

**Changing Sides or Changing Minds? Party Conversion,
Issue Conversion, and Partisan Change on the Abortion Issue**

Thomas M. Carsey
Department of Political Science
Florida State University
Tallahassee, FL 32306
tcarsey@fsu.edu

and

Geoffrey C. Layman
Department of Government and Politics
University of Maryland
College Park, MD 20742
glayman@gvpt.umd.edu

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Political scientists have devoted considerable attention to changes in the electoral coalitions of the American political parties,¹ and generally have identified the development of new partisan conflicts—the polarization of the parties’ electoral coalitions along the lines of a new set of policy issues—as a central feature of such transformations (e.g. Schattschneider 1960; Burnham 1970; Sundquist 1983; MacDonald and Rabinowitz 1987; Carmines and Stimson 1989; Carmines 1991; Adams 1997). This literature focuses primarily on aggregate-level trends in the issue positions and other characteristics of the parties’ mass coalitions, and devotes less attention to the individual-level process that drives the development and growth of new party cleavages. However, it generally is undergirded by an implicit (or sometimes explicit) theory of individual-level partisanship that views party attachments as changing in response to issue preferences. In other words, this research assumes that party polarization on new issues increases because individuals change their party attachments in response to their attitudes on the new issues, and does not consider the possibility of party-based change in issue preferences.

There is, of course, a considerable body of scholarship that has focused directly on individual-level party identification and its relationship to policy attitudes and other political evaluations. While some micro-level theories of party identification support the assumptions of the literature on macro-level partisan change, other theories see party identification as the most powerful and deeply-held of citizens’ political orientations, and thus much more likely to shape preferences on policy issues than to be shaped by them. From this perspective, increases in partisan issue polarization are more likely to result from individuals changing their policy attitudes to match their party loyalties than from the reverse.

In this paper, we seek to gain a better understanding of aggregate-level partisan change by focusing more attention on the micro-level process that underlies it. We contend that the growth

¹ See Key 1955, 1959; Schattschneider 1960; Campbell 1966; Burnham 1970; Beck 1974, 1979; Clubb, Flanigan, and Zingale 1980; Petrocik 1981; Sundquist 1983; Carmines and Stimson 1989; and Aldrich 1995, 1999 for some of the major theoretical treatments of partisan change in the mass electorate. Some accounts view such transformations as occurring suddenly, over the course of one or two “critical” elections (Key 1955; Burnham 1970; Sundquist 1983), while others contend that electoral change evolves more gradually over the course of several elections or decades (Key 1959; Carmines and Stimson 1989; Mayhew 2002). Our focus here is on partisan change generally, whether it is sudden or gradual.

and development of party polarization on new issues may occur both because individuals change their party ties based on their issue preferences and because individuals change their issue positions in response to their party identifications, and we identify the circumstances under which each process should occur. We test our argument by focusing on the relationship over time between citizens' party identifications and their attitudes on the abortion issue: a focal point of recent partisan change and the contemporary political issue that is perhaps least likely to be associated with party-based issue conversion and to support our account. We examine the relationship between party identification and abortion attitude with data from the 1992-1994-1996 National Election Study (NES) panel and through ecological inference of cross-sectional NES surveys from 1980 to 2000.

Party Identification and Policy Attitudes at the Macro and Micro Levels

The partisan change literature offers several answers to the question of what leads to increased issue polarization between the parties' mass coalitions. Some scholars focus on party conversion, with change resulting primarily from large numbers of individuals discarding old party attachments for new ones when a new set of issues emerges on the scene (Erikson and Tedin 1981; Sundquist 1983; Burnham 1970). Others argue that aggregate partisan change stems primarily from mobilization, with large numbers of previously inactive or unattached voters being aroused by the new issues and choosing a party affiliation based on them (Andersen 1976, 1979; Clubb, Flanigan, and Zingale 1980).² A third group focuses on generational replacement, through which older voters who came of political age before the emergence of the new issues are replaced by younger voters for whom the new issues are more salient and thus more relevant to party loyalties (Beck 1979; Carmines and Stimson 1989).³

All of these accounts of partisan change share the implicit or explicit assumption that the

² Petrocik (1981) also examines demobilization.

³ In their study of movement in "macropartisanship" over the last 40 years, Erikson, MacKuen, and Stimson (2002) argue that all three processes may be at work, but view individual party conversion as the main causal factor. However, they find no relationship between macropartisanship and aggregate policy opinion.

views citizens hold on issues drive their party affiliations. Party polarization on the new issues increases because of either party identifiers changing partisan sides or independents and new voters choosing a party affiliation based on the new source of partisan conflict. They do not consider the possibility that partisanship drives issue positions, or that change in individual issue positions rather than party identification contributes substantially to mass party polarization.⁴

There is a logical reason for this: the issues at the heart of partisan change are ones on which most people are unlikely to change their minds. Unlike most political issues, toward which most citizens are apathetic and on which attitudes are weak and unstable, “realigning” issues or “issue evolutions” arouse the passions of the mass public. They tend to be easily understood, to produce strong emotions, and to be associated with deeply-held attitudes (Sundquist 1983; Carmines and Stimson 1989). Indeed, attitudes on the two sets of issues most closely associated with recent partisan change – racial issues in the 1960s and early 1970s (Carmines and Stimson 1989) and cultural issues in the 1980s and 1990s (Adams 1997; Layman 2001) – have been shown to be noticeably more stable than attitudes on other issues (Converse 1964; Converse and Markus 1979). Thus, students of partisan change understandably assume that increased divisions between Democratic and Republican party identifiers on these “easy” issues must be, as Adams (1997) notes of the abortion issue, “. . . the result of people changing their parties instead of their attitudes” (p. 729).

Of course, the relationship between individuals’ party ties and policy attitudes (and other political orientations) has been examined much more directly in the voluminous literature on citizens’ party identifications.⁵ While some of this research echoes the micro-level themes in the macro-level literature, a large body of work points to very different expectations for individual-level partisan change.

⁴ A few studies recognize that the policy attitudes of existing partisans may change during the partisan change process (Clubb, Flanigan, and Zingale 1990; Hurley 1989, 1991), but they do not undertake any empirical examination of individual-level attitudinal conversion or offer conceptual explanations for why it may occur. An exception is Gerber and Jackson (1993), but their focus is not principally on the partisan change process.

⁵ See Fiorina (2002) for a recent review.

The supportive portion of the literature, generally labeled the “revisionist” perspective on party identification, echoes the micro-level themes in the partisan change literature. This view is developed most fully in Fiorina’s (1981) portrayal of party identification as a “running tally” of citizen evaluations of other political objects and events, and is formalized by Achen’s (1992) conceptualization of partisanship as a Bayesian updating, or learning, process. Building on Downs’ (1957; see also Key 1966) treatment of party preference as a decision shortcut based on which party’s ideological and policy stands tend to be closest to those of the citizen, this perspective does not view party identification as a psychological or group attachment independent of citizens’ evaluations of contemporary politics. Rather, it represents a summary of those evaluations. Thus, party identification might change in response to policy preferences, candidate evaluations, evaluations of party performance, and even voting decisions (Jackson 1975; Page and Jones 1979; Markus and Converse 1979; Fiorina 1981; Franklin and Jackson 1983; Franklin 1984; Brody and Rothenberg 1988).

