigate how such additional information affects the remaining effects in the model. These comparisons provide details about the sources of variability among the different random effects. Comparing the variance components indicates the degree to which certain temporal and contextual effects are likely playing roles in explaining the attitudes people have toward marriage recognition.

As plotted in Figure 4, the first model only has the time trend modeled. When cohorts are added to the model, the median estimate for the time trend does not change and cohorts appear to explain substantial variation in the model. This indicates that periods and cohorts are explaining unique aspects of the model. The third model adds state random effects. The cohort

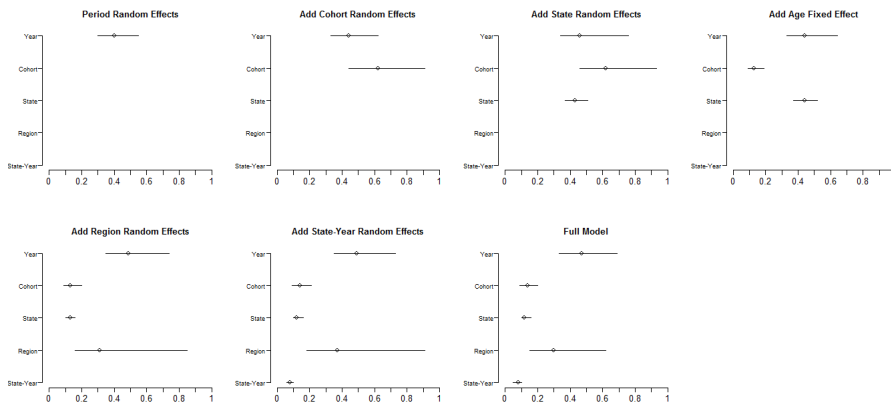


Figure 4: Median estimate of variance components from mixed effect models with 90% uncertainty intervals

variance component decreases slightly, but the variance components for year and cohort do not change much with the addition of states in the model. With little change of the previous variance components, this is evidence that years, cohort, and states each provide unique additions to explaining opinions on marriage recognition (i.e., the inclusion of one random effect does not decrease the variance in another).

The story changes when the fourth model is estimated. This fourth model includes an age fixed effect. Since conventional regression models cannot simultaneously have age, period, and cohorts in a singular model, the mixed effects modeling approach solves this identification problem (Yang 2006). The inclusion of age accounts for any potential misinterpretation between age cohorts and age—that is, older respondents within in a single survey versus age cohorts across multiple surveys. When included, the effect of age strongly reduces the variation in cohorts. This is indicative that previous cohort analyses confounded age and cohorts, and the simultaneous estimation of the two indicates that age cohorts actually explain very little of the variation in the model.

The fifth model includes a number of other estimates. I used all of the individual level fixed effects, and I also included a regional random effect. The variance components indicate that the inclusion of regions reduces the variance in states. Since states are nested within regions, I find this as evidence that both regions and states matter in the analysis. The variation of states is also dependent upon variation in regions. Given this dependent relationship, it is not useful to view the decrease in the variance component for states as indicative that states do not matter. Upon further investigation of the estimated effects, it appears that regional effects largely account for southern states while the state effect largely account for non-southern states (see Appendix for Full Model output).

Adding state—year random effects to the model does not alter much of the variation of the trend or the context. This indicates that much of the variation exists between states and across time uniquely, and the inclusion of an interaction of the two adds little to the explanation of opinion change. The full model includes fixed effects for all the variables I discussed in the previous section. The inclusion of these fixed effects sharpens the estimates of the random effects. This is evidenced in the reduction of uncertainty about the variance components but does not significantly alter the median estimates.

By analyzing the variance components, I found that the random effects

that exhibited the most variation were both time and context. I also found that these effects are additive rather than multiplicative. In addition, there is very little evidence that cohorts actually explain much variation in marriage opinions, leaving little opportunity for cohort replacement to be a significant explanation for opinion change. In comparison to the variance components of the other random effects, cohorts comprise about 13% of the variation of the random effects using the estimates from the full model.

