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The Microfoundations of Mass Polarization

Matthew S. Levendusky
Department of Political Science, University of Pennsylvania, 208 South 37th Street, Philadelphia, PA 19104
e-mail: mleven@sas.upenn.edu (corresponding author)

Although there has been considerable attention to the question of *how much* polarization there is in the mass electorate, there has been much less attention paid to the *mechanism* that causes polarization. I provide evidence demonstrating the occurrence of individual-level conversion—individual Democrats and Republicans becoming more liberal and conservative. Although over the short term most of the observed changes are quite small and cannot be distinguished from measurement error, over time and many respondents, these movements aggregate to generate polarization. Small individual-level preference shifts provide an important foundation for aggregate polarization.

Few issues have seized the attention of political scientists—not to mention journalists—to the same extent as the debate over mass polarization. In brief, the controversy centers around whether ordinary Americans are now more ideologically divided than they were a generation ago (for the competing perspectives, contrast Fiorina, Abrams, and Pope 2005; Abramowitz and Saunders 2008). Regardless of where one stands on the *level* of polarization, an important question remains: *what mechanism* causes polarization? Most of the literature argues that conversion—individual voters becoming more extreme over time—is a key mechanism driving polarization. Despite the importance of conversion, only a handful of previous studies provide any evidence of this phenomenon. This paper uses new methods to provide direct evidence in support of microlevel conversion, demonstrating that individuals do, in fact, become more ideologically extreme over time.

I move beyond existing efforts and ask how this individual conversion contributes to aggregate polarization. Although existing work finds evidence of conversion, it does not ask how this contributes to longer term patterns of electoral polarization. I find that over a short time frame (say three to four years), most voters make only minor changes to their issue positions, and as a result, much of the observed movement cannot be distinguished from random noise. But over a longer period of time, I show these sorts of alterations often underlie any increased polarization we have observed in the electorate. Small individual-level changes—voters adjusting one or two issues by a few scale positions—can transform the aggregate distribution of public opinion. Many small shifts can have a large global impact.

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1 A Polarized America?

The literature on mass polarization is now too large for a succinct review (for recent reviews of this literature, see Fiorina and Abrams 2008; Hetherington 2009). Here, I direct my attention to one particular aspect of this debate, commonly referred to as aggregate polarization (or simply, polarization): have the views of ordinary Americans become more divided over time?[1]

Some scholars contend Americans have, in fact, become less centrist over time. Abramowitz (2006) demonstrates that the standard deviations (SDs) of voters' issue positions has increased over time, implying that voters are moving away from the center of the ideological distribution and toward the poles (see especially tables 2 and 3 and figures 2–10). Campbell (2006) points to the shrinking number of ideological "moderates" and growing numbers of voters who will identify themselves as "liberals" and "conservatives" as evidence that Americans have become less centrist (see also Jacobson 2006a; Abramowitz and Saunders 2008). If these scholars are correct, ordinary Americans are now quite divided, much like (though not to the same extent as) their elite counterparts.

Other recent scholarship argues there has been only very limited electoral polarization. Looking at an exhaustive amount of survey data, DiMaggio, Evans, and Bryson (1996) find evidence increasing similarity—not polarization—in Americans' attitudes over time (see also Evans 2003). Other scholars detect a similar lack of mass polarization, most notably Fiorina, Abrams, and Pope (2005). These scholars contend that if there has been any increase in polarization, it has been quite small (see also Wolfe 1999; Baker 2005; McCarty, Poole, and Rosenthal 2006).

Regardless of which of these views is correct, nearly all the published work argues implicitly or explicitly that conversion—individual voters becoming more extreme over time—is an important source of any observed polarization (Abramowitz and Saunders 1998; Layman and Carsey 2002a; Levendusky 2008).[2] These works argue that ordinary Democrats and Republicans become more liberal and conservative (respectively) in response to changing elite positions. In short, as elite parties become more divided, they send voters more homogeneously liberal or conservative cues, thereby making it easier for ordinary voters to adopt their party's position on the issues. These changes move voters away from the center and toward the ideological extremes, thereby increasing polarization. This less centrist and more divided distribution of mass opinion would have profound implications for elite behavior (Jacobson 2006b).