This view clearly supports the idea that individuals might change their party loyalties in response to their attitudes on policy issues, particularly the highly-emotional, polarizing issues associated with periods of partisan change. But, does it see a role for party identification in shaping such attitudes? Downs clearly does not. For him, partisanship is simply a summary of policy preferences, not an organizer of them. Similarly, Fiorina and Achen assume that citizens’ updating of their party identifications is unbiased, with Democratic and Republican identifiers evaluating new political information in a similarly objective manner. On the other hand, some revisionists do leave open the possibility that partisanship may shape expectations of future party performance (Fiorina 1981) or be involved in a reciprocal relationship with policy preferences (Page and Jones 1979; Franklin 1984; Jackson 1975).

However, the general tenor of this research is that partisanship is more a summary of other political attitudes than a molder of them. As Bartels notes, “the running tally may be a convenient accounting device, but it is not a moving force in politics” (2002, p. 119). That, it seems to us, should be particularly true when the attitudes in question are deep-seated views on

the powerful issues related to partisan change. Thus, from this perspective, when individuals' positions on such issues are in conflict with their party ties, their party identifications should be more likely than their policy preferences to change—just as the partisan change literature assumes.

In stark contrast to the revisionist perspective on individual-level party identification is the very view it sought to revise – a view that suggests a very different micro-level explanation for aggregate party polarization than the typical one in the partisan change literature. The so-called “Michigan model” of political behavior, spawned by and most fully-developed by Campbell et al. (1960), emphasizes “the [prominent] role of enduring partisan commitments in shaping attitudes toward political objects” (p. 135). For Campbell et al. (1960) and the large body of work that has adopted their perspective (e.g. Goldberg 1966; Kelley and Mirer 1974; Nie, Verba, and Petrocik 1976; Miller and Shanks 1996; Miller 2000), party identification is an “unmoved mover:” a deeply-held psychological attachment to a political party that is (i) largely unchanging over time even as events change, and (ii) a filter through which citizens view and interpret new political information. In short, party identification influences policy preferences and other political attitudes, but is largely exogenous to them.

Although the Michigan model came under heavy theoretical and empirical fire from revisionist scholars in the 1970s and 1980s, more-recent work provides substantial reinforcement of its claims. Donald Green and his colleagues make the case against revisionist thinking on both empirical and theoretical grounds. They show that, when random measurement error is corrected, party identification is almost entirely exogenous to issue, candidate, and performance evaluations in the short-run (Green and Palmquist 1990, 1994; Green, Palmquist, and Schickler 2002). They reject Achen's conceptualization of party identification as a Bayesian updating process, suggesting that it is incompatible with the reality of partisan stability (Gerber and Green 1998). Instead, they argue that party ties represents an attachment to a group similar to religious identification (Green, Palmquist, and Schickler 2002). In short, these scholars reaffirm the view of partisanship as a deeply-rooted social identity that is independent of other political evaluations and to which most citizens hold firm.

On the other hand, Green and his colleagues depart substantially from a key component of the Michigan perspective. They provide evidence that Democratic and Republican identifiers update their political evaluations in similar ways, and thus reject the idea that party identification serves as a perceptual screen which shapes the evaluation of new political information (Gerber and Green 1999; Green, Palmquist, and Schickler 2002).⁶

Of course, a number of scholars do document the causal role of partisanship in changing political evaluations (e.g. Berelson, Lazarsfeld, and McPhee 1954; Markus and Converse 1979). Zaller (1992), for example, contends that partisan predispositions regulate the flow of information from political elites to the mass public, and shows that individuals often bring their own policy attitudes into line with those of their party's leaders. Bartels (2002) offers even stronger support for the Michigan model, providing clear evidence of the effect of party identification in shaping political evaluations and suggesting that the evidence Gerber and Green (1999) present of unbiased updating actually confirms that there is a partisan bias in updating. The combination of the evidence on the stability of party identification and that on its role in shaping political attitudes suggests that the view of party identification as a largely unmoved mover may not be far from reality.

Toward a Broader Account of Party and Issue Change

We contend that the partisan change literature's account of the individual-level process producing partisan issue polarization is incomplete. By assuming that individuals resolve conflicts between their party ties and positions on new polarizing issues by changing partisan sides and not their minds on the issues, it follows the revisionist or "running tally" view of individual partisanship. However, it does not take into account the long-standing and recently

⁶ It is not clear whether this also applies to policy attitudes. Their evidence for a lack of partisan bias in citizens' updating processes focuses on evaluations of party performance and objective events, and not on issue positions. Meanwhile, some of their language—for example, "When people feel a sense of belonging to a given social group, they absorb the doctrinal positions that the group advocates" (Green, Palmquist, and Schickler 2002, p. 4)—suggests a role for party identification in shaping attitudes toward policy issues, but they do not directly examine that role.

reaffirmed view that party identification is a deeply-held attachment that is mostly independent of other political attitudes. From this perspective, an aggregate-level increase in party polarization on new issues should result in large part from individuals changing their issue positions to fit with their party ties, and not just from the reverse.

While this perspective emphasizes the role of party identification in shaping political attitudes, it does not rule out the possibility of issue-based change in party identification. Campbell et al. (1960) acknowledge that when individuals feel particularly strongly about issues on which they differ with their party, “the pressure [may be] intense enough [that] a stable partisan identification may actually be changed” (p. 135). What sorts of political attitudes are likely to create enough “pressure” that individuals may be moved to shift their party loyalties? A likely culprit, it seems to us, are deeply-held attitudes on the emotional and polarizing issues associated with partisan change.⁷ Thus, while party identification may be the causal force in its relationship with most policy preferences, attitudes toward value-laden “easy” issues such as abortion and civil rights may lead to shifts in party ties for some citizens.

Following this perspective, we argue that party polarization on powerful new issues may result both from party-based issue change and issue-based party change among individuals. When Democratic and Republican leaders, candidates, and platforms take distinct stands on these issues, some citizens will experience cognitive dissonance, or “pressure,” as they realize a growing disparity between their party identifications and their issue attitudes. Some of these individuals may respond by altering their party affiliations, as the partisan change literature expects, while others may move their issue positions closer to the stands of their party’s leaders and platforms, as Zaller (1992) predicts.

The key question is who does what? Who should change their party identifications and

⁷ While Green, Palmquist, and Schickler (2002) emphasize party identification’s lack of responsiveness to policy attitudes and other political evaluations, they do acknowledge the possibility of issue-based changes in party ties in special circumstances (pp. 106-07, 158-61). However, they argue that a more likely explanation for partisan change is that individuals’ images of the social group identity of the parties change. Of course, it is quite possible that the powerful issues associated with party transformations may, in fact, help to change the social images of the parties for many citizens.

who should change their issue preferences? The answer rests on two individual-level factors: awareness of party differences on the issue and the salience of that issue. In order for individuals to change either their party identifications or their attitudes on an issue in response to each other, they must first recognize that there are differences between the parties' stands on the issue. Past research has established that for there to be a relationship between policy issues and either aggregate partisan change (Sundquist 1983; MacDonald and Rabinowitz 1987; Carmines and Stimson 1989) or individual voting behavior (Campbell et al. 1960; Page and Brody 1972), parties and candidates have to take distinct positions on the issues and citizens have to be aware of partisan differences. Individuals who do not recognize that the parties have taken divergent stands on an issue should not perceive any conflict between their partisanship and their issue position, and should have no reason to change either their position or their party identification.

