Dynamic Public Opinion across the States*

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Research at the national level finds that public opinion moves in reasonable or "rational" ways in response to current events (Page and Shapiro 1992; Erikson, MacKuen, and Stimson 2002). Public opinion at the state level also appears to be dynamic (Norrander 2000; Johnson et al 2005), but due to a lack of time series data, there is still much to learn about state public opinion. For instance, we do not know whether states share a common trend or move independently and whether the answer to the first question differs by issue. I answer these questions by (1) creating reliable and valid measures of state public opinion on several issues across time and by (2) performing extensive analyses to understand the dynamic properties of state public opinion. I find that the patterns of dynamism and heterogeneity vary across issue areas. State public opinion on some issues, such as education spending, exhibit similar trends across time and follow closely with national trends. On other issues, such as the death penalty and abortion, states exhibit heterogeneous trends across time. The results have implications for longstanding debates concerning state public opinion and will inform us about how to model policy responsiveness at the sub-national level.

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Dynamic policy responsiveness--how closely public policies are aligned with mass public opinion over time--is a central component of a successful democracy. Indeed, we expect for changes in mass attitudes to influence changes in public policy. Scholars studying national policy responsiveness in the United States have found a high degree of congruence between public opinion and policy across time (Erikson, MacKuen, and Stimson 2002). Scholars studying state politics expect a similar degree of dynamic responsiveness, although this is still largely an assumption because of a lack of valid measures of state public opinion across time. Though limited empirical analyses suggest that state public opinion varies across time and space (Norrander 2000; Johnson et al. 2005), our models lack specificity in explaining whether states trend in similar or distinct ways across time and whether the patterns of dynamism vary depending on the particular issue. And, lacking this specificity prevents scholars from adequately exploring dynamic policy responsiveness at the sub-national level.

I contribute to existing state politics research by (1) creating valid measures of state public opinion on several different issues and by (2) performing extensive analyses to understand the dynamic properties of state public opinion across these issues. I develop valid and reliable measures of state public opinion on five separate issues over time by using a five year hierarchical linear model moving average on individual data derived from national surveys. I find that the patterns of dynamism over time and across states depend on the issue area. Some issues, like education spending, exhibit dynamic patterns of change in public opinion where states follow national trends closely. On other issues, such as the death penalty and abortion, states exhibit dynamic patterns that are quite different from national trends. These results have important implications for longstanding debates concerning state ideology and the rationality of public opinion (Page and Shapiro 1992). They will also inform us about how to model policy

responsiveness at the sub-national level. More generally, the measures developed in this paper will be useful to scholars interested in studying the link between public opinion and policy over time in the states.

Public Opinion and Public Policy

Political scientists have long recognized the importance of public opinion on policy outputs. Even amid low levels of political constraint (Campbell et al. 1960; Converse 1964) and political knowledge (Delli Carpini and Keeter 1996), public opinion plays a substantial role in the policy process. The states provide a prime laboratory for studying how public opinion is translated into policies because of the variations in possible mediating factors, such as elite ideology (Erikson, Wright, and McIver 1993), party activists (Carmines & Stimson 1989), and political parties (Burstein 2003) as well as conditional factors, such as issue salience, legislative and electoral characteristics, state demographics, and interest group activity.

There is a vast literature on the role of public opinion on policy outputs across the states, which can be divided into two traditions. The first looks at how state public opinion is related to the *general* ideological direction of state policies. In their influential book, *Statehouse Democracy*, Erikson, Wright, and McIver (1993) find a high correlation between state ideology and state policy liberalism. Looking at an index of eight policy measures (education, Medicaid, AFDC, consumer protection, criminal justice, and legalized gambling) and state ideology estimated from CBS/NYT surveys, the authors find that state ideology explains over 80% of the variance in state policy liberalism. The authors conclude that "state opinion is virtually the *only* cause of the net ideological tendency of policy in the state" (Erikson, Wright, and McIver 1993 81). This approach is beneficial because it allows scholars to make broad generalizations about

the link between the political leanings of state electorates and policies. It is, however, difficult to make inferences about specific policy areas, which has led to the second tradition.

The second tradition involves looking at how state public opinion is related to *specific* policies. For instance, state attitudes towards abortion are highly related to abortion policies, such as parental consent laws, funding for abortions, and spousal notifications across the states (Norrander & Wilcox 1999) as well as the restrictiveness of abortion policies (Areceneaux 2002) even after controlling for state ideology. Johnson, Brace, and Arceneaux (2005) find that state attitudes toward the environment are significantly related to state environmental policies above and beyond state ideology. Brace et al. (2002), after controlling for state ideology, find that state policy preferences are related to various policies including AIDs research, the number of hate crime laws, AFDC monthly payments, and state environment policies. Finally, Haider-Markel and Kaufmann (2006) find that state opinions on gays in the workplace and acceptance of homosexual sex influence gay-related policies beyond general measures of state ideology. With this approach, the size and significance of opinion tends to vary across issue areas, which helps scholars identify how issue characteristics, such as saliency, influence the link between public opinion and policy.

The difference between the two approaches rests on an assumption – sometimes tested and sometimes not – about the dimensionality of public opinion. If all policy preferences can be aligned along a liberal-conservative dimension then a summary measure of ideology will be a valid measure of public opinion. This is the approach taken by Eriskon, Wright, and McIver (1993; 2007) and the authors of *Macro Polity* (2002). If, however, public opinion is not one-dimensional, then studies of policy responsiveness must determine the extent to which public

opinion on specific policies is related to specific policy outputs. This is the approach taken by Norrander (2000; 2001) and Johnson et al. (2004) as well as others.

Both traditions, however, tend to look at how measures of public opinion *pooled across time* are related to policy outputs *pooled across time* (e.g., Brace et al. 2002). Unfortunately, cross-sectional analysis prevents scholars from addressing important policy questions *over time* (e.g., questions about policy diffusion and innovation or thermostatic processes). Cross-sectional analyses also lack specificity about the causal mechanisms of policy responsiveness because of its static nature. We do not know, for instance, whether that public opinion influences state policies or whether state policies influence public opinion. Not having dynamic public opinion to study these issues limits our understanding of the policy process across the fifty states. As Brace et al. (2004) note "the issue of longitudinal variation [in public opinion] within the states is central to a comprehensive understanding of the process through which mass opinion and policy connect at the sub-national level" (529-530).

Recent scholars have taken important first steps to investigating sub-national policy responsiveness in a dynamic framework as is evident in several notable articles that compare the link between public opinion and policy from two or three time points (Johnson et al. 2004; Norrander 2000; Camobreco and Barnello 2008). In the analyses below, I contribute to our understanding of the public opinion-policy connection at the sub-national level by developing measures of state public opinion across time on a range of issues. And with these measures, I use various analyses to determine the dynamic properties of state public opinion. Before explaining the measures, however, I consider the different types of patterns that we may observe for state public opinion. As I describe below, previous theories suggest that state public opinion could be stable or dynamic. And, if state public opinion is dynamic, states could trend

independently or follow similar patterns, closely aligned with national trends, over time. Knowing whether state public opinion is (1) stable or dynamic and (2) homogeneous or heterogeneous has important theoretical and methodological implications for dynamic policy responsiveness at the sub-national level.

The Nature of State Public Opinion: Stable or Dynamic? Homogeneous or Heterogeneous?

Understanding whether (1) state public opinion is stable or dynamic and (2) whether the patterns of dynamism are homogeneous or heterogeneous across the states have important theoretical and methodological implications. If state public opinion is relatively stable across time, then our theories of policy responsiveness need not have a dynamic component. State public opinion may correlate with policy outputs at a particular point in time (as shown by Erikson, Wright, and McIver 1993), but if that is so, changes in policy across the states cannot be explained by changes in public opinion. This also means that dynamic theories of policy responsiveness such as the thermostatic model (Johnson et al. 2005; Wlezien 1995) or the historical chain model (Norrander 2001) are inappropriate at the state level.