## 6.2 Parameter Estimates

The output of the full regression model in Table 2 indicates the degree to which measured fixed effects account for opinion change. Each estimate is the median estimate of the partial slope coefficient, and the brackets provide the bounds of a 90% uncertainty interval. At the individual level, older individuals surveyed regardless of time period were less supportive of marriage. Women and those with higher educational attainment are more likely to support marriage. African-American and Latino respondents were less likely to support marriage. The most substantive predictor at the individual level is partisanship—Republican respondents are significantly less likely to support marriage recognition for lesbian and gay couples.

The fixed effects at the state level indicate that the rankings used by Gates and Ost (2004) are predictive of more pro-marriage attitudes. States having higher concentrations of LGBs, more LGB community resources, and more pro-LGB legislation at the municipal and state level rank higher on the Gates and Ost (2004) scale. In addition, the median age at marriage for women is also predictive of marriage attitudes—corroborating a cultural and religious norm about family structures. The likelihood for supporting marriage increases for individuals residing in states that have women who first marry at an older age. Interestingly, the diversity within the state, operationalized by looking at the percent of the state that is categorized as urban, is not predictive of marriage opinions.

The results of the year fixed effects indicate that U.S. Supreme court cases have no significant effect on marriage opinions. However, the years in which President George W. Bush was in office significantly lowered the probability that individuals in the country were supportive of marriage. The years that President Bush was in office coincide with many anti-marriage moments including the Federal Marriage Amendment and many state-level laws or amendments banning marriage recognition. As the national mood

Table 2: Parameter estimates on support for marriage recognition of the Full Model, 90% uncertainty intervals in brackets

Individual fixed effects		Year fixed effects	
Age	-0.03 [-0.03,-0.02]	GW Bush Years	-0.40 [-0.82,-0.02]
Female	0.36 [0.33, 0.38]	Romer	-0.44 [-1.30,0.36]
Education	0.32 [0.31,0.33]	Boy Scouts	0.20 [-0.72,1.14]
Republican	-1.30 [-1.33,-1.23]	Lawrence	0.33 [-0.51,1.28]
Black	-0.79 [-0.83,-0.75]	Feeling Thermometer	0.91 [0.01,1.70]
Latino	-0.22 [-0.26,-0.17]		
State fixed effects		State-year fixed effects	
Rankings (Gates)	0.01 [0.01,0.01]	Court Cases	-0.03 [-0.08,0.02]
Age at marriage	0.08 [0.03,0.13]	Anti-LG State Law	0.04 [-0.05,0.13]
Urban (%)	0.00 [-0.00,0.01]	% Dem in Lower Ch.	0.00 [-0.00,0.00]
		% Dem. in Upper Ch.	0.00 [-0.00,0.00]
		Dem. Governor	-0.01 [-0.04,0.02]
Intercept	-0.17 [-0.35, 0.01]	Personal Income	-4.62 [-7.75,-1.80]
Variance components			
Year	0.47 [0.33,0.69]	Cohort	0.14 [0.09,0.20]
State	0.12 [0.10,0.16]	Region	0.30 [0.15,0.62]
State-year	0.08 [0.05,0.10]		
DIC	130,340		
N	125,218		

toward gays and lesbians increased, there is an increased likelihood of an individual of supporting gay marriage. The feeling thermometer estimates over the timeframe analyzed started on the colder end around the mid-thirties and ended at an ambivalent fifty. This change from majority cold to majority ambivalent positively affects the likelihood individuals support marriage recognition.

The state-year fixed effects identify variables that change over time and between states. The years in which a state had a significant LGBT State Supreme Court case had no effect on marriage opinions. The years in which a state enacts a law banning any form of relationship recognition is not predictive. The partisanship of a states lower and upper chambers and Governor has no effect on marriage opinions. However, states that have higher average personal incomes are less likely to support marriage recognition.

### 6.3 Model Predictions

The fixed effects identify what predictors at each level explain the variation in marriage opinions. In addition, the variance components provide an indication to the degree to which trend, cohort and contextual effects explain why people have different opinions on marriage. In order to further understand the role of each of the random effects, I post-estimate the probability a respondent is supportive of marriage by cohort and over time for each state. These estimates take the model results and calculate the inverse logit of the full model. However, these estimates are approximations, so I hold all individual level variables at their grand mean except for age. For age, I use the mean age for each cohort for each year. All of the random effects and the fixed effects that were stable predictors were used in the post-estimation.