For individuals who are aware of party differences on the new issue and who do perceive a conflict between their party affiliations and their issue-attitudes, the salience of the issue to the individual is critical. While the highly-emotional "easy" issues associated with periods of partisan change may be the policy concerns most likely to put "pressure" on the partisan identities of significant numbers of citizens, the degree to which they apply such pressure should, of course, vary across individuals. The literature on aggregate-level partisan change suggests that in order for new issues to produce major electoral transformations, they must be highly salient to many, perhaps most, citizens (Schattschneider 1960; Sundquist 1983; Carmines 1991). At the individual level, the literature on issue voting indicates that the electoral impact of particular issues is greatest for those individuals who find them to be particularly salient (RePass 1971; Brody and Page 1972), while the idea of "issue publics" suggests that individuals who place considerable importance on a certain issue are likely to structure their political choices around that issue (e.g. Converse 1964; Krosnick 1990). Given the centrality and stability of party identification, the only individuals who should change their partisanship on the basis of their views on new issues are those who find the issues to be particularly salient. Individuals who perceive a conflict between their party ties and their views on new issues, but do not find those

issues to be especially important, should resolve the conflict by changing their issue-attitudes rather than their party leanings.

Assessing the Argument

We evaluate our account of the role of partisan conversion and issue conversion in the partisan change process, and our hypotheses about how these changes are conditioned by awareness of party differences and issue salience, from the perspective of the powerful issue of abortion rights. The abortion issue is appropriate for this study for two key reasons. First, it is an issue that has been at the heart of contemporary partisan change. In the last three decades, party polarization on abortion has grown substantially at nearly all levels of politics: in the roll-call votes of Democratic and Republican members of Congress (Adams 1997; Layman 2001), in the attitudes of both grassroots-level party activists and delegates to the parties' national conventions (Layman and Carsey 1998; Carmines and Woods 2002), in the platforms adopted by the parties' conventions (Layman 2001), and in the positions of the parties' mass electoral coalitions (Abramowitz 1994; Adams 1997). Moreover, although party differences on abortion began to emerge in the late 1970s and early 1980s, the period since the 1980s has witnessed increases in party polarization that were as large as or larger than those that occurred over the course of that decade.⁸

Second, abortion provides a particularly rigorous test of the idea that attitudinal conversion on new issues contributes to aggregate partisan change. Abortion, like most issues associated with significant partisan change, is clearly an "easy" issue that captures substantial attention from and generates intense emotions in the mass public (Carmines and Stimson 1989). And, like other easy issues, citizens' attitudes on abortion are far more stable and resistant to

⁸ The difference in the mean scores of Republican and Democratic identifiers in the National Election Studies on a four-point abortion scale increased from -.05 in 1980 to .08 in 1990 and to .36 in 2000. The difference in the mean scores of Republican and Democratic national convention delegates on a similar four-point scale increased from .55 in 1980 to .94 in 1988 and to 1.30 in 2000 (see XXXX for a description of the surveys of national convention delegates). The difference in the percentage of congressional Democrats and Republicans supporting the pro-choice position in roll-call votes on abortion (taken from Adams (1997) and Layman (2001)) increased from 30.8 in 1980 to 47.1 in 1989 and to 60.2 in 1996.

external political forces than are those on most other political issues (Converse and Markus 1979). As Adams (1997) notes in his account of partisan change on abortion, “given the particularly personal nature of the issue, one would not expect many people to change their minds on abortion” (p. 729).

The most direct way to sort out whether individuals are changing their party identifications in response to their attitudes on abortion or are changing their abortion attitudes in response to their party affiliations is to use panel data to estimate the following structural equation model:

$$\text{Abortion}_{it} = \alpha_1 + \lambda_1 \text{Abortion}_{i,t-1} + \beta_1 \text{Party ID}_{i,t-1} + \epsilon_{1,it}$$

$$\text{Party ID}_{it} = \alpha_2 + \lambda_2 \text{Party ID}_{i,t-1} + \beta_2 \text{Abortion}_{i,t-1} + \epsilon_{2,it}$$

This model extends Bartels’ (2002) model of the influence of partisanship on citizens’ updating of their political evaluations to propose “cross-lagged” effects between abortion attitude and party identification over time (e.g. Finkel 1995). The parameters connecting each variable at time t to its own previous value at time $t-1$, labeled λ_1 and λ_2 , capture the expected individual-level stability in both party identification and abortion attitude over time. The parameter linking party identification at $t-1$ to abortion attitude at t , labeled β_1 , captures the potential influence of previously held party attachment on current attitude on abortion. Since the model already controls for the effect of previous abortion attitude on current abortion attitude, this parameter can be viewed as measuring the impact of previous party identification on *change* in abortion attitudes from $t-1$ to t . Similarly, the parameter β_2 captures the influence of previous attitude on abortion on change in party identification from $t-1$ to t .

We model the relationship between abortion attitude and partisanship as reciprocal, but not simultaneous, for two reasons. First, unlike much of the individual-level party identification literature, we are less interested in whether partisanship is exogenous or endogenous to issue attitudes at a single point in time, and more interested in the effect of party identification on

changes over time in issue attitudes and of issue attitudes on changes over time in party ties. The cross-lagged-effects model is more appropriate than a model of contemporaneous effects for examining this.⁹ Second, Finkel (1995) demonstrates that the cross-lagged model's applicability is not limited to discrete time processes of change: for example, party identification in 1992 affects change in abortion attitudes between 1992 and 1994. Instead, it is appropriate even if we assume that the reciprocal effects between variables occur continuously over time.¹⁰ Under these circumstances, the cross-lagged model "tends not to be misleading about the direction of causal influence" (Dwyer 1983: 352).

We estimate this model using data from the three-wave panel study conducted by the National Election Studies (NES) in 1992, 1994, and 1996.¹¹ Of course, a potential limitation of this analysis, is the relatively short period of time covered by the panel. Traditionally, there has been no solution to this problem other than longer panel studies. However, the method of Ecological Inference (EI) developed by King (1997) provides the potential for gauging individual-level change from cross-sectional surveys. We apply this method to the presidential-year and midterm-year NES cross-sectional studies from 1980 through 2000 to gain a sense of the extent of individual-level change among Democratic and Republican identifiers on the abortion issue. The combination of panel analyses over a short period and ecological analysis of cross-sectional data covering a much longer period should provide a thorough look at the extent

⁹ Empirically, it turns out that the choice of a cross-lagged-effects model over a simultaneous-effects model is not of much consequence. We also estimated our model with contemporaneous effects between party identification and abortion attitude in 1994 and 1996 (using the previous panel wave's value of the dependent variable as the instrumental variable in each equation), and the reciprocal effects between the two variables are very similar to those presented here.

¹⁰ If the relationship between variables is continuous over time, then, if panel waves are equally spaced, the cross-lagged effects between different variables and the stability coefficients should be equal across panel waves (Finkel 1995). So, we restrict the cross-lagged effects between abortion attitude and party identification and the stability coefficients to be equal across the periods from 1992 to 1994 and from 1994 to 1996. We also estimated models that relaxed this equality assumption and the results are very similar to those presented here.

¹¹ We use the 1992-1994-1996 panel study for three main reasons. First, it covers a period of time during which the level of party polarization on abortion was sizeable and growing. Second, it has three waves of data, which allows us to correct for measurement error in party identification and abortion attitude. Third, the other panel studies conducted by NES since they began to ask a question on abortion in 1972 are not appropriate for our analysis for methodological reasons. The 1972-1974-1976 panel did not include a question about abortion in the 1974 wave. The wording of the abortion question changed between the second and third waves of the four-wave 1980 panel. The 1990-1992 panel only included two waves of interviews in which the abortion question was asked.

to which party-driven attitudinal conversion on issues contributes to aggregate partisan change.