If state public opinion is dynamic, there are two patterns of dynamism to consider. In the first pattern, state public opinion trends the same across time. We can think of this first scenario as *parallel publics* (Page and Shapiro 1992) in which changes in public opinion occur in the same direction and at roughly the same rate on a particular issue across the states. If similar trends are evident, the relative ranking of states would be highly correlated over time even as state public opinion moves. The second scenario occurs when state public opinion trends *differently* across the states. In this situation, state public opinion on a policy may be becoming more favorable in some states while in other states it is becoming less favorable. This implies

that the relative rankings of states are weakly correlated as time progresses and as states change relative positions.

If state public opinion follows homogeneous trends across time, then absolute changes in state public opinion cannot account for the timing differences in policy enactments across the states, unless mediated by another state characteristic, such as professionalism. If unmediated by another trait, we may think that timing differences in policy enactments occur, not in response to absolute changes in state public opinion, but in response to a shifting majority of state public opinion. For instance, we may expect for State A to adopt a new policy when state public opinion in State A crosses the 50% mark (or some other threshold to account for majority opinion). Not only can differences in the timing of shifts in majority state public opinion account for differences in policy enactments, but these differences can also account for cross-sectional differences in state policy. As an example, states may enact smoking bans when the majority of state residents support smoking bans. At the same time, at any one point in time, we can explain differences in the presence of smoking bans by whether or not state public opinion has crossed that majority threshold. This type of theoretical model is consistent with median voter models, but is not consistent with a thermostatic (Wlezien 1995) or historical chain model (Norrander 2000) since both imply heterogeneous trends.

If state public opinion exhibits heterogeneous trends across time, then changes in state public opinion across time *could* account for differences in the timing of policy enactments. This would imply that *any movement* in state public opinion, not just a shift in majority opinion, could influence policy outputs. This would also open up the possibility that the causal arrow flows in the opposite direction; policy may influence state public opinion since state public opinion changes differently across time. This scenario suggests more complex models of policy

responsiveness that have dynamic components, such as the thermostatic model of policy responsiveness (Wlezien 1995; Johnson et al. 2005) and the historical chain model (Norrander 2000).

Methodologically, if state public opinion is stable or if state trends are homogeneous with the relative rankings remaining unchanged, then pooling surveys across time to measure state public opinion is acceptable to investigate policy responsiveness. To study dynamic policy responsiveness with homogeneous trends, scholars need only measure the timing in which state public opinion crosses the majority threshold instead of obtaining long time series data for each state. The data demands for studying state public opinion and policy responsiveness is much more intense if state public opinion trends differently across states. Scholars would need to obtain measures of state public opinion across time.

Empirical research is mixed on answering whether state public opinion is stable or dynamic and homogeneous or heterogeneous. Indeed, scholars interested in state public opinion have long debated whether state public opinion--measured as either state ideology or specific policy preferences-- is stable or dynamic. This debate continues today as is evident with a recent special issue of *State Politics and Policy* (2007) devoted to the stability of state public opinion. One camp of researchers argues that public opinion is stable across time. Erikson, Wright, and McIver (1993) originally measured state ideology by aggregating the mean ideological self-identification of respondents in CBS News/New York Times Polls from 1976-1988. They have recently extended their data to 2003 for a total span of 27 years (2006; 2007). Using the entire extended dataset, they find a high degree of stability for state ideology with an over-time correlation of .96 over four years, .95 over eight years, .91 over twelve years, and a .83 over their entire time period (Erikson, Wright, and McIver 2007 145). Moreover, when looking

specifically at the eight most populous states, they find an average correlation of .97, after adjusting for reliability (145).[1] In addition, because the ratio of imputed sampling error to observed variation is so great, the authors conclude that any relative changes in the ranking of states are due to sampling error instead of true change.

Brace et al. (2002) use aggregated data from the General Social Survey (GSS) 1974-1998 to look at trends in state public opinion on specific issues, such as the death penalty, environmental spending, and abortion. And, even though they were looking at specific policy preferences, Brace et al. (2002) find a similar degree of stability for the majority issues with over time correlations ranging from .73-.91. The exception was with opinions towards welfare spending which exhibited an over time correlation of .48.[2]

This argument is in contrast to others who believe that state public opinion has changed over time. Instead of using self reports of individual ideology, Berry et al. (1998; 2007) measure state ideology using interest group ratings of members of the roll call voting of state congressional delegations. Using this proxy measure, state ideology is dynamic with states frequently shifting from liberal to conservative preferences. In their recent article, Berry et al. (2007) argue that their measure captures policy mood or operational ideology where citizens react to what government is "doing at the moment". Others have found evidence of dynamism when comparing state public opinion on specific policy areas across time. Norrander's (2000) comparisons of state preferences in 1936 with preferences in the 1990s suggest that state attitudes towards the death penalty have changed over time; the over time correlation is a mere

[1] Erikson, Wright, and McIver (2007) calculate overtime correlations by correlating their measurements across various time points and then adjusting for statistical reliability. Specifically, they "infer the over-time stability of state ideology by adjusting the over-time correlations for statistical reliability" (Erikson, Wright, and McIver 2007 145). This adjustment is important since high over time correlations can account for either stability or reliability.
[2] Brace et al. (2002) employ the split halves method to assess stability. This method divides the sample into two subsets; the first subset is from 1974-1985 and the second subset is from 1986-1996. The authors then correlated state public opinion across the two subsets and obtained the Spearman-Brown coefficients to assess the degree of stability. Erikson, Wright, and McIver (1993) employ a similar method on their state ideology measures.

.43. Moreover, there this moderate level of congruency is lower in southern states compared to others, suggesting heterogeneous trends. Similarly, Johnson et al. (2004) compare public preferences towards the environment from 1985-1987 to 1989-1991. They find quite a bit of change in state preferences towards the environment with an overtime correlation of .56. Of course, correlations can depart from 1.0 because of true change or because of measurement error. Hence, these analyses are preliminary, but suggest that public opinion is dynamic across time.

Within this debate, there is an additional disparity about how scholars should adequately capture state public opinion. Some believe that state public opinion is best captured by a global measure of state ideology (Erikson, Wright, and McIver 1993; Berry et al. 1998) while others think that state public opinion is best captured with policy-specific survey questions (Johnson et al. 2004; Norrander 2000; 2001). In this paper, I follow the second paradigm and measure state public opinion on specific issue areas for several reasons. First, by measuring state public opinion on specific policies, I am able to compare the dynamic properties across issue areas. These comparisons in turn inform scholars about how to model dynamic policy responsiveness across different issues. Second, having state policy preferences on specific issues will enable scholars to study dynamic policy responsiveness on state political issues, which is important to state politics research generally. For instance, we will be able to focus on individual programs (like health or education), policy subsystems (Brace and Jewett 1995) and policy innovations (Berry & Berry 1992). Finally, measures of general attitudes are not always appropriate proxy measures for specific attitudes (Norrander 2000; 2001) and some issues are more frequently linked to ideology than others.

While I measure state public opinion on specific issues in this paper, resolving the debate about the dynamic properties of state public opinion requires direct, over time measures of both

policy preferences and ideology. Simply assuming that state public opinion is either stable or dynamic is not sufficient. Hence, while I provide a first step to resolving this dispute, future research should consider the dynamic properties of other issue areas as well as state ideology more generally.

Variations across Issues

There is some evidence at the national level that dynamic patterns of public opinion are different across issues. For instance, Page and Shapiro (1993) find that preferences on abortion during the 1970s and 1980s changed only in relatively small and gradual ways (63). This may be because morality issues are value-laden and connected to religious beliefs, which are stable across the lifespan (see also Baumgartner et al. 2007). Preferences on defense spending changed much more rapidly in response to foreign policy; for instance, the proportion wanting to increase defense spending rose by a sharp 24% just from December 1976 to November 1978 (Page and Shapiro 1992 265; see also Bartels 1991). As Page and Shapiro describe "these rises in support for military spending are among the biggest and most abrupt of opinion changes" (1993 165). Similarly, Erikson, MacKuen, and Stimson (2002) find that public mood, which measures preferences towards government spending on a liberal-conservative continuum, exhibits large shifts across time with a range of about 18 points; policy mood has a liberal extreme of 70 in 1961 and a conservative extreme of 52 in 1980 (Erikson, MacKuen, and Stimson 2002 219).

I test for different patterns of dynamism across issue types by looking at several different issues. In particular, I measure state public opinion on two morality issues (abortion and the death penalty), two economic issues (spending on welfare and education) and one social issue (marijuana legalization). I provide more detail on these measures below.