Figure 5, I plot the predicted probability a respondent supports marriage recognition with each gray line as one state. The black lines identify three states that exemplify a liberal, moderate, and conservative state on marriage: the District of Columbia,<sup>9</sup> Ohio and West Virginia, respectively. These three states are characteristic of traditional blue states, red states, and battleground states. Each plot in Figure 7 is for a different age cohort, and the x-axis identifies the year in the survey ranging from 1992 to 2011.

Across all of the panels, age cohorts do have a positive effect on the probability of supporting marriage. However given the regression results,

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<sup>9</sup>For ease of discussion, I refer to DC as a state.



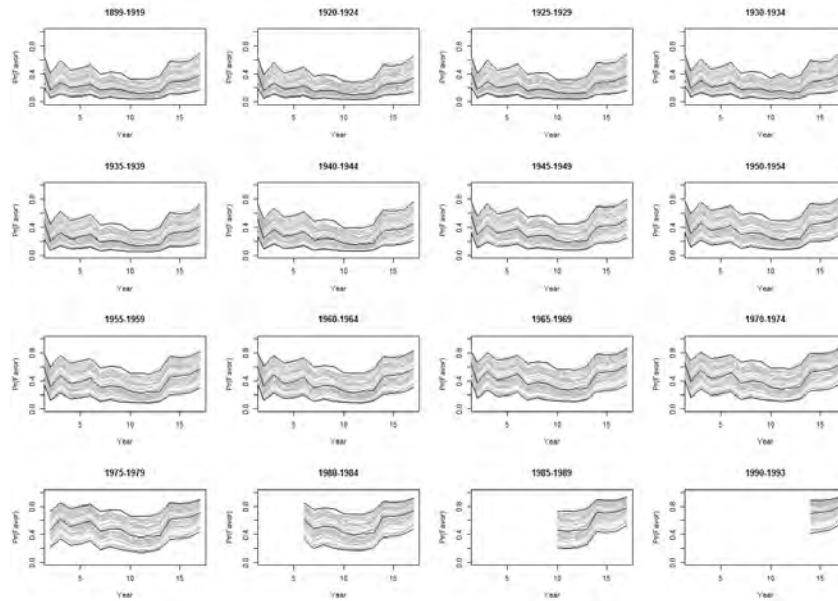


Figure 5: Predicted probabilities for individuals in each state by cohort over time, black lines from top to bottom indicate DC, OH, and WV

this is more of a function of age as opposed to age cohort, as the trend lines indicate that all cohorts have undergone a similar change on marriage. There was a substantive dip in opinions on marriage from 2004-2008, and this began with a downward trend from 2000. The regression results indicate that the years of President George W. Bush had a significant negative impact on opinions on marriage recognition.

The post-estimations indicate that a significant source of variation is found between states. The trends in Figure 7 emulate the significant differences between the states; it shows the reality of a cultural divide across states. This is why the approval of marriage recognition in some states should not be misconstrued to be a watershed that all states will approve of marriage. Context plays a significant role in the likelihood individuals will support marriage recognition.

Finally, the estimations show that the combination of years, cohort and states provide a clearer portrait of opinion change. Older cohorts in West Virginia evidence very little change over time; however, younger cohorts have had greater movement on marriage opinions. When it comes to theorizing

about cohort replacement on marriage opinions, the explanatory power of that theory may be conditional on the context that each state uniquely provides.

## 7 Discussion

One of the most popular theories regarding opinion change on marriage recognition for lesbian and gay couples is cohort replacement. People within and outside of academia use this theory; it is tractable and understandable. This reasoning is approachable, but it is incomplete. People come from different generations, and these generational differences are assumed to significantly matter in how people think about marriage. Empirical research has defended the role of cohorts (Baunach 2011, Baunach 2012, Carlsson & Karlsson 1970, Converse 1976, Lewis & Gossett 2008, Sears 1981, Sears & Lau 1983, Sears 1987), but there has not been much of an attempt to disentangle cohorts, age, and trends. Though not wholly correct or incorrect, the results of this analysis indicate these popular beliefs need to be refined. Opinions vary widely across the states, and just as opinions have changed over time, there are some states that have been more receptive to such changes.