Issue Conversion and Party Conversion in the NES Panels

In Table 1, we take a first look at the contribution made by party conversion and issue conversion to the increases in party polarization on abortion in the 1990s. We first show the mean party identification (on a seven-point scale ranging from strong Democrat to strong Republican) in the 1992 and 1996 waves of the panel for individuals who provided the same response to the abortion question in both waves. Next, we show the mean abortion attitude—coded from one for “always allow” to seven for “never allow” to be comparable with the seven-point party identification scale—in the two panel waves for individuals who kept the same three-category party identification across the two waves.¹²

In keeping with the dominant perspective on aggregate partisan change, there is evidence of individuals changing their party identifications in response to their abortion attitudes. Individuals who took one of the two most pro-choice positions on abortion (always allow, allow when there is a clear need) in both 1992 and 1996 became more Democratic in their party affiliations over the four-year period, while individuals who chose one of the two most pro-life options grew more Republican between 1992 and 1996.

At the same time, conversion on abortion among partisans also contributed to the growth in party polarization on abortion. Between 1992 and 1996, all three partisan groups moved in a pro-life direction. However, the movement toward the anti-abortion position was much stronger among individuals who identified as Republicans in both years than it was among Democrats and Independents. The end result is that, even when we focus on the same individuals over time (thus removing any change in the composition of the party coalitions), the difference between Democrats and Republicans on abortion in 1996 was noticeably larger than it was in 1992.¹³

¹² The three-category measure classifies independent leaners as independents.

¹³ As a check, we examined the two-wave 1990-92 NES panel using an abortion index composed of three separate questions and found similar patterns.

Of course, these estimates of change for both party identification and abortion attitudes may be contaminated by random measurement error. Failure to correct for such error in panel data can lead to the appearance of changes in attitudes or orientations when no real change has occurred, and both party identification (Green and Palmquist 1990) and issue attitudes (Krosnick 1991) are considerably more stable when measurement error is corrected than they appear to be when no corrections are made.

Having a three-wave panel allows us to estimate our model of cross-lagged effects between party identification and abortion attitude while correcting for measurement error in both variables. The standard assumptions for the measurement errors and the structural disturbance terms are that the covariances between the measurement errors and the latent variables and between the measurement errors and the disturbance terms are all zero (Bollen 1989b; Finkel 1995). Because we have only one observed indicator each for party identification and abortion attitude available in all three waves of the panel study, additional constraints are required for identification, and we employ a standard set of restrictions proposed by Wiley and Wiley (1970). We assume that the error variances of observed party identification are equal over time, that the measurement errors are uncorrelated with each other, and that the paths from latent party identification to observed party identification and from latent abortion attitude to observed abortion attitude are all equal to one.¹⁴ The latter constraint also ensures that latent party identification and abortion attitude have the same scales as the observed indicators of each (both

¹⁴ Green and Palmquist (1990, pp. 878-79) impose these same restrictions. Wiley and Wiley (1974) do propose a single-indicator measurement model with correlated measurement errors over time. However, Palmquist and Green (1992; see also Achen 1983) show that the correlated-error, single-indicator model produces anomalous and unreliable results with only three waves of data. Our own estimation of such models with the 1992-1994-1996 NES panel confirms such a conclusion.

The assumption of non-correlated measurement errors, while methodologically necessary, may have substantive implications. For example, positively correlated measurement errors on abortion attitude over time would upwardly bias our estimate of stability and reduce the possibility of party identification effecting change in it. However, if the stability of abortion attitude (or party identification) is overestimated, that makes it more, not less, difficult to find reciprocal effects between party identification and issue attitudes. As a check, we analyzed models using three observed indicators of cultural issue-attitudes both with and without correlated measurement errors over time. All results were very similar to those shown here. We focus only on abortion and not general cultural attitudes here in part to make it comparable to how we measure partisanship, for which only one indicator is available.

ranging from one to seven).¹⁵

The structural portion of the model reflects our cross-lagged model, but includes measures of party identification and abortion attitudes at three points in time. This allows us to estimate the stability of these two attitudes as well as how each affects change in the other over time.¹⁶

Table 2 presents the estimates of the stability coefficients and cross-lagged effects in our model.¹⁷ Like past research, we find that when we correct for measurement error, party identification is highly stable over time. Its stability coefficients are over .9 (standardized coefficients of .89 or higher), indicating very little change in individuals' party identifications from one election year to the next. Also similar to past research, we find that abortion attitudes are quite durable from one election year to the next. In fact, the unstandardized and standardized stability coefficients suggest that these attitudes are just as stable over time as is partisanship.

Despite the enduring character of both party identification and attitudes toward abortion, we do find that they have statistically-significant reciprocal effects on each other over time. Individuals with pro-life attitudes on abortion in 1992 (1994) were more likely than individuals with pro-choice views to move their party identification in a Republican direction between 1992 and 1994 (1994 and 1996). At the same time, we also find that Republicans in 1992 (1994) were more likely than Democrats to convert to more conservative stands on abortion between 1992

¹⁵ In order to identify the model, we also set the variance of all of the disturbance terms to one.

¹⁶ Our statistical model also includes several demographic controls for race, gender, southern residence, age, income, education, and major religious tradition, all measured in 1992. As a further check on the robustness of our findings, we estimated models that allowed liberal-conservative identification in 1992 to affect change in both party identification and abortion attitude, parents' party identification (measured by respondents' recollections of their mother's and father's party identification) to affect change in party identification, and moral traditionalism (a latent variable with the four NES questions on traditional moral values as the observed indicators) in 1992 to affect change in abortion attitude. In every instance, the results for the reciprocal effects over time between party identification and abortion attitude were nearly identical to those presented here.

¹⁷ All analyses are based on only those individuals who responded to all three waves of the panel study. However, for that set of panel respondents, our analyses do not exclude missing values. We estimate our models using Amos 4.0, which computes full information maximum likelihood (FIML) estimates even in the presence of missing data (Andersen 1957). Wothke and Arbuckle (1996) describe the FIML procedure used by Amos and show that the estimates produced by it are more consistent and efficient than those produced by methods using pairwise or listwise deletion of missing observations.

and 1994 (1994 and 1996).

Although statistically-significant, neither of the cross-lagged effects is particularly large. A one-unit increase in identification with the Republican party leads to an increase in opposition to abortion rights of only .08 on a seven-point scale. On average, strong Republicans (seven on the party identification scale) only convert .48 scale points more in a pro-life direction than do strong Democrats (one on the party identification scale) over a two-year period. Similarly, a one-unit increase in opposition to abortion (on a one-to-seven scale) leads to an increase in Republican identification of only .05 on the seven-point scale. So, individuals preferring that abortion never be allowed by law (seven on the abortion scale) only increase their identification with the GOP by .30 points more than do individuals who prefer that abortion always be allowed (one on the scale). Of course, we would not expect these effects to be large. First, as their stability coefficients indicate, both abortion attitudes and party identification are deeply-held, highly-stable orientations. They should not change a great deal over a two-year period, particularly when random measurement error has been removed. Second, these estimates are for consecutive two-year periods. Over a longer period, they represent more substantial changes in both party identification and abortion attitudes.