Data and Methods

Few studies have looked at how state public opinion varies over time because of challenges involved in measuring unbiased, valid, and reliable estimates of state public opinion. Part of the problem is due to the fact that few valid state polls exist over time. And, any state polls that do exist over time do not always ask consistent questions on a particular issue to develop adequate time series data. In lieu of state polls, pioneering scholars have used demographics (Berry & Berry 1990; Boehmke & Witmer 2004), simulations (Weber et al. 1972), or proxy measures (Berry et al. 1998). However, all of these measures draw on assumptions which make them less than ideal for state politics scholars. For example, the use of demographics is built on the assumption that people of the same demographic category have similar political preferences. Though demography has a large influence over political preferences at the individual level, it is not determinative and often is a proxy for some other characteristic that has a direct influence over political attitudes. A large assumption of the simulation approach is that the effect of certain demographic characteristics on political attitudes is constant across states; state residence in and of itself has no effect on political preferences. Current research suggests that this is an unlikely assumption (Norrander and Wilcox 2006; Leal 2006). Finally, many have questioned what exactly the Berry et al. (2007) proxy is measuring. Some argue that Berry et al. (1998) are measuring elite ideology (Brace et al. 2004) which should be used as a mediating factor between state public opinion and state policy, as opposed to state public opinion itself (see also Erikson, Wright, and McIver 2007).

A major breakthrough in measuring state public opinion came from Erikson, Wright, and McIver's (1993) seminal work *Statehouse Democracy.* Erikson, Wright, and McIver (1993) showed that reliable and unbiased measures of mass ideology can be obtained for each state by pooling multiple years of national-level data, such as the CBS/NYT polls, and then aggregating

them to the state level. In a more recent article, Erikson, Wright, and McIver (1993) pool 27 years of national level data to obtain mean values of state ideology across the fifty states. Furthermore, Brace et al. (2002) show that the pooling and aggregation technique can also be applied to state-level attitudes about specific policies; they pool 24 years of GSS data to obtain mean values of state public opinion.

The pooling and aggregation method has certain advantages over other techniques. Perhaps most important, it measures state public opinion directly from surveys instead of inferring it from other sources, such as demographics. Furthermore, the estimates obtained from the pooling method are unbiased because we are simply taking the average value of all individuals on some public opinion measure in a given state. By pooling across several time points, we are also able to obtain adequate *N*s for even the smallest states; increased state sample sizes translate into more reliable and precise state estimates. Finally, the pooling and aggregation technique is easy to perform statistically; researchers simply need to obtain several national level surveys across time and aggregate to the state level.

Even amid these advantages, the pooling method has yet to be used to measure state public opinion over time because of reliability issues. Indeed, the prime reason for pooling multiple years is to obtain adequate sample sizes for the less populated states so that estimates are meaningful and precise. As an example, if we were to aggregate state public opinion on the death penalty in 2006 for Delaware (the 5th least populous state) we would do so using only 2 individuals from Delaware. A sample size of 2 translates into large and uninformative confidence intervals for Delaware in 2006 on the death penalty. By pooling across multiple years (say from 1956-2006), the sample size increases to 233, the confidence intervals are tighter, and the estimates are more informative.

Another reason the pooling method has not been used to measure state public opinion over time is because it is best suited for opinions that change slowly over time. A large assumption of the pooling technique is that attitudes do not change over time; otherwise short-term dynamics would be completely washed out (Cohen 2006). Hence, scholars have been limited in using the pooling method for certain attitudes that are assumed to be fairly stable across time, such as ideology, as opposed to those attitudes that can change rapidly, such as presidential approval. This assumption limits the amount of issues for which scholars use the pooling method to measure public opinion data at the sub-national level.

In this paper, I combine the pooling technique, which is necessary to obtain adequate state sample sizes, with Hierarchical Linear Modeling (HLM), which is necessary to obtain reliable state estimates, to estimate state level opinion across a wide range of issues without the assumption of stability. HLM, as I will explain below, has been shown to generate reliable aggregate estimates with far fewer cases than traditional methods. For example, Park, Gelman, and Bafumi (2006) use HLM to estimate state ideology by using 9 months of survey data.[3] Their estimates are highly correlated with Erikson, Wright, and McIver's (1993) measure of state ideology which used over 27 years of survey data. Hence, using HLM means that fewer years need to be pooled into a single estimate and that long survey series can be used to create dynamic estimates of state public opinion.

HLM is an extension of the basic OLS regression in which data are structured in groups and coefficients can vary by group. For this example, we have individuals (the "level-1" units) structured within states (the "level-2" units or groups). The hierarchical linear model, thus has

[3] Park et al. (2006) actually used HLM techniques in conjunction with post-stratification to obtain state level estimates of vote choice, partisanship, and ideology. The techniques used in this paper did not use post-stratification or weighting techniques, though the differences are minimal for states that have either (1) high population coverage or (2) a homogeneous distribution of opinions (Brace et al. 2002). Conclusions about states that have low coverage and heterogeneous distributions (such as Wisconsin) should be taken with caution.

two components: (1) a regression based on the individual level data points predicting public opinion on some issue and an intercept that can vary by state and (2) a linear regression with 51 (50 states plus DC) data points predicting the individual state intercepts (Gelman and Hill 2007). The 51 state level intercepts are estimated as a weighted average of the mean of the observations in a state (i.e. the estimate that would be obtained by performing a fixed effects regression with state dummies only as independent variables) and the mean over all states (i.e. the estimate that would be obtained by pooling all of the states together; this is also called the grand mean). The weighting essentially makes a trade-off between the amount of information we have for each state individually and the amount of information we have for all the states (Gelman and Hill 2007).

As a result of the weighted average, estimates from states with smaller sample sizes (such as Delaware) carry less information with low reliability; consequently, these estimates are pulled toward the overall state average. On the other hand, estimates from states with large sample sizes (such as California) carry more information and have high reliability. Therefore, these estimates are closer to the individual state average. In the intermediate case, the estimates lie somewhere between the overall state average and the individual state average (Gelman and Hill 2007 254). This concept is often called "shrinkage towards the mean" (Luke 2004) because certain estimates are "shrunk" towards the overall grand mean across all groups.

One way to reduce the amount of shrinkage is to increase the state sample sizes; this is where the pooling technique is helpful. Instead of performing an HLM regression on each state-year, I pool respondents across five year time spans and use a five year moving average. By pooling across a five year window, I increase the sample size within the smaller states, but preserve a time component for which we may observe meaningful shifts in public opinion.

More specifically, I partition the data into five year time spans and use HLM to estimate the state level intercepts from a regression without any predictors (also called an "empty model" (Snijders and Bosker 1999)) in the median year.[4] This is done for each year by moving the time span up a year at a time. In notation, I estimate the following using *j* as the index for states and *i* as the index for individuals:

Level 1 $\Pr(y_i=1) = \text{logit}^{-1}(\beta_{0j} + r_{ij})$

Level 2 $\beta_{0j} = \gamma_{00} + U_{0j}$

I run the model for each five year time span to get a point estimate (β_{0j}) for the median year and then repeat by moving the time span up a year. Using the death penalty as an example, I pool responses from 1999-2003, run the empty model shown above, and obtain the 51 state intercepts (β_{0j}) as point estimates on state public opinion for each state in 2001. I then run a similar model pooling responses from 2000-2006, run an empty model, and obtain the state intercepts as point estimates of state public opinion in 2002. A drawback is that I do not have data for the first two or last two time points, though this is less of a problem if the overall time series is long.

Because state estimates are estimated from weighted averages, we can use HLM techniques to gain leverage and increase the reliability of our state-level measures than would be obtained using the pooling technique for each state-year or state-five-year-span alone. There is a trade-off, however, for the increased reliability. In gaining reliability, we are biasing our estimates towards the national mean. Theoretically, this means that we are less likely to observe heterogeneous trends, particularly among the small states, across time. Put another way, the measurement technique actually sets the data up to have homogeneous trends across states.

[4] Five year time spans is selected because it is large enough to overcome problems of small N, but small enough to catch large shifts in public opinion over a short amount of time.