There are some states that have been by their unique cultural and institutional context more receptive to what some claim to be a cultural shift. Opinion change has been more a function of context and changing opinions over time than cohorts being replaced. Those states that are traditionally considered blue states are the same states that have been experiencing a substantial change in the probability of supporting marriage. Gelman et al. (2008) contend that the primary differences between red states and blue states are primarily a function of a culture war. In the same regard, Cahn and Carbone (2010) contend that there are different familial paradigms. Both of these arguments are not about changing cohorts but changing contexts. What I have shown is that these changing contexts are consequential to what people think about on marriage recognition. This is indicative that the recent victories for the freedom to marry should not be construed that marriage recognition would win if taken to a popular vote in any state.

At the same time, red states, blue states, red families, or blue families do little to provide us of what drives the change over time. This analysis indicates that national political phenomena—most especially the years when President George W. Bush was in office—do depress the public approval of

marriage recognition. With President Barack Obama's recent endorsement of the issue, the question remains whether his tenure will induce a complementary and positive impact on marriage recognition. The national feeling toward gays and lesbians also corresponds to opinions changing over time.

In addition states that have higher median averages of personal income in a given year are less likely to support marriage. What necessarily may explain why this is? Rich states are generally considered to be the blue states (Gelman et al. 2008). This variable may be a proxy for philosophies of the size of government, where state income taxes depress personal income. In effect, individuals net personal income would be representative of liberal versus conservative fiscal policies. If so, then this measure may be an objective measure of government fiscal practice, which does seem to indicate that support for marriage recognition is correlated with liberal economic policies.

The court appears to have no effect on marriage opinions. This may well be an important lesson, as the U.S. Supreme Court may hear cases in the near future dealing directly with marriage recognition. As opposed to leading opinion change, the court is likely a follower of cultural shifts (D'Emilio 2007, Rosenberg 1991). At the same time, this analysis indicates that court decisions do not have a negative impact on opinion as well.

This analysis provides one of the first comprehensive analyses of opinion change on marriage analyzing both individual-specific and context-specific variables. I provide an argument that states are consequential to understanding how and why opinions have changed. When it comes to a cultural shift, the state context cannot be ignored in that process. In addition, I have challenged the logic of cohort replacement as the only significant explanation for why opinions have changed. People are changing in their opinions on marriage recognition regardless of their age cohort, and these changes are more consequential to some states than that of others.

I infer this as an indication that marriage recognition is not an "easy" issue that people decide on and never revisit. People are persuadable on marriage recognition. This means that the campaign message may matter in opinion change, and there are people in the mass public receptive to such messages—political institutions play a role in that exchange. If people are more fluid on their marriage opinions than previously thought, then what messages matter to whom and under what context? This broad analysis is not capable of analyzing such questions, but it does question the regard to which marriage has been thought of as an "easy" issue. Based on the analysis, individuals in some states have been and continue to be more receptive to

those messages than others.

## References

- Alvarez, R. Michael & John Brehm. 2002. *Hard Choices, Easy Answers*. Princeton, NJ: Princeton University Press.
- Andersen, R. & T. Fetner. 2008. "Cohort Differences in Tolerance of Homosexuality Attitudinal Change in Canada and the United States, 1981–2000." *Public Opinion Quarterly* 72(2):311–330.
- Barclay, Scott & Shauna Fisher. 2003. "The States and the Differing Impetus for Divergent Paths on Same-Sex Marriage, 1990–2001." *Policy Studies Journal* 31(3):331–352.
- Baumgartner, Frank R. & Bryan D. Jones. 1993. *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.
- Baunach, D.M. 2011. "Decomposing Trends in Attitudes Toward Gay Marriage, 1988–2006." *Social Science Quarterly* 92(2):346–363.
- Baunach, D.M. 2012. "Changing Same-Sex Marriage Attitudes in America from 1988 Through 2010." *Public Opinion Quarterly* 76(2):364–378.
- Benz, Matthias & Alois Stutzer. 2004. "Are Voters Better Informed When They Have a Larger Say in Politics?—Evidence for the European Union and Switzerland." *Public Choice* 119(1–2):31–59.
- Bowler, Shaun & Todd Donovan. 2002. "Democracy, Institutions and Attitudes about Citizen Influence on Government." *British Journal of Political Science* pp. 371–390.
- Brace, Paul, Kellie Sims-Butler, Kevin Arceneaux & Martin Johnson. 2002. "Public Opinion in the American States: New Perspectives using National Survey Data." *American Journal of Political Science* pp. 173–189.
- Brace, Paul, Kevin Arceneaux, Martin Johnson & Stacy G Ulbig. 2004. "Does State Political Ideology Change over Time?" *Political Research Quarterly* 57(4):529–540.
- Brewer, P.R. 2008. *Value War: Public Opinion and the Politics of Gay rights*. Rowman & Littlefield, Inc.