By multiplying out effects along the paths in our cross-lagged model, we can extrapolate from the results presented in Table 2 to get a sense of the magnitude of the effect of party identification and abortion attitude on each other over a longer period of time. For example, a one-unit change in party identification at a particular point in time along its seven-point scale results in change on the seven-point abortion scale of .27 ten years later and of .35 twenty years later. Similarly, a one-point change on the abortion scale in a given year results in a .17 unit change in party identification ten years later and a change of .22 twenty years later. Another way to interpret these results is to imagine a point in time where Strong Democrats and Strong Republicans do not differ from each other on the abortion scale. Using the results of our analysis, we would expect them to differ from each other on abortion attitudes by 1.6 units (on a seven-point scale) in ten years and by 2.1 units after twenty years. These predicted effects over

longer periods of time are meant as heuristics designed to illustrate that the fairly small changes uncovered over a short two-year period can add up to fairly substantial differences over longer periods of time.

Moreover, we are not suggesting that a critical-election realignment on abortion occurred during the period from 1992 to 1996. Rather, we, like Adams (1997), propose that there has been a gradual increase in party polarization on abortion—an “issue evolution” rather than a critical realignment—over the last 30 years, with a noticeable growth in polarization in the 1990s. Our findings clearly demonstrate that this increase occurred not just because people changed their partisan ties in response to their positions on abortion, but also because people changed their abortion attitudes in response to their party affiliations.

Party-Based Issue Conversion from 1980 to 2000

The results from the three-wave 1992-94-96 panel study revealed evidence of both party conversion and issue conversion over that short period of time. Before considering exactly who converts on issues and who converts on partisanship, we assess the extent to which party-based issue conversion has contributed to the growth of party polarization on cultural issues over a longer period of time. It would be ideal to base such an analysis on a longer multi-wave panel study. However, no such data exist. Instead, we follow Penubarti and Schuessler (1998) and employ King’s (1997) method of ecological inference to estimate a model of attitudinal change based on a series of cross-sectional surveys. Specifically, we focus on estimating change in attitudes on abortion held by respondents to every NES cross-sectional survey from 1980 through 2000.¹⁸ In each of these surveys, respondents were asked the same question regarding their views on abortion and were provided with the same four response options.¹⁹ We classify those answering with one of the two more restrictive options as pro-life and those opting for one of the

¹⁸ One limitation of our EI analysis is our inability to correct for measurement error. Thus, we are likely to over-estimate rates of change in abortion attitudes, but this should not affect of follow-up regression results.

¹⁹ The NES asked about abortion prior to 1980, but used a different question format.

two less restrictive options as pro-choice.²⁰

Our cross-lagged analysis of the NES panel data captured the effect of previously held partisanship on *change* in issue attitudes. In this section, our goal is to capture that same effect—that is, the effect of previous party identification on change in abortion attitudes from one time period to the next—over a 20-year period. What we need, then, is an estimate of change in abortion attitudes over time in the absence of panel data, which is what King’s method of ecological inference (EI) provides. The appendix provides a more detailed description of our application of King’s method along with a validation of the method against panel data.

We pooled all respondents from the eleven studies and estimated a single set of conversion parameters. Table 3 presents the results. We estimate that over this 20 year period, about 77 percent of those respondents who reported holding a pro-life view on abortion in a particular year continued to hold a pro-life position two years later. About 82 percent of respondents holding a pro-choice view in a particular year are estimated to remain pro-choice two years later. As expected, a substantial majority of respondents hold consistent views on this highly emotional and politically charged issue over time. However, a significant minority of individuals appear to change their views on this issue from one federal-election year to the next. In our panel analysis, we demonstrated that the direction of conversion on abortion is shaped by party identification. Our next task is to consider whether that holds true for the entire period from 1980 to 2000.

Our EI estimates can be viewed as estimates of the probability that someone holding a particular view on abortion will or will not hold that same view two years later. By regressing that estimated probability of converting or not converting from one time period to the next on an individual’s self-reported partisanship at the initial time period, we can capture whether or not change (or stability) in one’s view on abortion is conditioned by party identification. In other words, this method allows us, in essence, to replicate that portion of our cross-lagged panel

²⁰ Table 1 shows the four response-options on abortion. Using this measure, 45 percent of respondents from 1980 to 2000 are classified as pro-life and 55 percent are classified as pro-choice. These levels vary from year to year, but only by a few percentage points.

analysis that models change in abortion attitude as a function of party identification, only over a much-longer 20-year period.

Specifically, we merged our EI estimates of stability and change for the entire 1980-2000 period with the individual-level data from the NES cross-sections in these years. We then regressed our estimates of stability and conversion on abortion on each respondent's party identification (ranging from one for strong Democrats to seven for strong Republicans).²¹ The results are presented in table 4.²²

The first model in table 4 reports the results for those respondents who were pro-life in year t . The dependent variable is the estimated probability of remaining pro-life in year $t+2$. The second model reports results for those who were pro-choice in year t . The dependent variable is the estimated probability of remaining pro-choice in year $t+2$.²³ In both models, individual party identification in year t is a statistically significant predictor of continuing to hold the same views on abortion. In the first model, the effect is positive, indicating that Republicans who were pro-life in year t were significantly more likely to remain pro-life (i.e. less likely to become pro-choice) two years later than were Democrats who were pro-life in year t . In the second model, the effect of partisanship is negative, showing that Republicans who were pro-choice in year t were significantly less likely to remain pro-choice (more likely to become pro-life) two years later than were Democrats who were pro-choice in year t . The substantive effects of party identification in these models are relatively small, but this is to be expected given that abortion attitudes are relatively stable over time.

²¹ We also control for the two other profile characteristics – income and religious tradition – in this regression. Because respondents who shares the same profile characteristics for a given year are assigned the same estimates of conversion, we treat the individual observations as clustered by profile and year, leading us to estimate robust standard errors based on this clustering. See the appendix for a definition and description of a profile.

²² There is some controversy regarding these sorts of second-stage regressions (see King 1997; and the exchange between Herron and Schotts 2003a; Adolph and King 2003; Herron and Schotts 2003b; and Adolph, King, Herron, and Schotts 2003). Such controversy suggests reserving judgment on these sorts of analyses. As a check, we estimated these models in a number of different ways, including weighted least squares models with weights based on the standard errors of the profile-level estimates of change, and a logit for grouped data model at the profile level. All produced very similar results.

²³ Models where the dependent variables predict converting on abortion rather than holding the same views on abortion produce results that are the mirror image of those presented in table 5.

In short, our application of King's EI method to cross-sectional NES surveys suggests that party-based issue conversion on the key cultural issue of abortion occurred not just in the short period from 1992 to 1996, but over the full two decades in which the parties' mass coalitions grew more culturally polarized. We return now to the panel data to examine more fully the question of what conditions issue and partisan conversion among citizens.

The Conditional Effects of Awareness of Party Differences and Issue Salience

It is, of course, highly unlikely that party-based issue conversion and issue-based party switching occur among the same individuals, particularly over the short two-year intervals we have considered. It is much more likely that some individuals change their party identifications because of their views on abortion, other individuals change their abortion attitudes because of their party affiliations, and others do neither. The question is: who does what?

We have argued that the answer lies in the degree to which individuals are aware of party differences on abortion and find the issue to be salient. Citizens who are not aware of partisan distinctions on abortion should see no conflict between their party ties and their abortion attitudes even if one does exist. Thus, there is no reason for them to change either of these orientations to fit with the other. In contrast, citizens who are aware of the polarization of party elites and platforms on abortion should recognize the conflict between their issue attitudes and their partisan loyalties, if one does exist, and should change one of them. Although abortion is a powerful, emotional, "easy" issue, attitudes on it should not place significant pressure on party ties for all of these citizens, but only for those who care deeply about the issue. Individuals who are aware of partisan differences but do not find abortion to be particularly salient should resolve any tension between their party ties and abortion attitudes by changing the latter based on the former. It is only the individuals who are aware of the distinctions between the parties and place considerable importance on the abortion issue who should be likely to change their party identifications based on their views on abortion.