Several previous studies provide evidence supporting the conversion hypothesis (Layman and Carsey 2002b; Putz 2002; Carsey and Layman 2006). These results provide the building blocks for my analysis, but I argue that more testing of the conversion hypothesis is needed. To understand why, a brief discussion of method is needed.

All the previous work on conversion uses confirmatory factor analysis to explore the relationship between partisanship and issue attitudes and, in the process, generates evidence in support of conversion. Factor analysis (confirmatory or exploratory) is usually implemented as a model for correlation matrices (Bollen 1989). This presents two problems for the study of conversion.

[1] There is also a parallel literature on partisan polarization (whether the mass parties have moved farther apart); I omit it here in the interest of space. I only note in passing the same techniques could be applied to that debate as well.

[2] This is not the only source of polarization, however; there is also generational replacement (Stoker and Jennings 2008) and more general changes in the composition of the electorate (Prior 2007). Although I do not deal directly with these mechanisms here, this is an important topic for future work.

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First, there is the problem of factor score indeterminacy (Grice 2001). In factor analytic models of conversion, respondents latent issue preferences are known as factor scores. Factor scores are not directly estimated in the model but instead are generated after estimation by running the raw data through the estimated factor model. Because the factor analytic model is a model for the correlational structure of the observables and not a model of the data, there is no unique mapping from a given factor structure and raw data into the factor scores, hence the name "factor score indeterminacy" (Harman 1967; Bollen 1989). Given the importance of these issue preferences to models of conversion and related topics such as polarization, working in a model where they are a byproduct of estimation—rather than our primary focus—is not an optimal way to proceed. A model where we directly model the quantity of interest is preferable (for more on this point, see Aldrich and McKelvey 1977).

Even putting aside the issue of factor score indeterminacy, there is a further drawback to using a factor analytic approach to study this question. Whereas, in theory, it is possible to obtain standard errors for factor scores (Jöreskog 2000; Lewin-Koh and Amemiya 2003), in practice, such uncertainty estimates are typically not reported in the applied political science literature. Given this, in a factor analytic setup, it become quite difficult (if not impossible) to know if person *i* is more liberal than person *j* or (more importantly) if person *i* in 1994 is more liberal than they were in 1992, net of the uncertainty contained in the latent trait. A method that allows for estimation of uncertainty for factor scores (the latent quantity of interest) is needed.

Given these limitations, I propose a new method below. I use item response theory to directly model respondents' issue preferences and provide estimates of the uncertainty with which those preferences are estimated. Although item response theory is not new to political science—it has been used extensively as a method for ideal point estimation (Martin and Quinn 2002; Clinton, Jackman, and Rivers 2004)—its application to the polarization problem and mass behavior more generally is novel (for related approaches, see Treier and Jackman 2002; Treier and Hillygus 2006).

Additionally, my model can easily be adapted to consider a variety of extensions. For example, in the model I develop below, I compare ordinary citizens and their perceptions of elites. In order to make these sorts of comparisons, I need to constrain the values of certain model parameters. Imposing these sorts of restrictions in my model is quite straightforward. Because these constraints cannot be written as a function of the correlation of the observed indicators, imposing this sort of setup would be more difficult in a factor analytic setup. A similar case could be made for a variety of additional modifications, such as accounting for projection effects (Krosnick 2002), or even how voters change over much longer periods of time. In short, this model offers up a variety of exciting possibilities for addressing a host of research questions (for more on the advantages of this approach over factor analysis, see Treier and Jackman 2002; Levendusky, Pope, and Jackman 2008).

To conduct this analysis, I rely on data from the 1992 to 1996 National Election Study (NES) panel data. Few periods of recent American electoral history are as interesting for examining polarization as the mid-1990s: from the election of Bill Clinton (the "New" Democrat), the Republican takeover of Congress, and Clinton's return to the center, the mid-1990s are an era of important political changes. Indeed, Abramowitz and Saunders (1998) identify this as a key period in their study of polarization, and this panel has previously been used to examine other aspects of mass polarization (Layman and Carsey 2002a, 2002b; Putz 2002; Carsey and Layman 2006). As such, this data should provide an excellent forum for testing the mechanism behind polarization.