- Brownstein, Ronald. 2012. "Understanding Voters on Gay Issues: It's One for the Ages." *The Next America: How Demography Shapes the National Agenda* .  
 URL: <http://www.nationaljournal.com/thenextamerica/politics/understanding-voters-on-gay-issue-it-s-one-for-the-ages-20120510>
- Button, James W., Barbara A. Rienzo & Kenneth D. Wald. 2000. The Politics of Gay Rights at the Local and State Level. In *The Politics of Gay Rights*, ed. Craig A. Rimmerman, Kenneth D. Wald & Clyde Wilcox. Chicago, IL: University of Chicago Press.
- Cahn, Naomi & June Carbone. 2010. *Red Families v. Blue Families: Legal Polarization and the Creation of Culture*. Oxford University Press.
- Carlsson, Gosta & Katarina Karlsson. 1970. "Age, Cohorts and the Generation of Generations." *American Sociological Review* pp. 710–718.
- Carmines, Edward G. & James A. Stimson. 1980. "The Two Faces of Issue Voting." *American Political Science Review* 74:78–91.
- Carmines, Edward G. & James A. Stimson. 1981. "Issue Evolution, Population Replacement, and Normal Partisan Change." *American Political Science Review* 75:107–118.
- Chong, D. & J.N. Druckman. 2007. "Framing theory." *Annu. Rev. Polit. Sci.* 10:103–126.
- Chong, D. & J.N. Druckman. 2010. "Dynamic public opinion: Communication effects over time." *American Political Science Review* 104(4):663–680.
- Committee, Democratic National Convention et al. 2008. "The 2012 Democratic National Platform."
- Converse, Philip E. 1976. *The Dynamics of Party Support*. Cohort-analyzing Party Identification. Beverly Hills: Sage Publications.
- Cox, Gary W & Mathew D McCubbins. 2005. *Setting the Agenda: Responsible Party Government in the US House of Representatives*. Cambridge University Press.

- Cox, Gary W. & Matthew D. McCubbins. 1993. *Legislative Leviathan: Party Government in the House*. Berkeley: University of California Press.
- Craig, S.C., M.D. Martinez & J.G. Kane. 2005. "Core Values, Value Conflict, and Citizens Ambivalence about Gay Rights." *Political Research Quarterly* 58(1):5–17.
- Cutler, S.J. & R.L. Kaufman. 1975. "Cohort Changes in Political Attitudes: Tolerance of Ideological Nonconformity." *Public Opinion Quarterly* pp. 69–81.
- Davis, J.A. 1992. "Changeable Weather in a Cooling Climate Atop the Liberal Plateau: Conversion and Replacement in Forty-Two General Social Survey Items, 1972-1989." *Public Opinion Quarterly* pp. 261–306.
- D’Emilio, John. 2007. Will the Courts Set Us Free? Reflections on the Campaign for Same-Sex Marriage. In *The Politics of Same-Sex Marriage*, ed. Craig A. Rimmerman & Clyde Wilcox. Chicago, IL: University of Chicago Press.
- Donovan, Todd, Caroline J Tolbert & Daniel A Smith. 2008. "Priming Presidential Votes by Direct Democracy." *The Journal of Politics* 70(04):1217–1231.
- Donovan, Todd, Jim Wenzel & Shaun Bowler. 2000. Direct Democracy and Gay Rights Initiative after *Romer*. In *The Politics of Gay Rights*, ed. Craig A. Rimmerman, Kenneth D. Wald & Clyde Wilcox. Chicago, IL: University of Chicago Press.
- Dorris, John B. 1999. Antidiscrimination Laws in Local Government: A Public Policy Analysis of Municipal Lesbian and Gay Public Employment Protection. In *Gays and Lesbians in the Democratic Process*, ed. Ellen D.B. Riggle & Barry L. Tadlock. Columbia University Press.
- Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.
- Egan, Patrick J & Kenneth Sherrill. 2005. "Marriage and the Shifting Priorities of a New Generation of Lesbians and Gays." *PS: Political Science and Politics* pp. 229–232.