I use responses across several survey organizations which have identical question wording to increase the amount of information; however, the number of surveys used depends on the issue. For instance, the General Social Survey, Gallup, and CBS/NYT survey was used to measure public opinion on the death penalty while the General Social Survey, the National Election Survey, Roper, Gallup, and CBS/NYT survey was used to measure preferences towards education spending. Detailed information about question wording, survey organizations, and the time span for each issue is included in Table A1.[5]

For the death penalty, I measure the proportion who favored the death penalty for a person convicted of murder from 1957-2002.[6] For abortion, I measure the proportion who favored legalized abortion regardless of the situation or who felt that abortion should always be permitted from 1980-1998. For the two economic issues (education and welfare spending), I measure the proportion who favored an increase in spending out of those who favored a decrease or wanted spending to stay the same. Public opinion on education spending spans from 1975-2000 while public opinion on welfare spending is measured from 1974-2000. Finally, I measure the proportion who favored the legalization of marijuana from 1972-2000. Table 1 reports the sample size across all states and years as well as the average sample size for each five-year time span. All of the state-level measures are continuous and range from 0 to 1 (in proportions).

Reliability

I assess the reliability of the five state-level measures by calculating the reliability of each measure using the O'Brien method (1990) which takes into account the variation at both the aggregate and individual levels (Jones and Norrander 1996). For these dynamic measures,

[5] In order to pool responses across organizations for a given year, I assume that each survey is measuring the same latent opinion; that bias is not introduced due to the survey design or survey implementation, such as question ordering or interviewer characteristics. Even still, I am confident that the pooling of surveys across five years should decrease the influence of outlying estimates in a particular year for a particular survey organization.
[6] For all issues, "don't know" or "no opinion" were excluded.

individuals are aggregated in states across five year time spans. Hence, the aggregate level two unit is the state-five-year-span. For instance, for the death penalty an individual can be clustered within AL-1986-1990 which is distinct from the cluster CA-1975-1980. Scholars agree that reliability scores of .70 and above are considered reliable, scores between .60 and .70 are considered moderately reliable, and scores below .60 indicate unreliability (Jones and Norrander 1996). One-way ANOVA analyses were used to obtain the reliability coefficients as shown in Table 2.[7] We see that all of the measures are highly reliable.

Validity

Reliable measures are not necessarily valid. The state level measures may not represent the concept of interest or they may be tapping into a global measure of policy preferences, such as state ideology (Erikson, Wright, and McIver 1993). If these measures are valid and valuable, then they should be related to other variables whose correlation with public opinion has been shown previously in empirical research or for which there is a strong theoretical rationale. To assess validity, I have chosen two behavioral and three policy dependent variables for the analyses reported in Table 3.

The proportion favoring the death penalty should be positively associated with the number of executions performed in a state (obtained from Baumgartner, DeBoef, and Boydstun 2007 Table 2.3). I expect for abortion attitudes favoring legalization to be positively related to the proportion of women legislators in the state legislators (Berkman and O'Connor 1993; obtained from the SPPQ state dataset). In addition, I expect for preferences towards increasing education spending to be related to per pupil expenditures (measured in constant 1992 dollars;

[7] The O'Brien method is used to test the reliability of OLS coefficients (Raudenbush & Bryk 2002), not the empirical Bayes estimates from HLM per say. However, we should expect for reliability from the HLM estimates to be higher than that which would be obtained from OLS alone (Park et al. 2006), hence, these estimates are probably larger in reality.

obtained from the SPPQ state dataset). Preferences towards increasing welfare spending are expected to be positively associated with state poverty rate (obtained from the University of Kentucky state dataset). Finally, I expect for favorable attitudes towards marijuana legalization to be positively associated with the proportion of individuals who used marijuana in the past month (obtained from the SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health). I report the bivariate correlations, slope coefficients, and panel corrected standard errors (Beck and Katz 1995) in Table 3.

The results in Table 3 show that the state public opinion estimates on the various issue areas correspond with conceptually related state characteristics. Each specific attitude is a significant predictor of the state indicators. All were significant at the .001 significance level with panel corrected standard errors.[8] And, all of the specific opinion measures explained variation in the indicator variables beyond that which could be explained by state ideology. Given these analyses, I conclude that these dynamic measures of state public opinion accurately reflect attitudes towards the specific issue areas as intended.

Results: Is State Public Opinion Stable or Dynamic?

To study whether state public opinion is stable or dynamic, I use two different techniques. First, I perform basic descriptive time series analyses on each of the issue areas. Table 4 partitions out the variance in state public opinion across the issue areas to give us a better picture about which variables vary across time, across space, and across both time and space. We see that the majority of variance is across time (or within states) or equally split for the death penalty, education spending, welfare spending, and marijuana legalization. This indicates that state public opinion on these issues is dynamic; much of the variance in state public opinion on

[8] The specific opinion measures are significant in fixed effects and random effects models which control for unit heterogeneity.

these issues occurs across time as opposed to across states. The exception, however, is with preferences on abortion. We see that the majority of variance in abortion opinion occurs across states; this suggests that abortion preferences are relatively stable across time.

Secondly, I use hierarchical linear modeling (HLM) to assess changes in state public opinion, just as one would do to assess changes over time in individuals; hence, instead of time clustered within individual (which is the case with longitudinal analyses) I model time clustered within states. Specifically, I estimate an unconditional polynomial model with a fixed cubic effect of time for each state-level measure. In notation, I estimate the following (using *t* and *j* as indexes for time and state, respectively):

Level 1 $Y_{ti} = \beta_{0i} + \beta_{1j}(Year_{tj}) + \beta_{2j}(Year^2_{tj}) + \beta_{3j}(Year\text{^}3_{tj}) + r_{tj}$

Level 2 $\beta_{0i} = \gamma_{00} + U_{0j}$

$\beta_{1i} = \gamma_{10} + U_{1j}$

$\beta_{2i} = \gamma_{20} + U_{2j}$

$\beta_{3i} = \gamma_{30}$

The intercept (β_{0i}) represents the average level of state public opinion in the first year (where year is set to zero for the first year in the series). For the death penalty the first year is 1957, for abortion it is 1980, for education and welfare spending the first years are 1975 and 1974, respectively, and the first year for marijuana legalization is 1972. To capture non-linear change, I include a year slope (β_{1i}), a year squared slope (β_{2i}), and a year cubed slope (β_{3i}). These three terms (β_{1i}, β_{2i}, and β_{3i}) work together to describe curved trajectories. While we can keep adding polynomials past cubic, these are rarely seen in practice and hard to interpret. There are some exceptions to this overall model. Although the year cubed coefficient was significant for education spending, the model fit worsened. Hence, for education spending, there is not a year

cubed coefficient. With welfare spending, the addition of year to the fourth power greatly improved model fit. Hence, a year slope to the fourth power is added to the model for welfare spending.

Restricted maximum likelihood (REML) was used in estimating model parameters and to assess the significance of random effects; degrees of freedom were estimated using the Satterthwaite method.[9] The model parameters for each state-level measure are reported in Table 5. For now, we are only interested in the fixed effects part of the model, which tests whether change is occurring across time and whether this change is linear or non-linear. I will return to the random effects below when assessing divergent trends.

From the results in Table 5, we see that for all of the state-level measures, the year coefficients are significant at least at the .05 level with a two-tailed test. The significance of higher order terms suggests that change is non-linear for all the state level measures. To assess the patterns of change across issue areas better, I plot the predicted means from the models estimated in Table 5 against the observed means from the raw data for each issue area in Figure 1. We see from these graphs that the models predicted using HLM are closely aligned with the observed means suggesting that these models are accurate, at least in a descriptive sense. From these graphs, it is easy to see how the dynamic pattern changes across issue areas. State public opinion favoring the death penalty increased across time, but then started to become less favorable in the late 1990s. This is consistent with national patterns of change in death penalty preferences (Baumgartner, DeBoef, and Boydstun 2007). Abortion preferences are slow moving across time, exhibiting the most stability out of all the state-level measures, which is also consistent with national patterns (Page and Shapiro 1992). For education spending, state level

[9] The fixed effects were also tested using an OLS regression. The conclusions from OLS were nearly identical to the ones drawn from the HLM models.

preferences are increasing across the entire time period. Finally, we see that preferences towards welfare spending and marijuana legalization move in a cyclical nature. Welfare spending preferences decreased in the 1970s, increase slightly during the 1980s, and decreased again during the 1990s. Preferences towards the legalization of marijuana increased throughout the 1970s, decreased in the mid-1980s, and then gradually increased in the early 1990s.