To test these hypotheses, we return to the 1992-94-96 panel study and re-estimate our

structural model of party identification and abortion attitudes separately for each of these three groups. We measure awareness of party differences with the questions in the 1992 wave of the panel study that asked respondents to place the two major-party presidential candidates on the NES abortion scale. Respondents are classified as being aware of party differences on abortion if they place Republican George Bush as more pro-life than Democrat Bill Clinton on the scale.²⁴

To measure the salience of the abortion issue, we turn to two sets of open-ended questions in 1992. The first set provides a direct measure of salience by asking respondents to identify the most important problems facing the nation and allowing them to mention up to three things. The second set asks respondents to mention up to five things that they like and up to five things that they dislike about the Democratic and Republican parties and each party's candidate for president.²⁵ We classify individuals as finding abortion to be salient if they mention the issue in response to either of these sets of open-ended questions. Based on these measures, 34 percent of panel respondents are classified as not being aware of party differences on abortion, 40 percent are aware of party differences but do not find abortion to be salient, and 26 percent are aware of party differences and find abortion to be salient.

Table 5 presents the estimates of the structural portion of our model for individuals who are not aware of party differences on abortion, for individuals who are aware of party differences but do not find abortion to be salient, and for individuals who are aware of party differences and do find abortion to be salient. The results are quite supportive of our hypotheses.²⁶

There is no reciprocal relationship between party identification and abortion attitudes for

²⁴ The 1992 NES did not ask respondents to place the two parties, only their candidates, on abortion. However, in other work (XXXX), we show that when NES respondents are asked to place both the parties and their presidential candidates on an issue, the relationship between party and candidate placements is very strong.

²⁵ Unlike the most important problem question, these questions do not refer directly to the salience of an issue. However, in order for an individual to spontaneously mention a specific concern as something that they like or dislike about one of the parties or their presidential candidates, it must be somewhere near the forefront of the individual's mind and thus of some minimal salience to him or her (e.g. Zaller 1992). We do not use the NES' open-ended questions on "important party differences" for this analysis because they conflate both issue salience and awareness of party differences into a single measure.

²⁶ A difference in χ^2 test allows us to reject the Null that the cross-lagged effects between party identification and abortion attitude are the same across the three groups ($\chi^2=12.5$, $df=4$, $p<.05$).

individuals who are not aware of partisan differences on the abortion issue. Their ignorance of the parties' relative positions likely makes them immune from the cognitive dissonance that might lead individuals to change their party ties or abortion attitudes to conform with each other.

As expected, individuals who are aware of the differences on abortion between the parties but who do not find the issue to be particularly important appear to solve conflicts between their party affiliations and abortion attitudes by changing their views on the issue and not by changing their partisan identities. Party identification has a statistically-significant effect on change in abortion attitudes, with Republicans being more likely than Democrats to convert to more pro-life views. The specific coefficient estimate of .11 is also somewhat larger for this sub-set of respondents compared to estimate of .08 reported for the entire sample in table 2. As expected, abortion attitudes do not have a significant effect on change in partisanship for this group.

In contrast, individuals who are aware of partisan differences on abortion and do find the issue to be salient are more likely than those in the second group to resolve conflicts between their party ties and their issue attitudes by changing their party identifications. The impact of abortion attitudes on change in party identification is now statistically significant, and the substantive effect of issue preferences on changes in party ties (.13) is more than two and a half times as large as that of party identification on changes in abortion attitudes (.05). Moreover, the partisan effect on changes in abortion attitude for this group is only half what it is for the aware, but not salient group.

At the same time, party identification does have a statistically-significant effect on changes in abortion attitudes for this group. Thus, even on an issue—abortion—where we would not expect to find many individuals bringing their attitudes in line with their party ties, and even among those individuals—people who find abortion to be particularly salient—who should be the least likely to change their minds on abortion, we find evidence of party-based issue conversion. This further strengthens our case for the role of such conversion in producing aggregate-level increases in partisan issue polarization

Conclusion

Although the literature on aggregate partisan change identifies a number of processes that lead to polarization in the aggregate positions of the parties' mass coalitions on a new issue, it ignores a potentially important one: individuals who already identify with a party changing their positions on the issue as the positions of their party's leaders, candidates, and platforms become more ideologically extreme. In this paper, we have used the two available methods of gauging individual-level attitudinal change – analysis of panel data and King's method of ecological inference – to assess the extent to which party ties lead to conversion on a highly-emotional issue associated with partisan change. Our analysis of the 1992-94-96 NES panel provides evidence that some party conversion has occurred based on abortion attitudes, particularly among those who care about abortion and recognize that the Republicans have become more conservative than the Democrats on it. However, both our panel analysis and our ecological inference using cross-sectional surveys confirm the contribution of party-based issue conversion to the growing polarization of the parties' coalitions on abortion over the last two decades.

This evidence has implications for not only the literature on aggregate-level partisan change, but also the literature on individual party identification. Our finding that some citizens do change their party ties based on their abortion attitudes seems to be consistent with the revisionist notion of individuals updating their partisan ties based on other political evaluations. However, the fact that partisanship leads to changes in abortion attitudes for some citizens clearly runs counter to the idea of party identification as simply a summary of other evaluations. And, it lends support to the idea of party identification as a perceptual screen that shapes attitudes toward policy issues and other political objects.

Moreover, we do not view the evidence of abortion attitudes effecting change in party attachments as inconsistent with the Michigan model and related perspectives on party identification. This view acknowledges the possibility that political evaluations may place “pressure” on partisanship in special situations. And, we find evidence of issue-based party change only in rather special circumstances. First, we find it on a particularly powerful,

emotional, and polarizing issue: the abortion issue. Second, we find it only among individuals who are aware of party differences on abortion and who attach particular salience to it. Moreover, even in this group, there is evidence of individuals changing their abortion attitudes in response to their party affiliations. In short, we view our findings as further confirmation that party identification is a “moving force in politics,” that tends to be moved itself only in special circumstances.

One other implication is that party-based issue conversion may affect the relationship between the various issue dimensions on the political agenda. In the partisan change literature, the traditional view of this relationship is “conflict displacement.” When a powerful new set of issues emerges on the political scene, cuts across the lines of the issues that currently define party conflict, and the parties’ take polarized stands on it, party polarization on that issue dimension grows and the differences between the parties’ coalitions on the formerly dominant issues decline (Schattschneider 1960; Sundquist 1983; Carmines and Stimson 1989). However, party-driven attitudinal conversion may allow older and newer partisan conflicts to exist side-by-side. If issue attitudes do not change, then when people rethink their partisan ties based on a new set of cross-cutting issues, the degree of party polarization on the old issues is very likely to decline. However, if individual party identifiers bring their views on various issue agendas into line with their party’s stands, then the parties may become polarized on two or more issue dimensions at the same time.

In fact, other research has shown that the emergence of and the polarization of the parties on cultural issues like abortion has not been associated with a decline in party polarization on the older issue agendas of social welfare and race. Instead, mass party differences on these issues have remained steady or actually grown in recent years, a process that Layman and Carsey (2002) term “conflict extension.” Part of the explanation for this pattern may well be party-driven attitudinal conversion: individuals changing their minds on older and newer issue agendas based on their party identifications.