- Enten, Henry J. 2012. "America's Roaring Twentysomethings: How Young Voters Won the Culture Wars." *The Guardian* .  
URL: <http://gu.com/p/3bnca>
- Firebaugh, G. & K.E. Davis. 1988. "Trends in Antiblack Prejudice, 1972-1984: Region and Cohort Effects." *American Journal of Sociology* 94(2):251-72.
- Fisher, Patrick. 2008. "Is There an Emerging Age Gap in US Politics?" *Society* 45(6):504-511.
- Gates, Gary J & Jason Ost. 2004. *The Gay & Lesbian Atlas*. Urban Institute Press.
- Gelman, A. & J. Hill. 2006. *Data Analysis using Regression and Multi-level/Hierarchical Models*. Cambridge University Press.
- Gelman, Andrew, David Park, Boris Shor & Jeronimo Cortina. 2008. *Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do*. Princeton, NJ: Princeton University Press.
- Gelman, Andrew, John B Carlin, Hal S Stern & Donald B Rubin. 2003. *Bayesian data analysis*. Chapman & Hall/CRC.
- Green, John C. 2000. Antigay: Varieties of Opposition to Gay Rights. In *The Politics of Gay Rights*, ed. Craig A. Rimmerman, Kenneth D. Wald & Clyde Wilcox. Chicago, IL: University of Chicago Press.
- Haeberle, Steven H. 1996. "Gay Men and Lesbians at City Hall." *Social Science Quarterly* 77(1):190-197.
- Haider-Markel, Donald P & Kenneth J Meier. 1996. "The Politics of Gay and Lesbian Rights: Expanding the Scope of the Conflict." *The Journal of Politics* 58(2):332-349.
- Heeringa, Steve G, Brady West & Patricia A Berglund. 2009. *Applied Survey Data Analysis*. Chapman & Hall/CRC.
- Hicks, GR & TT Lee. 2006. "Public Attitudes toward Gays and Lesbians: Trends and Predictors." *Journal of Homosexuality* 51(2):57.



- Hillygus, D. Sunshine & Todd G. Shields. 2005. "Moral Issues and Voter Decision Making in the 2004 Presidential Election." *PS: Political Science and Politics* pp. 201–209.
- Hillygus, D. Sunshine & Todd G. Shields. 2009. *The Persuadable Voter: Wedge Issues in Presidential Campaigns*. Princeton, NJ: Princeton University Press.
- Inglehart, Ronald. 1977. *The Silent Revolution: Changing Values and Political Styles among Western European Publics*. Princeton, NJ: Princeton University Press.
- Ingram, H., A.L. Schneider & P. DeLeon. 2007. Social Construction and Policy Design. In *Theories of the Policy Process*, ed. Paul A. Sabatier. Boulder, CO: Westview Press pp. 93–126.
- Iyengar, Shanto, Kyu S Hahn, Jon A Krosnick & John Walker. 2008. "Selective Exposure to Campaign Communication: The Role of Anticipated Agreement and Issue Public Membership." *Journal of Politics* pp. 186–200.
- Johnson, Martin, Paul Brace & Kevin Arceneaux. 2005. "Public Opinion and Dynamic Representation in the American States: The Case of Environmental Attitudes." *Social Science Quarterly* 86(1):87–108.
- Klawitter, Marieka & Brian Hammer. 1999. Spatial and Temporal Diffusion of Local Antidiscrimination Politics for Sexual Orientation. In *Gays and Lesbians in the Democratic Process*, ed. Ellen D.B. Riggle & Barry L. Tadlock. Columbia University Press.
- Krosnick, John A. 1991. "The Stability of Political Preferences: Comparisons of Symbolic and Nonsymbolic Attitudes." *American Journal of Political Science* pp. 547–576.
- Lau, Richard R & David P Redlawsk. 2006. *How Voters Decide: Information Processing in Election Campaigns*. Cambridge University Press.
- Lax, J.R. & J.H. Phillips. 2009a. "Gay Rights in the States: Public Opinion and Policy Responsiveness." *American Political Science Review* 103(3):367–386.