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2 The Model

In order to study changes in respondents' attitudes, I need to build a model of those attitudes. The basic logic of my approach is as follows. Each individual has a true unknown location on an underlying dimension. Although I cannot observe that location directly (the scale is latent), I observe multiple indicators of each individuals' location on that underlying scale. Respondents place themselves on a variety of policy scales, including the liberal-conservative self-identification scale, the government services and spending scale, and so forth (the specific items used are given in the online appendix). These items—to varying degrees—reflect respondents' locations along this ideological continuum. By combining the information in these items, I can estimate where individual voters lie along this latent continuum.

Practically, given that the NES items are ordinal, I model individuals' responses to policy preferences items as a function of these underlying dimensions using an ordinal item response model.[3] Here, let $i = 1, 2, \ldots, N$ index individuals, let $j = 1, 2, \ldots, J$ index items, and let $k = 1, 2, \ldots, K_j$ index the ordinal response categories for item j. Then I can write the model as:

$$\begin{aligned} \Pr[y_{ij}=1] &= F(\kappa_{j,1}-\beta_j x_i) \\ \Pr[y_{ij}=2] &= F(\kappa_{j,2}-\beta_j x_i)-F(\kappa_{j,1}-\beta_j x_i) \\ &\vdots \\ \Pr[y_{ij}=K_j] &= 1-F\left(\kappa_{j,K_j-1}-\beta_j x_i\right) \end{aligned} \quad . \tag{1}$$

In equation (1), y_{ij} is respondent i's response to item j, x_i is respondent i's location on the latent dimension (their latent issue preference), β_j is a discrimination parameter telling us how much responses to item j distinguish between more and less liberal respondents on the latent dimension and $F(\cdot)$ is the cumulative distribution function for the logistic distribution. The κ_j parameters are a set of thresholds for each item just as in a standard ordinal model. Because the thresholds must be ordered (i.e., $\kappa_{j,\,k} > \kappa_{j,\,k-1}$), I parameterize the thresholds as $\kappa_{j,k} = \sum_{l=1}^{k} \delta_{j,l}$, and for $l \geqslant 2$, $\delta_{j,l}$ must be greater than 0, which ensures that this order constraint holds.[4]

In addition to simply using the data on respondents' issue positions, the model also incorporates the data on respondents' perceptions of elite actors (this data will be used to resolve some technical issues, as I explain below). Let w_{ijp} be respondent i's placement of elite p on item j. Let $\kappa_{j,k}$, $k = 1, 2, \ldots, K_j$ and β_j, $j = 1, 2, \ldots, J$ be defined as in the model for voters' issue positions and let θ_p be the location of elite p ($p = 1, 2, \ldots, P$) on the latent ideological scale. The model can be written as:

$$\begin{aligned} \Pr\left[w_{ijp}=1\right] &= F\left(\kappa_{j,1}-\beta_j\theta_p\right) \\ \Pr\left[w_{ijp}=2\right] &= F\left(\kappa_{j,2}-\beta_j\theta_p\right)-F\left(\kappa_{j,1}-\beta_j\theta_p\right) \\ &\vdots \\ \Pr\left[w_{ijp}=K_j\right] &= 1-F\left(\kappa_{j,K_j-1}-\beta_j\theta_p\right) \end{aligned} \tag{2}$$

[3]The model of voter issue positions is very similar to the ones developed in Treier and Hillygus (2006) and Treier and Jackman (2002). Jacoby (1990) also presents a similar model of voter issue positions using Guttman scaling.
[4]For more on the standard item response model setup, see Johnson and Albert (1999). For a classic treatment of measurement error in political science, see Green and Palmquist (1990).