To summarize, the analyses suggest that how stable or dynamic state attitudes are over time depends on the issue. The results suggest that state attitudes towards the death penalty have changed over time by becoming more favorable towards the death penalty. Abortion attitudes, however, have moved much slower. Welfare preferences are also dynamic, but the pattern of dynamism is one of a cyclical nature. Education preferences for increased spending are dynamic with attitudes towards education spending increasing over time. Finally, preferences towards marijuana legalization appear to also be changing over time in a non-linear fashion that is cyclical.

Up until this point, I have looked at the dynamic properties of state public opinion while ignoring any state specific patterns. In the next section, I investigate whether the dynamic patterns vary across the states. Knowing whether states have homogeneous or heterogeneous trends informs scholars about how to properly model dynamic policy responsiveness.

Results: Is State Public Opinion Homogeneous or Heterogeneous Across Time?

If state public opinion is dynamic over time, what types of patterns might we see across the states? Are states trending homogeneously or heterogeneously over time? Do some states lead changes in state public opinion while others follow? Are the rates of change similar or different across states?

To assess patterns of change across states, I use HLM to test whether the year slopes are varying across states. Specifically, I include random slopes for the year and year squared coefficients in the HLM models. The variance components of the random slopes for each state-level measure are shown in Table 5. As stated earlier, random components are tested using REML deviance tests and fit statistics (Snijders and Bosker 1999). Via model comparisons, the additions of the random slopes for the year and year squared coefficients resulted in significant improvements to random intercept models with REML deviance differences (3 df)=879 (p<.001) for the death penalty, (3 df)=341 (p<.001) for abortion, (3 df)=381 (p<.001) for education spending and (3 df)=216 (p<.001) for marijuana legalization. For welfare spending, the random slope for the year squared coefficient did not result in a significant improvement of the model. However, for welfare spending the addition of a random slope for the year coefficient resulted in a significant improvement to a random intercept only model with REML deviance differences of (2 df)=597 (p<.001).

We can obtain the 95% confidence interval (CI) for the random variation around the fixed effects of year and year squared by adding and subtracting 2 standard deviations of their accompanying random variance terms. We see for the death penalty that the mean year slope is .02 with a 95% CI of .002 to .03 indicating that some states changed more quickly than others over time. The mean year squared coefficient for the death penalty is .0002 with a 95% CI of -.0003 to .0003. The mean year slope for abortion attitudes is -.01 with a 95% CI of -.05 to .002 indicating that some states saw little or no change in abortion attitudes over time while others experienced a larger decline than the average. The mean year squared coefficient for abortion attitudes is .003 with a 95% CI of -.003 to .002. The mean year slope coefficient for education preferences is .01 with 95% CI of -.001 to .036 indicating that some states changed faster in their

education preferences over time while others stayed relatively stable in education preferences. The mean year squared slope for education preferences is .0009 with a 95% CI of -.0007 to .0007. The mean year slope for welfare spending preferences is -.06 with a 95% CI of -.064 to -.047 indicating that while all states decline in their welfare spending preferences some did so more steeply than others. Finally, the average year slope in attitudes towards marijuana legalization is .03 with a 95% CI of .021 to .04 indicating that some states changed a bit more quickly than others. The average year squared coefficient for attitudes towards marijuana legalization is -.004 with a 95% CI of -.0002 to .0005. To see the variations clearer, Table 6 shows the empirical Bayes intercepts, year, and year squared coefficients for each state across each issue areas.

There are a lot of numbers in Table 6, but we can get a better sense of which states are have steeper slopes, indicating a faster rate of change in attitudes, and which states are stable. For instance, for the death penalty Florida, Hawaii, North Dakota, and South Carolina are moving the fastest towards favoring the death penalty while other states, such as Massachusetts, exhibit much more stability. We can also see that even amid relative stability overall, states vary a great deal in their movement in abortion attitudes. Some states are decreasing in their attitudes towards legalized abortion, such as Tennessee and Utah, while others are becoming more favorable towards legal abortion such as Wisconsin and DC. The stability in abortion attitudes overall seems to be a function of heterogeneous trends across the states. For education preferences, we see that the majority of states are moving in a positive direction over time but a few are stable. While there is variation in the rate of change for welfare spending preferences, the direction of change is negative for all states. Finally, all states are moving in the same direction in regards to marijuana legalization. Table 6 also shows that states vary a great deal in

their initial mean values of state public opinion, which is consistent with previous research (Erikson, Wright, and McIver 1993).

Figure 2 shows the predicted trajectories for two states per issue area. The states that are plotted were picked based on the largest and smallest coefficients. For the death penalty, we see that Massachusetts and South Carolina exhibit different trajectories over time. South Carolina increased in its preferences towards the death penalty much more steeply compared to Massachusetts. For abortion preferences, we see that Kansas and Wisconsin have vastly different trajectories moving in two opposite directions. For education preferences, Rhode Island has a slightly different trajectory from Alabama, but these differences are not as large as for other issues; indeed both states are moving in a positive direction. For welfare preferences, both DC and California exhibit cyclical patterns over time, but DC has a pronounced negative trend over time that which is not apparent for California. Finally, both Utah and Missouri exhibit similar trends for marijuana legalization.

Overall, the results suggest that states exhibit divergent trends on all state-level measures (as if evident from the significant random year coefficients), but the extent to which these trends are different depends on the issue. By comparing both the size of the random effects in Table 6 and the plotted trajectories in Figure 2, states are most divergent for the death penalty, abortion attitudes, and welfare spending preferences. Empirically, the states also exhibit different year slopes for education spending preferences and marijuana legalization, but once plotted, we see that these differences are quite small.

Discussion

The goals of this paper were to (1) create valid, dynamic measures of state public opinion and (2) assess whether state level opinion measures were stable or dynamic and homogeneous or

heterogeneous across the states. In regards to the first goal, I created valid and reliable measures of state public opinion over time on five different issues: the death penalty, abortion, education spending, welfare spending, and marijuana legalization.

In a first step to understanding dynamic policy responsiveness at the sub-national level, I explored the dynamic properties of each state level measure. I found that the patterns of dynamism and heterogeneity across states vary across issues. Both preferences towards the death penalty and education spending exhibited the most change across time, but these patterns of change were different. We saw a curvilinear pattern with the death penalty and an overall increasing pattern with education spending. When looking at individual states, however, we saw heterogeneous trends, particularly with the death penalty. Conversely, we saw that abortion attitudes were the most stable of all the issue areas at the national level, but a closer look at the states suggested that this stability was due to heterogeneous, and opposite, trends. Finally, both preferences towards welfare spending and marijuana legalization exhibited cyclical patterns of change. And, states were vastly different in their patterns of change for welfare spending with some following the national trend and others exhibiting an overall decline.

Methodologically, these results suggest that scholars should be wary when pooling years to measure state public opinion because the assumption that state public opinion does not change or that public opinion changes in homogeneous ways is incorrect, particularly for certain issues. In addition, the analyses above suggest that it is possible to measure dynamic state public opinion using the pooling technique coupled with multilevel modeling. These measures will be useful for scholars studying the dynamic link between public opinion and elite preferences in state legislatures, state courts (Brace and Boyea 2008), and the interest group community (Gray et al. 2004). And, because these measures have measure state public opinion beyond general

measures of state ideology, they will also be useful for scholars studying specific issue areas across the states.

More generally, the results of this paper suggest that models of dynamic policy responsiveness at the sub national level are not a one size fit all for all issue areas. For the death penalty, abortion, and welfare preferences, there is large unit heterogeneity in how public opinion changes over time. This suggests that differences in state policies may be linked to specific differences in the patterns of change in state public opinion for these areas. For education spending and marijuana legalization, however, we saw that states tended to change in similar ways across time. This suggests that differences in state policies may be linked to mediating factors, such as state legislature professionalism, which makes some states respond to changing public opinion more than others. It also suggests that for these issues, state officials may be waiting for mass public opinion to cross a certain threshold when responding with policy enactments. Regardless, the results presented in this paper point to the complexity scholars face when studying dynamic policy responsiveness across the US states.