Table 1: Changes in abortion attitude by party identification, and changes in party identification by abortion attitude, 1992-1996

<u>Abortion Attitude in 1992 and 1996^b</u>	Mean Party Identification ^a		N
	<u>1992</u>	<u>1996</u>	
Always allow	3.53	3.28	206
Allow only when clear need	3.93	3.70	27
Allow only if rape, incest, danger to mother	4.40	4.56	95
Never allow	3.48	3.70	33

<u>Party Identification in 1992 and 1996^d</u>	Mean Abortion Attitude ^c		N
	<u>1992</u>	<u>1996</u>	
Democrat	2.67	2.88	146
Independent	3.03	3.32	127
Republican	3.18	3.87	123

Source: 1992-1994-1996 National Election Study Panel.

^a Party identification ranges from one (strong Democrat) to seven (strong Republican).

^b The mean party identifications are only for those panel respondents who were in the same category of the three-category abortion variable in 1992 and 1996.

^c We have recoded the four-point abortion scale in the NES to range from one (always allow) to seven (never allow).

^d Independent "leaners" are included in the independent category. The mean abortion attitudes are only for those panel respondents who were in the same category of the three-category party identification variable in 1992 and 1996.

Table 2: Estimates of Structural Coefficients of the Model of Cross-Lagged Effects Between Party Identification and Abortion Attitude

	Unstandardized Coefficients	Standardized Coefficients	Standard Errors
<i>Stabilities</i>			
1992 Party ID → 1994 Party ID	.92	.89	.02
1994 Party ID → 1996 Party ID	.92	.94	.02
1992 Abortion → 1994 Abortion	.89	.92	.03
1994 Abortion → 1996 Abortion	.89	.89	.03
<i>Cross-Lagged Effects</i>			
1992 Abortion Attitude → 1994 Party ID	.05	.05	.02
1994 Abortion Attitude → 1996 Party ID	.05	.05	.02
1992 Party ID → 1994 Abortion Attitude	.08	.08	.02
1994 Party ID → 1996 Abortion Attitude	.08	.08	.02
<u>Summary Statistics</u>			
N = 597			
$\chi^2 = 294.30$ (df=57)			
$\Delta_1^c = .98, \Delta_2^d = .98$			
$\rho_1^e = .94, \rho_2^f = .95$			

Source: 1992-1994-1996 National Election Study Panel.

Note: The model was estimated using full information maximum likelihood estimation with missing values, and with demographic characteristics in 1992 affecting both party identification and abortion attitude in 1994 and 1996. All estimates are significant at the $p < .05$ level.

^a Observed and latent party identification ranges from strong Democrat (1) to strong Republican (7).

^b Observed and latent abortion attitude ranges from always allow (1) to never allow (7).

^c Bentler and Bonett's (1980) normed fit index

^d Bollen's (1989a) incremental fit index

^e Bollen's (1986) relative fit index

^f Bentler and Bonett's (1980) non-normed fit index

Table 3: Ecological Inference Estimates of Attitudinal Change on Abortion, 1980-2000.

		Year $t+2$	
		Pro-Life	Pro-Choice
Year t	Pro-Life	.7684 (.0075)	.2316 (.0075)
	Pro-Choice	.1803 (.0061)	.8197 (.0061)

Source: 1980-2000 National Election Studies (pooled).

Note: Cell entries represent the predicted proportion of individuals who have a particular position on abortion in the earlier year who retain that same position in the later year and who change positions in the later year. Standard errors are in parentheses.

Table 4: The Impact of Party Identification on Change in Abortion Attitudes, 1980-2000

	Pro-Life Respondent Remaining Pro-Life	Pro-Choice Respondent Remaining Pro-Choice
Party Identification ^a	.008 (.003)*	-.009 (.002)*
Evangelical Protestant ^b	.164 (.036)*	-.066 (.021)*
Mainline Protestant ^b	.009 (.040)	.044 (.017)*
Black Protestant ^b	.087 (.041)*	-.051 (.025)*
Catholic ^b	.112 (.037)*	-.020 (.018)
Income	-.046 (.010)*	.032 (.007)*
Constant	.726 (.037)*	.793 (.022)*
(N)	(6,138)	(7,618)
R ²	.21	.18

Note: Results are from OLS regressions using profile-level EI estimates as the dependent variable. Robust standard errors are in parentheses.

^a Ranges from strong Democrat (1) to strong Republican (7).

^b The comparison category for religious tradition includes Jews, seculars (non-religious people), and members of non-Judeo-Christian religions.

* p<.05

Table 5: Estimates of Structural Coefficients of the Model of Cross-Lagged Effects Between Party Identification and Abortion Attitude by Awareness of Party Differences on Abortion and Salience of Abortion

	Unstandardized Coefficients	Standardized Coefficients	Standard Errors
<u>Not Aware of Party Differences on Abortion</u>			
<i>Stabilities</i>			
1992 Party ID → 1994 Party ID	.94*	.88	.04
1994 Party ID → 1996 Party ID	.94*	.98	.04
1992 Abortion → 1994 Abortion	.79*	.88	.06
1994 Abortion → 1996 Abortion	.79*	.80	.06
<i>Cross-Lagged Effects</i>			
1992 Abortion Attitude → 1994 Party ID	.05	.06	.03
1994 Abortion Attitude → 1996 Party ID	.05	.06	.03
1992 Party ID → 1994 Abortion Attitude	-.02	-.02	.04
1994 Party ID → 1996 Abortion Attitude	-.02	-.02	.04
<i>Summary Statistics</i>			
N = 196; $\chi^2 = 141.05$ (df=57)			
$\Delta_1 = .97, \Delta_2 = .98, \rho_1 = .91, \rho_2 = .95$			
<u>Aware of Party Differences/Abortion Not Salient</u>			
<i>Stabilities</i>			
1992 Party ID → 1994 Party ID	.93*	.91	.03
1994 Party ID → 1996 Party ID	.93*	.94	.03
1992 Abortion → 1994 Abortion	.85*	.84	.05
1994 Abortion → 1996 Abortion	.85*	.83	.05
<i>Cross-Lagged Effects</i>			
1992 Abortion Attitude → 1994 Party ID	.02	.02	.03
1994 Abortion Attitude → 1996 Party ID	.02	.02	.03
1992 Party ID → 1994 Abortion Attitude	.11*	.12	.03
1994 Party ID → 1996 Abortion Attitude	.11*	.12	.03
<i>Summary Statistics</i>			
N = 228; $\chi^2 = 144.13$ (df=57)			
$\Delta_1 = .98, \Delta_2 = .98, \rho_1 = .92, \rho_2 = .95$			
<u>Aware of Party Differences/Abortion Salient</u>			
<i>Stabilities</i>			
1992 Party ID → 1994 Party ID	.81*	.85	.05
1994 Party ID → 1996 Party ID	.81*	.79	.05
1992 Abortion → 1994 Abortion	.97*	.99	.03
1994 Abortion → 1996 Abortion	.97*	.99	.03
<i>Cross-Lagged Effects</i>			
1992 Abortion Attitude → 1994 Party ID	.13*	.15	.03
1994 Abortion Attitude → 1996 Party ID	.13*	.14	.03
1992 Party ID → 1994 Abortion Attitude	.05*	.05	.02
1994 Party ID → 1996 Abortion Attitude	.05*	.05	.02
<i>Summary Statistics</i>			
N = 152; $\chi^2 = 183.92$ (df=57)			
$\Delta_1 = .96, \Delta_2 = .97, \rho_1 = .88, \rho_2 = .91$			

Source: 1992-1994-1996 National Election Study Panel.