- Lax, J.R. & J.H. Phillips. 2009b. "How Should We Estimate Public Opinion in the States?" *American Journal of Political Science* 53(1):107–121.
- Lax, J.R. & J.H. Phillips. 2011. "The Democratic Deficit in the States." *American Journal of Political Science* 56(1):148–166.
- Leduc, Lawrence. 2002. "Opinion Change and Voting Behaviour in Referendums." *European Journal of Political Research* 41(6):711–732.
- Lerner, Jennifer S, Julie H Goldberg & Philip E Tetlock. 1998. "Sober Second Thought: The Effects of Accountability, Anger, and Authoritarianism on Attributions of Responsibility." *Personality and Social Psychology Bulletin* 24(6):563–574.
- Lewis, G.B. & C.W. Gossett. 2008. "Changing Public Opinion on Same-Sex Marriage: The Case of California." *Politics & Policy* 36(1):4–30.
- Lewis, G.B. & S.S. Oh. 2008. "Public Opinion and State Action on Same-Sex Marriage." *State and Local Government Review* 40(1):42–53.
- Lewis, Gregory B. 2005. "Same-Sex Marriage and the 2004 Presidential Election." *PS: Political Science and Politics* pp. 195–199.
- Lewis, Gregory B. 2012. "If Same-Sex Marriage Is So Popular, Why Does It Always Lose at the Ballot Box? (Includes state-level data on support and legislation)." *The Monkey Cage* .  
 URL: <http://themonkeycage.org/blog/2012/05/15/if-same-sex-marriage-is-so-popular-why-does-it-always-lose-at-the-ballot-box>
- Lewis, Gregory B. & Lanae Erickson Hatalsky. 2012. "The Big Shift: Changing Views on Marriage for Gay Couples." *Third Way* .
- Liu, Frederick & Stephen Macedo. 2005. "The Federal Marriage Amendment and the Strange Evolution of the Conservative Case against Gay Marriage." *PS: Political Science and Politics* pp. 211–215.
- Lofton, Katie & Donald P. Haider-Markel. 2007. The Politics of Same-Sex Marriage Versus the Politics of Gay Civil Rights: A Comparison of Public Opinion and State Voting Patterns. In *The Politics of Same-Sex Marriage*, ed. Craig A. Rimmerman & Clyde D. Wilcox. Chicago, IL: University of Chicago Press.

- Loftus, Jeni. 2001. "America's Liberalization in Attitudes toward Homosexuality, 1973 to 1998." *American Sociological Review* pp. 762–782.
- Lublin, David. 2005. "The Strengthening of Party and Decline of Religion in Explaining Congressional Voting Behavior on Gay and Lesbian Issues." *PS: Political Science & Politics* 38(02):241–245.
- Nicholson, Stephen P. 2005. *Voting the Agenda: Candidates, Elections, and Ballot Propositions*. Princeton, NJ: Princeton University Press.
- Pacheco, Julianna. 2011. "Using National Surveys to Measure Dynamic US State Public Opinion A Guideline for Scholars and an Application." *State Politics & Policy Quarterly* 11(4):415–439.
- Page, Benjamin I. & Robert Y. Shapiro. 1983. "Effects of Public Opinion on Policy." *American Political Science Review* 77:175–190.
- Park, D.K., A. Gelman & J. Bafumi. 2004. "Bayesian Multilevel Estimation with Poststratification: State-Level Estimates from National Polls." *Political Analysis* 12(4):375–385.
- Pinello, Daniel R. 2003. *Gay Rights and American Law*. Cambridge University Press.
- Raykov, T. & G.A. Marcoulides. 2010. *Introduction to Psychometric Theory*. Routledge.
- Rosenberg, Gerald N. 1991. *The Hollow Hope: Can Courts Bring about Social Change?* University of Chicago Press.
- Sears, David O. 1981. "Life-Stage Effects on Attitude Change, Especially among the Elderly." *Aging: Social Change* pp. 183–204.
- Sears, David O. 1987. Implications of the Life-Span Approach for Research on Attitudes and Social Cognition. In *Life-Span Perspectives and Social Psychology*, ed. Ronald P. Abeles. Hillsdale, NJ: Erlbaum.
- Sears, David O. & Richard R. Lau. 1983. "Inducing Apparently Self-Interested Political Preferences." *American Journal of Political Science* 27:223–252.