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Table 1. Descriptive Information for Each Issue

	Total N Across All States and Years	Average N Per 5 Year Time Span
Proportion Favoring the Death Penalty	88,862	12,177
Proportion Favoring Legalized Abortion	51,785	10,523
Proportion Increase in Education Spending	84,928	16,502
Proportion Increase in Welfare Spending	62,958	11,021
Proportion Favoring Marijuana Legalization	44,475	8,518

Table 2. O'Brien Reliability Coefficients On State-Five-Year-Window Cluster

Proportion Favoring the Death Penalty	.91
Proportion Favoring Legalized Abortion	.92
Proportion Increase in Education Spending	.93
Proportion Increase in Welfare Spending	.88
Proportion Favoring Marijuana Legalization	.84

Table 3. Validity of State Public Opinion Measures

			Regression Analyses with Panel Corrected Standard Errors			
Dependent Variable	**State Public Opinion Measure**	**Bivariate Correlation**	**Public Opinion Slope Coefficient**	**State Ideology Slope Coefficient**	**N of Obs**	**N of Groups**
Number of Executions, 1977-2006	Proportion Favoring the Death Penalty	.02	66.44 *** (17.93)	-.877 *** (.170)	1212	49
Percentage of Women State Legislators, 1990-2005	Proportion Favoring Legalized Abortion	.57	51.85 *** (2.40)	-.04 (.11)	312	48
Per Pupil Expenditures in 1992 Constant Dollars, 1975-1996	Proportion Increase in Education Spending	.36	5042.04 *** (1078.48)	47.02 *** (11.03)	903	48
State Poverty Rate, 1980-2004	Proportion Increase in Welfare Spending	.41	25.47 *** (6.52)	-.13 *** (.03)	825	49
Percentage Users of Marijuana in Past Month, 2000	Proportion Favoring Marijuana Legalization	.57	15.86 *** (4.04)	.04 *** (.03)	49	49

Note: There was only 1 year in which data was available for both state public opinon on marijuana and percentage of users. These coefficients are from an OLS regression without panel correct standardized errors.
***p<.001, one-tailed tests; panel corrected standard errors in parentheses

Table 4. Descriptive Information for State Public Opinion Measures

		Mean	Variance
Proportion Favoring the Death Penalty	Overall	.70	.009
	Across States		.001
	Across Time		.008
Proportion Favoring Legalized Abortion	Overall	.39	.009
	Across States		.006
	Across Time		.002
Proportion Increase in Education Spending	Overall	.64	.008
	Across States		.002
	Across Time		.006
Proportion Increase in Welfare Spending	Overall	.20	.006
	Across States		.002
	Across Time		.003
Proportion Favoring Marijuana Legalization	Overall	.23	.004
	Across States		.001
	Across Time		.003

Table 5. Hierarchical Linear Model of the Effect of Time on State Public Opinion

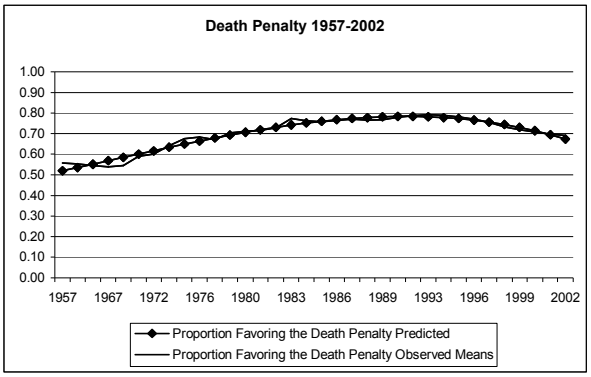
	Fixed Effects					Random Effects				Fit Statistics		
	Intercept	Year Slope	Year² Slope	Year³ Slope	Year^4 Slope	Intercept Variance	Year Slope Variance	Year² Slope Variance	Residual Variance	REML Deviance	AIC	BIC
Proportion Favoring the Death Penalty	.52 ***	.02 ***	.0002 *	-.00001 ***		.007	.00005	.00000002	.001	-6330	-6310	-6256
	(.01)	(.001)	(.00006)	(.000001)								
Proportion Favoring Legalized Abortion	.36 ***	-.01 ***	.003 ***	-.0001 ***		.01	.0003	.000001	.001	-2522	-2502	-2456
	(.01)	(.003)	(.0004)	(.00001)								
Proportion Favoring Increase in Education Spending	.49 ***	.02 ***	-.0003 ***			.006	.00009	.0000001	.001	-4280	-4262	-4217
	(.01)	(.001)	(.00005)									
Proportion Favoring Increase in Welfare Spending	.23 ***	-.06 ***	.012 ***	-.001 ***	.00002 ***	.009	.00002		.0011	-3900	-3884	-3845
	(.01)	(.003)	(.00046)	(.00003)	(.000001)							
Proportion Favoring Marijuana Legalization	.19 ***	.03 ***	-.004 ***	.0001 ***		.003	.00002	.00000003	.001	-4519	-4499	-4448
	(.01)	(.001)	(.0001)	(.000004)								

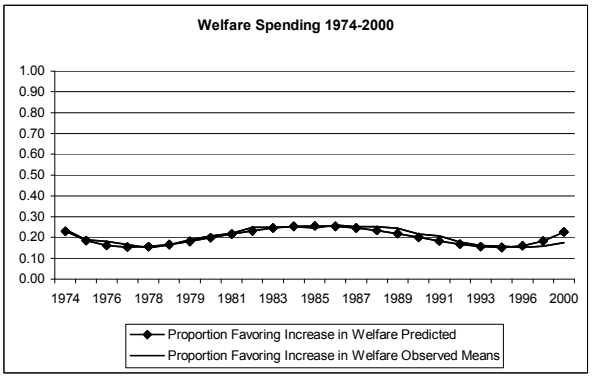
Note: * p<.05, **p<.01, ***p<.001 with a two-tailed test. Standard errors in parentheses. The model also estimates the covariance between all of the random effects; these are not presented in the table to preserve space, but are available from the author by request

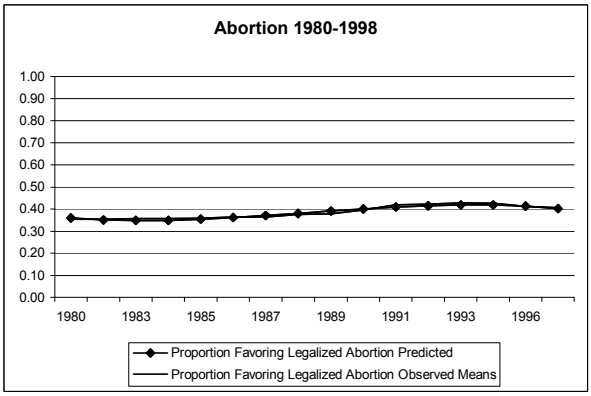
Table 6. Bayesian Random Effects of The Intercepts and Year Slopes for each State across Issue Areas