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Again, $F(\cdot)$ is the cumulative distribution function for the logistic distribution, and κ and β are defined above in equation (1). I constrain the κ parameters to be the same for the voter and elite placement models. That is, I enforce the constraint that voters use the same thresholds to evaluate themselves as they do when evaluating elites on the same policy item.[5] Absent this restriction, there is no way to ensure that we can actually compare voters and their perceptions of elites. To see why, consider the following thought experiment. Suppose a respondent places both himself and a candidate at ''moderate'' on one of the policy scales. If the thresholds for the self-placements and the elite placements differ, then even though our respondent put himself and the candidate at the same location, they can be mapped into different parts of the policy space. If one set of thresholds are arbitrarily shifted left or right vis-a-vis the other, a ''moderate'' placement could be a much more liberal/conservative response for respondents versus elites, despite the fact the entities are all being evaluated on the same scale. Constraining the thresholds ensures that I can directly compare voters and candidates.[6]

One certainly could estimate this model and conduct inference for this model in a frequentist framework given that relevant methods do exist. As a practical matter, it is likely somewhat easier to adopt a Bayesian approach for estimation and inference, which is the choice I make; the relevant details are given in the online appendix.

2.1 *Identification*

Absent additional restrictions, the model as presented above is not identified—I can obtain the same likelihood over parameter transformations via an offsetting transformation of the latent trait. This is due to the fact that our latent trait has no natural metric—what does it mean to be 1 unit more liberal than someone else?

Two restrictions are needed to identify a unidimensional model (Rivers 2003). Specifically, the restrictions are needed to define the location (a 0 point) and scale of the latent trait. Here, I fix the Democratic Party at -1 and the Republican Party at $+1$ in each year. This defines location (i.e., it affixes a 0 point, which here is half-way between the two national parties), it defines a scale for the latent trait (moving 1 unit on the scale is equivalent to moving one-half the distance between the perceived location of the two parties), and it establishes the polarity of the scale (positive locations on the latent scale are more conservative).

This restriction also partially alleviates interpersonal variations in scale usage (Brady 1985). Some respondents may idiosyncratically shift the scale left or right to accommodate their political worldview. If different respondents use these scales differently, this presents a threat to my conclusions—do person A and person B mean the same thing when they call themselves ''liberal?'' However, the elite placements provide me with a partial solution to this problem. By fixing the location of the parties on the latent scale, I have a way of mapping respondents' observed answers (using the ordinal policy scales in the NES) onto the latent policy scale. Modeled this way, the national parties thus act as anchors, correcting for this type of differential scale usage (Aldrich and McKelvey 1977; Poole 1998; King et al. 2004).[7]

[5] For simplicity, the item discrimination parameters (β) are also constrained to be the same.

[6] Note that these restrictions parallel the restrictions used in interinstitutionally comparable ideal point estimation; see Bailey (2007), for more details.

[7] If there are systematic differences across groups (due to factors like projection) so that Democrats and Republicans respond very differently to the elite positions, then they may not function effectively as anchors. This is a limitation that should be pursued in future work.

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Fixing the perceived location of the national parties also makes studying voter change possible. To examine polarization, I need to be able to compare preferences estimates across years. Here, I ensure that my estimates are directly comparable over time by fixing the perceived location of the parties in all three years. This allows me to assess polarization (and other types of change) relative to the assumption that the aggregate perceptions of the parties are fixed.[8] Absent some sort of restriction of this nature, it would not be possible to study voter change over time.[9]

At some level, obviously the parties' positions change over time; their positions evolve as they search for a competitive advantage. But this is not so much the issue here—the model does *not* assume that parties' positions are fixed. Rather, it assumes that aggregate *perceptions* of the parties are fixed. The aggregate perceptions of the parties change slowly, and over a four-year period, this assumption is not overly restrictive. The NES asks about respondents' perceptions of the parties on two issues in the 1992 and 1996 waves of the panel data—their position on the liberal-conservative scale and their position on the government services and spending scale. If perceptions of the parties are largely constant over this four-year period, then I should not be able to distinguish the parties' perceived locations in 1992 from their perceived locations in 1996. This is exactly the pattern I observe in the data, with the exception of the Republican Party on the government services and spending scale (where the perceived location shifts from 3.25 to 3.04, $p = 0.02$). It appears that perceptions of the parties really are relatively constant over a four-year window, and this assumption does not seem to be overly restrictive.[10]

2.2 *Data*

Here, the specific items I use come from the 1992 to 1996 NES panel; they are listed in appendix A online. The items I used to construct my measures were selected to address concerns about the dimensionality of attitudes in the mass public. It is well known that issue preferences are still best characterized as multidimensional (Layman and Carsey 2002a), so I consequently selected items tapping preferences along one primary dimension.[11] In this paper, I measure preferences on the primary left-right dimension in American politics, traditionally concerned with the government's role in economic redistribution (Shafer and Claggett 1995). Therefore, the focus is on issues like the balance of taxes and spending, programs for disadvantaged groups, and so forth.