- Segura, G.M. 2005. "A Symposium on the Politics of Same-Sex Marriage: An Introduction and Commentary." *PS: Political Science & Politics* 38(02):189–193.
- Sherkat, D.E., M. Powell-Williams, G. Maddox & K.M. de Vries. 2011. "Religion, politics, and support for same-sex marriage in the United States, 1988–2008." *Social Science Research* 40(1):167–180.
- Shor, B., J. Bafumi, L. Keele & D. Park. 2007. "A Bayesian Multilevel Modeling Approach to Time-Series Cross-Sectional Data." *Political Analysis* pp. 165–181.
- Smith, Mark A. 2002. "Ballot Initiatives and the Democratic Citizen." *The Journal of Politics* 64(3):892–903.
- Stimson, James A., Michael B. MacKuen & Robert S. Erikson. 1995. "Dynamic Representation." *American Political Science Review* 89:543–565.
- Stone, A.L. 2012. *Gay Rights at the Ballot Box*. U of Minnesota Press.
- Stoutenborough, James W., Donald P. Haider-Markel & Mahalley D. Allen. 2006. "Reassessing the Impact of Supreme Court Decisions on Public Opinion: Gay Civil Rights Cases." *Political Research Quarterly* 59(3):419–433.
- Treas, J. 2002. "How Cohorts, Education, and Ideology Shaped a New Sexual Revolution on American Attitudes toward Nonmarital Sex, 1972–1998." *Sociological Perspectives* pp. 267–283.
- Wald, Kenneth D, James W Button & Barbara A Rienzo. 1996. "The Politics of Gay Rights in American Communities: Explaining Antidiscrimination Ordinances and Policies." *American Journal of Political Science* pp. 1152–1178.
- Wilkes, Rima & Catherine Corrigan-Brown. 2011. "Explaining Time Trends in Public Opinion: Attitudes towards Immigration and Immigrants." *International Journal of Comparative Sociology* 52(1-2):79–99.
- Wilson, T.C. 1994. "Trends in Tolerance Toward Rightist and Leftist Groups, 1976–1988: Effects of Attitude Change and Cohort Succession." *Public Opinion Quarterly* pp. 539–556.

- Wlezien, Christopher & Stuart N. Soroka. 2009. The Relationship between Public Opinion and Policy. In *The Oxford Handbook of Political Behavior*, ed. Russell J. Dalton & Hans-Dieter Klingemann. New York, NY: Oxford University Press.
- Wlezien, Christopher. 1995. "The Public as Thermostat: Dynamics of Preferences for Spending." *American Journal of Political Science* 39:981–1000.
- Yang, A.S. 1997. "Trends: Attitudes Toward Homosexuality." *Public Opinion Quarterly* 61(3):477–507.
- Yang, Yang. 2006. "Bayesian Inference for Hierarchical Age-Period-Cohort Models of Repeated Cross-Section Survey Data." *Sociological Methodology* 36(1):39–74.
- Yang, Yang & Kenneth C Land. 2008. "Age-Period-Cohort Analysis of Repeated Cross-Section Surveys: Fixed or Random Effects?" *Sociological methods & research* 36(3):297–326.
- Zaller, John R. 1992. *The Nature and Origins of Mass Opinion*. New York: Cambridge University Press.
- Zaller, John R. 1996. *The Myth of Massive Media Impact Revived: New Support for a Discredited Idea*. Ann Arbor, MI: The University of Michigan Press pp. 17–78.