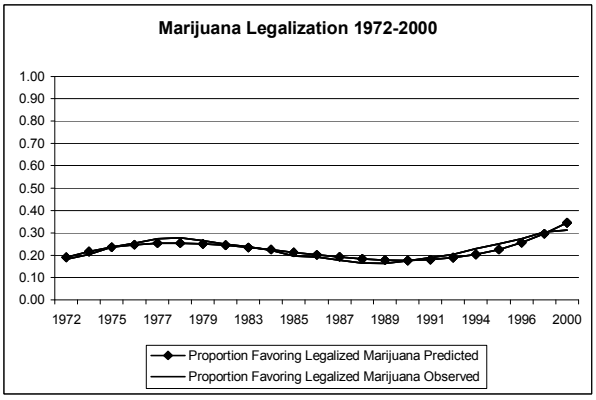
	Proportion Favoring the Death Penalty			Proportion Favoring Legalized Abortion			Proportion Favoring Increase in Education Spending			Proportion Favoring Increase in Welfare Spending		Proportion Favoring Marijuana Legalization		
	Level in 1957	Year	Year²	Level in 1980	Year	Year²	Level in 1975	Year	Year²	Level in 1974	Year	Level in 1972	Year	Year²
Alabama	.45	.021	.0001	.21	-.002	.002	.59	.008	.0001	.39	-.06	.14	.034	-0.005
Alaska	.53	.013	.0002	.42	-.016	.004	.51	.018	-.0004	.22	-.06	.22	.030	-0.004
Arizona	.63	.008	.0003	.37	-.010	.003	.47	.021	-.0004	.21	-.06	.22	.030	-0.004
Arkansas	.40	.023	.0001	.33	-.040	.005	.45	.022	-.0005	.34	-.06	.13	.034	-0.004
California	.60	.012	.0002	.54	-.019	.004	.51	.020	-.0004	.20	-.05	.29	.034	-0.004
Colorado	.59	.009	.0003	.43	-.027	.004	.46	.021	-.0004	.20	-.05	.29	.027	-0.004
Connecticut	.55	.014	.0002	.46	-.018	.003	.46	.024	-.001	.18	-.05	.27	.023	-0.004
Delware	.60	.007	.0004	.39	-.004	.003	.55	.004	.0003	.16	-.05	.22	.027	-0.004
DC	.66	.0001	.0004	.41	.029	.000	.72	.001	.0001	.52	-.07	.27	.030	-0.004
Florida	.47	.026	-.0001	.38	-.021	.004	.57	.011	-.0001	.20	-.05	.21	.030	-0.004
Georgia	.46	.020	.0001	.31	-.023	.004	.61	.005	.0001	.36	-.06	.14	.035	-0.005
Hawaii	.42	.026	-.0001	.38	-.011	.003	.50	.016	-.0003	.25	-.06	.29	.022	-0.004
Idaho	.48	.021	.0001	.36	-.012	.003	.45	.022	-.0004	.22	-.06	.22	.026	-0.004
Illinois	.58	.014	.0002	.39	-.012	.003	.55	.015	-.0003	.34	-.06	.22	.028	-0.004
Indianna	.53	.017	.0001	.31	-.013	.003	.46	.021	-.001	.24	-.06	.14	.035	-0.005
Iowa	.56	.010	.0003	.32	.003	.002	.36	.029	-.001	.22	-.05	.18	.031	-0.004
Kansas	.50	.020	.00003	.38	-.046	.006	.50	.001	.0003	.19	-.05	.14	.030	-0.004
Kentucky	.44	.020	.0001	.26	-.014	.003	.61	.010	-.0003	.21	-.05	.18	.028	-0.004
Louisana	.67	.001	.0004	.26	-.021	.003	.59	.015	-.0003	.26	-.06	.13	.038	-0.005
Maine	.46	.021	.00004	.39	-.010	.003	.33	.038	-.001	.27	-.06	.18	.034	-0.004
Maryland	.50	.017	.0001	.47	-.016	.003	.48	.016	-.0001	.21	-.05	.21	.029	-0.004
Massachusetts	.63	.003	.0004	.49	-.035	.005	.50	.024	-.001	.18	-.05	.24	.030	-0.004
Michigan	.52	.014	.0002	.30	-.004	.003	.51	.013	-.0003	.18	-.05	.21	.026	-0.004
Minnesota	.40	.023	-.00001	.30	-.007	.003	.38	.021	-.0003	.16	-.05	.14	.030	-0.004
Mississippi	.44	.020	.0001	.38	-.044	.005	.65	.013	-.0004	.65	-.07	.13	.034	-0.004
Missouri	.50	.019	.0001	.35	-.003	.002	.44	.024	-.001	.27	-.06	.14	.037	-0.005
Montana	.57	.014	.0002	.42	-.014	.003	.42	.016	.0000	.15	-.05	.20	.030	-0.004
Nebraska	.62	.009	.0004	.30	.009	.002	.44	.022	-.001	.18	-.05	.19	.031	-0.004
Nevada	.57	.012	.0003	.39	-.009	.003	.53	.016	-.0004	.24	-.06	.19	.031	-0.004
New Hampshire	.55	.014	.0002	.37	-.004	.003	.54	.013	-.0002	.24	-.06	.18	.032	-0.004
New Jersey	.66	.003	.0004	.48	-.027	.004	.44	.018	-.0002	.16	-.05	.22	.029	-0.004
New Mexico	.56	.011	.0003	.37	-.016	.003	.52	.015	-.0002	.21	-.05	.17	.033	-0.004
New York	.56	.012	.0002	.53	-.027	.004	.58	.003	.0002	.23	-.06	.27	.026	-0.004
North Carolina	.51	.010	.0003	.31	-.026	.004	.49	.016	-.0002	.20	-.05	.07	.039	-0.005
North Dakota	.39	.026	.0000	.33	-.013	.003	.48	.011	.0001	.16	-.05	.18	.026	-0.004
Ohio	.51	.020	.0001	.33	-.005	.003	.52	.016	-.0004	.25	-.06	.18	.029	-0.004
Oklahoma	.49	.022	.0001	.34	-.015	.003	.52	.013	-.0001	.20	-.05	.19	.032	-0.005
Oregon	.48	.018	.0001	.42	.006	.002	.49	.010	.0001	.24	-.06	.29	.027	-0.004
Pennsylvania	.59	.014	.0002	.37	-.007	.003	.44	.024	-.001	.20	-.05	.19	.028	-0.004
Rhode Island	.43	.024	-.0001	.44	-.011	.002	.41	.034	-.0009	.19	-.05	.20	.029	-0.004
South Carolina	.41	.028	-.0001	.30	.010	.002	.60	.002	.0002	.30	-.06	.18	.035	-0.005
South Dakota	.49	.015	.0003	.27	-.005	.003	.46	.023	-.001	.21	-.05	.20	.028	-0.004
Tennessee	.39	.024	.0000	.34	-.029	.004	.45	.024	-.001	.19	-.05	.10	.035	-0.004
Texas	.49	.020	.0001	.30	-.007	.003	.46	.016	-.0001	.23	-.06	.14	.034	-0.004
Utah	.71	.004	.0004	.26	-.038	.005	.48	.015	-.0001	.19	-.05	.19	.022	-0.004
Vermont	.52	.018	-.0001	.41	-.027	.004	.39	.035	-.001	.18	-.05	.29	.025	-0.004
Virginia	.41	.021	.0001	.34	.014	.001	.50	.023	-.001	.21	-.05	.19	.035	-0.005
Washington	.50	.020	.0001	.47	.019	.001	.43	.030	-.001	.23	-.06	.26	.035	-0.005
West Virginia	.50	.017	.0001	.24	.008	.002	.52	.013	-.0002	.22	-.06	.08	.038	-0.004
Wisconsin	.47	.018	.0001	.26	.032	.0002	.33	.024	-.0004	.13	-.05	.19	.031	-0.004
Wyoming	.66	.012	.0001	.41	-.012	.002	.46	.017	-.0002	.13	-.05	.18	.030	-0.004