Why do I focus on economic issues and not the social issues (like abortion, gay marriage, and so forth) that have generated so much attention in recent years? I do so

[8] As in all cases of studying change over time on latent scales, there is a potential complication; if the entire political space underwent a global shift so that what was moderate in 1992 became liberal in 1996, my results will be incorrect. Given that I am examining a four-year period, however, these sorts of shifts seem relatively unlikely. To use an analogy, this is like saying 88 degrees Fahrenheit is the same temperature today as it was yesterday because the mercury in the thermometer performs the same way at both times. Here, I am making an equivalent assumption about the meaning of the labels used in the survey items. Again, this would be a much larger problem over 50 years, but over four years, assuming relatively constant meaning is reasonable.

[9] An interesting possibility for studying voter change over longer periods would be to borrow the idea of overlapping generations (Jackman 2004): fix Jimmy Carter in 1976 and 1980, Ronald Reagan in 1980 and 1984, George Bush in 1984 and 1988, and so on. If this assumption of fixed perceptions holds, then the scale should be comparable over longer periods of time. I leave this issue for future work.

[10] As an additional robustness check, I reestimated another version of the model where I allow the perceived locations of the parties to shift over time; see the online appendix for additional details.

[11] Although the model here is unidimensional for simplicity and ease of exposition, a multidimensional model could be constructed, though it would require additional assumptions.

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for two reasons. First, a recent strand of research suggests that left-right economic issues continue to divide the parties at least as much as social issues, if not more so (Ansolabehere, Snyder, and Rodden 2006; Bartels 2006; Gelman et al. 2007; Smith 2007). It is simply erroneous to conclude that social attitudes are the only—or even the most important—division between the parties. Second, there is a serious data limitation to modeling attitudes on the social dimension. Typically, abortion is the only contentious social issue where respondents are asked to asses their perceptions of elites, so modeling these preferences is vastly complicated by the lack of data. Given these limitations, I analyze economic attitudes in this paper and leave social attitudes for future research.

3 Validating My Measure

Before turning to the primary substantive results, I want to first establish the validity of my measure of voter issue positions. I do so by comparing my results to extant measures of voter preferences and verifying that these variables are correlated with my measure in sensible ways.

To begin, consider the (polyserial) correlation between the latent issue preferences measure, the respondent's party identification, liberal-conservative self-identification, and presidential vote choice measured in 1992 and 1996.[12] Given the well-documented relationship between these variables and issue preferences (Miller and Shanks 1996), I expect that all three variables will be strongly correlated with my measure.

Table 1 supports these expectations. Those with higher scores on the latent issue preference measure are more likely to identify as Republicans and conservatives and are also more likely to support the Republican nominee for president in each wave of the panel data. Indeed, the weakest correlation with our latent measure is party ID at 0.52 (in 1992), which by the standards of survey research is still quite sizable. As a whole, the sensible patterns in Table 1 should give the reader substantial confidence in my measure. Readers who wish to see a more extended discussion of validity should consult the online appendix.

The reader may also be interested to know how the results from this procedure compared to a much simpler model. Here, as the baseline, consider using each respondent's average position across the same set of items as the measure of his issue position. Doing so makes a construct that is very similar to the one produced by my model, with three very strong assumptions in place: (1) all items in the scale have equal weighting (i.e., there is no variation in how well the items measure the respondent's underlying issue preferences); (2) all respondents use the scales in exactly the same way (so there are no differences in scale usage); and (3) there is no measurement error (so every respondent's issue positions are known with certainty). Doing so yields a measure correlated with the latent trait in excess of 0.94 in all years (see the online appendix for additional details). Note that this almost has to be the case; the data are the same, all that is changing is the method used to scale them.