Note: The models were estimated using full information maximum likelihood estimation with missing values. See table 2 for a description of the elements in the table.

* $p < .05$

Appendix

King's (1997) method is designed to estimate the β parameters represented in Table A1. Following Penubarti and Schuessler's (1998) notation, ecological data generally provide information on A_i^1 , defined here as the proportion of respondents who are pro-life at time point 1 (e.g. 1994), and A_i^2 , the proportion of respondents who are pro-life at time point 2 (e.g. 1996), (and thus $1-A_i^1$ and $1-A_i^2$, the proportion of pro-choice respondents at time 1 and time 2). Ecological data do not supply direct measures of the individual-level parameters β_i^{11} , the proportion of pro-life respondents at time 1 who remain pro-life at time 2, or β_i^{01} , the proportion of pro-choice respondents at time 1 who are pro-life at time 2.

In the absence of true panel data, King's method begins by breaking aggregate data down to sub-aggregate units. For King, that means reducing district-level voting statistics to the precinct level. For us (and Penubarti and Schuessler), it requires that we disaggregate each cross-sectional survey into a set of sub-aggregates, denoted by the subscript "i". We do so by constructing a series of political and demographic profiles. In this analysis, our profiles are constructed based on three variables: party identification (Democrat, Independent, Republican), income (lower third, middle third, upper third) and religious tradition (evangelical Protestant, mainline Protestant, black Protestant, Catholic, and Jewish/secular (non-religious)/other).²⁷ This produces 45 profiles, or sub-aggregate units of analysis ($3 \times 3 \times 5 = 45$). To present an example, one profile would consist of Republican, middle income, mainline Protestants.

For each of these profiles, the values for A_i^1 and A_i^2 can be observed,²⁸ and they measure the upper and lower bounds of β_i^{11} and β_i^{01} for each profile. These bounds must by definition be

²⁷ Our own experience confirms Penubarti and Schuessler's (1998) assertion that findings using this method are robust to the selection of variables used to construct profiles. One important consideration in selecting variables upon which to construct profiles is that they be largely unchanging between time periods.

²⁸ Penubarti and Schuessler (1998) correctly note that these can only be observed up to the level of sampling error. This suggests constructing profiles in a manner that does not produce many profiles that have a small number of respondents.

between 0 and 1, but in most empirical examples, they will fall within much narrower ranges. King's method incorporates these values into a statistical model to estimate the probable location of β_i^{11} and β_i^{01} within their known deterministic bounds. For every profile, the relationships defined in Table A1 imply the following equation:

$$\beta_i^{01} = (A_i^2/(1-A_i^1)) - (A_i^1/(1-A_i^1))\beta_i^{11}$$

Because the values for A_i^1 and A_i^2 are known for every profile, a value of β_i^{01} could be computed for every hypothetical value of β_i^{11} . As a result, all possible values of β_i^{11} and β_i^{01} for each profile can be represented as a line. King refers to a plot of all such lines as a tomography plot. Being able to reduce the possible values that β_i^{11} and β_i^{01} could take on to a set of lines narrows the possible estimates of the values of β_i^{11} and β_i^{01} for each profile. King then generates statistical estimates of β_i^{11} and β_i^{01} assuming that the parameters follow a truncated bivariate normal distribution. Once the estimates of β_i^{11} and β_i^{01} for each profile are obtained, they can be used to estimate the aggregate parameters β^{11} and β^{01} for the entire sample.²⁹

To demonstrate the utility of this method, we compare the estimates derived from EI to those which can be derived from the 1992-94-96 NES panel.³⁰ To begin, we treat each wave of the panel as if it were simply a cross-sectional survey. We then apply King's method to estimate the proportion of respondents who did and did not change their views on abortion from 1992 to 1994, 1994 to 1996, and 1992 to 1996 *without taking advantage of the panel nature of the data*. Finally, we compare our estimates to the actual amount of change on abortion observed in the

²⁹ Interested readers should consult King (1997) for a complete treatment of the method of ecological inference employed here along with Cho (1998) for a critique of King's method.

³⁰ As a check, we also successfully validated the EI estimates using the 1972-74-76 NES panel study. In some of the analyses, we uncovered evidence of aggregation bias. Thus, all table entries presented here are corrected for aggregation bias when it was observed. Other checks recommended by King (1997) did not reveal any concerns.

various panels.

The aggregate results are summarized in Table A2, which compares our EI estimates of the proportion of pro-choice and pro-life respondents in one election-year remaining on the same side of the abortion issue in the next election-year to the actual proportions, taken from the panel data.³¹ For example, we predict that of those who held a pro-life view on abortion in 1992, 82 percent continued to hold that view in 1996. Of those who were pro-choice on abortion in 1992, just over 19 percent switched to the pro-life view by 1996. As the table shows, the EI estimates of these two proportions are quite accurate (about 84 percent and 19 percent, respectively). Moreover, the relatively small standard errors suggest a fairly high degree of certainty regarding these estimates. In nearly every case, the estimated rates of change are within plus or minus two standard errors of the corresponding true value. Thus, it appears that our application of King's EI method to the analysis of change in abortion attitudes confirms Penubarti and Schuessler's analysis of change in presidential approval—the method appears to accurately replicate the known individual levels of change (from panel data) making use of only aggregate cross-sectional information.

³¹ We do not account for measurement error here as King's EI method is not well suited to do so. Thus, we may overestimate the rate of change on abortion somewhat. However, our estimates are very similar to the rates of change observed in panel data that is not corrected for measurement error. And, what is most important in the subsequent analysis, however, is not the absolute level of change but the relative variance in estimated rates of change.

Table A1: Representation of the EI problem for profile “i” for changes in attitudes on abortion from 1972 to 1976. The values A_i^1 and A_i^2 are observed proportions of respondents at each time period who are pro-life on abortion. Parameters β_i^{11} and β_i^{01} are to be estimated.

		1996		
		Pro-Life	Pro-Choice	
1992	Pro-Life	β_i^{11}	$1-\beta_i^{11}$	A_i^1
	Pro-Choice	β_i^{01}	$1-\beta_i^{01}$	$1-A_i^1$
		A_i^2	$1-A_i^2$	

Table A2: Comparing the Ecological Inference Estimates of Attitudinal Change and Stability on Abortion to Actual Values in the 1992-1994-1996 NES Panel Study.

		1994	
		Pro-Life	Pro-Choice
1992	Pro-Life	.7927 (.0232) .8342	.2073 (.0232) .1658
	Pro-Choice	.1699 (.0140) .1599	.8301 (.0140) .8401
		1996	
		Pro-Life	Pro-Choice
1994	Pro-Life	.8130 (.0199) .8131	.1870 (.0199) .1869
	Pro-Choice	.1642 (.0134) .1271	.8358 (.0134) .8729
		1996	
		Pro-Life	Pro-Choice
1992	Pro-Life	.8164 (.0204) .8428	.1836 (.0204) .1572
	Pro-Choice	.1912 (.0115) .1942	.8088 (.0115) .8058

Note: The first number in each cell represents the EI predicted proportion of individuals who have a particular position on abortion in the earlier year who retain that same position in the later year and who change positions in the later year. Standard errors are in parentheses. The actual proportions, taken from the panel studies, are in bold.

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