Figure 1. Predicted and Observed Means for State Level Measures









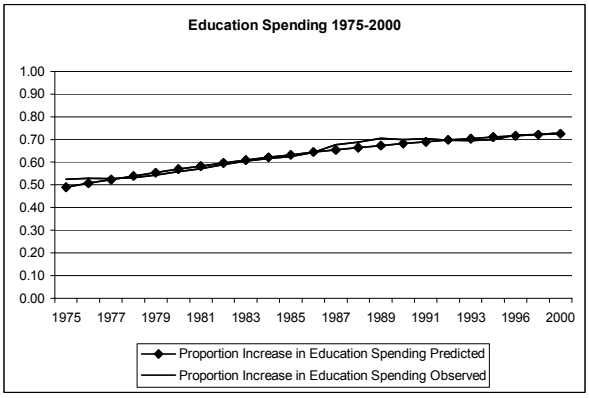
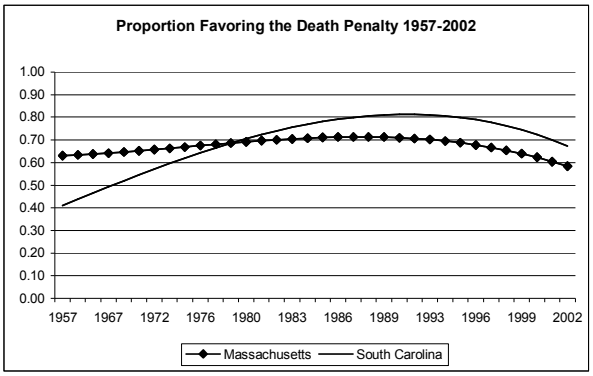
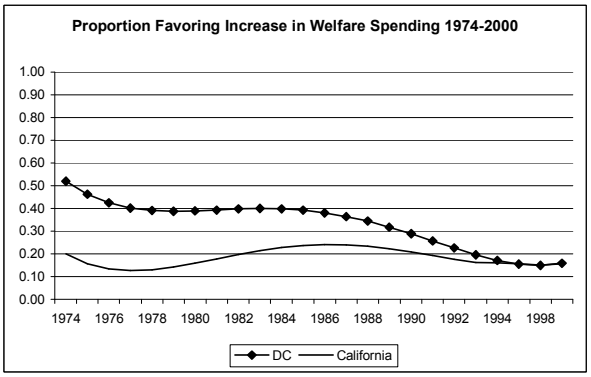
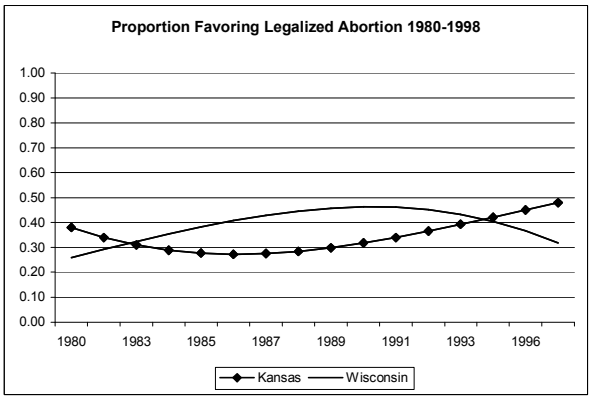
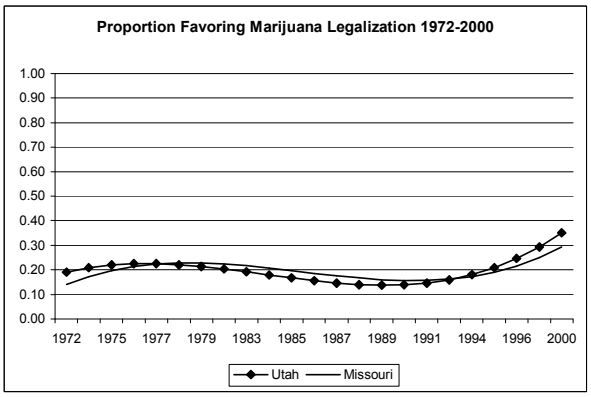


Figure 2. Predicted Trajectories for Two States for Each Issue Area









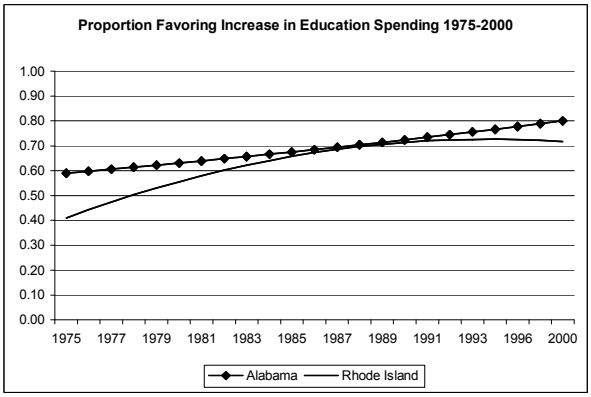


Table A1. Survey Organization, Question Wording, Coding of State Public Opinion for Each Issue Area

Death Penalty			
General Social Survey	Do you favor or oppose the death penatly for persons convicted of murder?	1972-1990, 1991, 1993, 1994, 1996, 1998, 2000, 2002	1=Favor, 0=Oppose
Gallup	Are you in favor of the death penalty for a person convicted of murder?	1953, 1956, 1957, 1960, 1966, 1967, 1969, 1971, 1972, 1976, 1978, 1980, 1981, 1982, 1985, 1986, 1991, 1994, 1995, 1999, 2000, 2001, 2003, 2006	1=Favor, 0=Oppose
CBS/New York Times	Do you favor or oppose the death penalty for persons convicted of murder?	1988, 1989, 1995, 1997, 2001, 2002	1=Favor, 0=Oppose
Abortion			
General Social Survey	Do you think abortions should be legal under any circumstances, legal only under certain circumstances, or illegal in all circumstances?	1977, 1978, 1980, 1982-1985, 1987-1991, 1993, 1994, 1996, 1998, 2000	1=Legal under any circumstances, 0=Legal only under certain circumstances, illegal in all circumstances
National Election Survey	Please tell me which one of the opinions best agrees with your view. 1. By law, abortion should never be permitted 2. The law should permit abortion only in case of rape,incest, or when the woman's life is in danger 3. The law should permit abortion for reasons other than rape, incest, or danger to the woman's life, but only after the need for the abortion has been clearly established. 4. By law, a woman should always be able to obtain an abortion as a matter of personal choice.	1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2004	1=women should always be able to obtain an abortion as a matter of personal choice, 0=else
Education Spending			
General Social Survey	We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount. g. improving the nation's education system.	1973-1980, 1982-1991, 1993, 1994, 1996, 1998, 2000	1=too little, 0=too much, about right
	We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount. g. education	1984-1991, 1993, 1994, 1996, 1998, 2000	1=too little, 0=too much, about right
National Election Survey	If you had a say in making up the federal budget this year, for which programs would you like to see spending increased and for which would you like to see spending decreased: Should federal spending on public schools be increased, decreased or kept about the same?	1984, 1988, 1990, 1992, 1994, 1996, 2000, 2002, 2004	1=increased, 0=decreased, kept about the same
Gallup	(I am going to ask you several additional questions about government spending. In answering, please bear in mind that sooner or later all government spending has to be taken care of out of the taxes that you and other Americans pay. As I mention each program, tell me whether the amount of money now being spent for that purpose should be increased, kept at the present level, reduced, or ended altogether.) How about spending for...federal money to improve the quality of public education?	1984, 1986, 1989, 1991, 1998	1=increased, 0=decreased, kept about the same
CBS/New York Times	Should federal spending on education be increased, decreased, or kept about the same?	1979, 1988, 1990, 1996	1=increased, 0=decreased, kept about the same
Roper	(We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount.)...improving the nation's education system	1974-1977, 1979-1986	1=too little, 0=too much, about right
Welfare Spending			
General Social Survey	We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount. k. Welfare	1973-1980, 1982-1991, 1993, 1994, 1996, 1998, 2000	1=too little, 0=too much, about right
National Election Survey	If you had a say in making up the federal budget this year, for which programs would you like to see spending increased and for which would you like to see spending decreased: Should federal spending on welfare programs be increased, decreased or kept about the same?	1992, 1994, 1996, 2000, 2002, 2004	1=increased, 0=decreased, kept about the same
Gallup	Here are some of the things the federal government spends money on. For each one, would you please tell me whether you think the government should be spending more money than it is now, less money than it is now, or should the government continue spending about the same amount as now? Welfare	1980	1=more money, 0=less money, the same amount
CBS/New York Times	(We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount.)... Are we spending too much, too little, or about the right amount... on welfare?	1992	1=too little, 0=too much, about right
Roper	(We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount.)...welfare	1974-1986	1=too little, 0=too much, about right
Marijuana Legalization			
General Social Survey	Do you think the use of marijuana should be made legal or not?	1973, 1975, 1976, 1978, 1980, 1983, 1984, 1986-1991, 1993, 1994, 1996, 1998, 2000	1=Yes, 0=No
Gallup	Do you think the use of marijuana should be made legal or not?	1969, 1970, 1972, 1973, 1977, 1979, 1980, 1985, 1987, 1995, 2001, 2003	1=Yes, 0=No
CBS/New York Times	Do you think the use of marijuana should be made legal or not?	1979	1=Yes, 0=No
Roper	Do you think the sale of marijuana to people 18 years of age and older should be made legal, or that it should not be legal?	1975, 1977	1=Yes, 0=No