But it would be a mistake to conclude from this high correlation that the method here is superfluous. As I show empirically below, assuming that respondents' issue positions are known without error is particularly problematic in this context. If one assumes that respondents' issue positions are known with certainty, then *any* movement must be interpreted as a change in preferences. In reality, given the imprecision of survey instruments, some of this apparent movement should be interpreted as uncertainty about a respondent's

[12]Here, vote choice is scored 0 for a vote for the Democratic candidate (Clinton), 1 for a vote for the Republican candidate (Bush/Dole), and missing otherwise.

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Table 1 The correlation between the latent measure of issue preferences and party ID, self-reported ideology, and Presidential vote choice

	Latent issue preferences	*Vote choice*	*Party ID*	*Liberal-conservative ID*
1992 Results				
Latent issue preferences	1			
Vote choice	0.67	1		
Party ID	0.52	0.85	1	
Liberal-conservative ID	0.55	0.71	0.51	1
1994 Results				
Latent issue preferences	1			
Vote choice	—	—		
Party ID	0.56	—	1	
Liberal-conservative ID	0.57	—	0.59	1
1996 Results				
Latent issue preferences	1			
Vote choice	0.74	1		
Party ID	0.60	0.82	1	
Liberal-conservative ID	0.67	0.69	0.65	1

Note. All three items correlate highly with the latent measure.

underlying issue preferences. By estimating the uncertainty associated with respondents' latent issue preferences, the model I use allows me to distinguish random noise and genuine attitude change. Consequently, I can make more confident assessments about polarization than otherwise possible in the absence of this sort of model.

4 Do Individuals Become More Extreme Over Time?

To begin the investigation of polarization, I want to exploit the defining characteristic of panel data—the ability to study how individual respondents move over time. Doing so allows me to test the mechanism of microlevel conversion. If this mechanism is a potential explanation for polarization, I expect to find evidence of partisans moving toward their party's ideological pole over time. Figure 1 examines respondent polarization through three comparisons: 1992 versus 1994 positions, 1994 versus 1996 positions, and finally 1992 versus 1996 positions. If the conversion hypothesis is correct, I expect to see most Democrats (Republicans) shifting in a liberal (conservative) direction in each comparison.

The data in Fig. 1 suggest that there is some conversion occurring in each time period, though the amount varies from year to year in ways related to the changing contours of elite politics.[13] For example, between 1992 and 1994, it seems there is more conversion among Republicans than among Democrats—more Republican voters move in a conservative direction than Democratic voters move in a liberal direction (41% of Democrats become more liberal, compared to 57% of Republicans who become more conservative). This is consistent with the elite politics of the period—the Republicans pulled to the right in 1994, and as a result, the mass public followed suit. However, between 1994 and

[13]The visual evidence of conversion would be Democrats clustered below the 45-degree line (becoming more liberal) and Republicans clustered above it (becoming more conservative).

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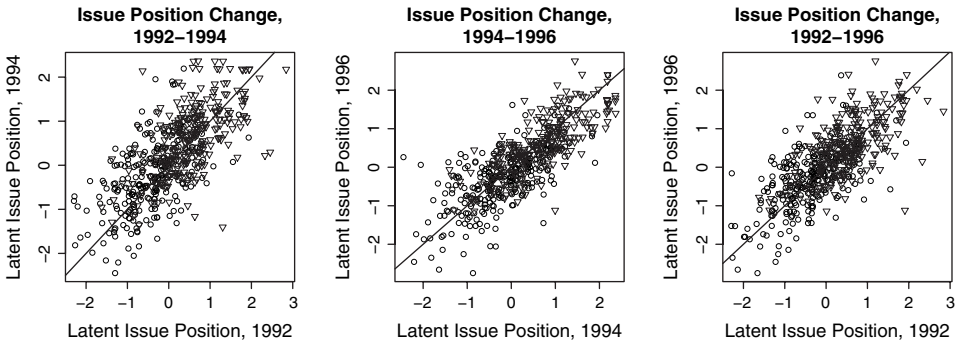


Fig. 1 Scatterplot of 1992 versus 1994, 1994 versus 1996, and 1992 versus 1996 latent issue positions. If there were evidence of polarization, Republicans (open circles) would be above the line and Democrats (open triangles) would be below the line in every year. The pattern, however, seems to differ by year; see the text for more details.

1996, we see the opposite pattern, where a majority of Democrats move in a liberal direction and a minority of Republicans move in a conservative one, most likely in reaction to events like the budget shutdown and perceived over-reaching by the Republican Party. In short, as one would expect from extant theories of conversion, the process is driven by elite-level politics (Abramowitz and Saunders 1998; Levendusky 2008).

In addition to whether or not respondents are moving, there is the question of *how much* they are changing over time. Between 1992 and 1996, respondents are moving (on average) approximately 0.4 units on the latent scale, which corresponds to changing one or two issue positions by approximately 1 ordinal response category each (e.g., a respondent moving from calling himself a ''moderate'' to claiming he is ''somewhat conservative'' on the liberal-conservative self-ID scale).[14] Although the time frame is relatively short (four years), these are still modest movements, which suggest there *is* some stability to respondent preferences over time.[15]

But there is a complication ignored by Fig. 1. Because I only observe indicators of preferences (which contain error), some observed change over time is *not* genuine change, but rather random noise. Table 2 addresses this limitation by examining the extent to which this year-to-year change can actually be distinguished from the uncertainty in my latent issue preference measure.[16]

The evidence in Table 2 suggests that much of the change seen in Fig. 1 cannot be distinguished from measurement error, at least in the short term. In contrast, if we were just to consider change based on the raw data (or a scaling method that did not provide estimates of uncertainty for the latent trait), we would have to conclude that *any* observed change was due to preference change. Only approximately 10% of the changes observed in Fig. 1 appear to be the result of genuine preference change; in the remaining cases,

[14]Although it is difficult to compare these results explicitly to past work due to differences in method and scale, the substantive results here appear to largely agree with the existing results in the literature on the extent of conversion.

[15]I would obtain similar results if I used the 1992–1994 or 1994–1996 change, though (as one would expect) the amount of change would be somewhat smaller.

[16]Here, I can detect change when the 95% highest posterior density (HPD) interval on the difference between the two latent issue preference measures does not overlap 0. HPD intervals are the Bayesian analog to frequentist confidence intervals.

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Table 2 The entries in the table represent the percentages of the public where movement between 1992 and 1994, 1994 and 1996, and finally 1992 and 1996 can be distinguished from measurement error

	1992–1994	*1994–1996*	*1992–1996*
Overall	8%	3%	9%
Democrats	8%	4%	10%
Democrats, more liberal	6%	2%	7%
Democrats, more conservative	2%	3%	4%
Republicans	7%	2%	7%
Republicans, more liberal	4%	1%	4%
Republicans, more conservative	3%	1%	3%

Note. The evidence here suggests that over this four-year period, the individual-level evidence in support of polarization is quite limited.

measurement error swamps the observed change in issue positions. Of those cases where I can detect change, some move in the ''wrong'' direction: Republicans who are becoming more liberal and Democrats who are becoming more conservative, suggesting that the evidence in support of polarization is even more limited than it would initially appear. Over these two- and four-year periods, then, genuine voter change is difficult to detect in light of the uncertainty with which I measure respondent's issue preferences.[17] Although in the aggregate there can appear to be considerable change (see Fig. 1), much of that change cannot be differentiated from uncertainty about the underlying latent trait.[18]

4.1 *Changing Party and Issue Positions*

The analysis so far explored how partisans change their issue positions over time (e.g., do Democrats become more liberal?). Now, I want to consider two related questions. First, are people who change their issue positions more likely to change their partisanship? Second, do those who switch parties then change their issue positions? Together, addressing these questions will offer additional insight into the mechanisms underlying electoral polarization.

First, consider the question of whether changes in issue positions lead to changes in partisanship. Given the well-documented stability of partisanship (Campbell et al. 1980), I hypothesize there will be only limited movement of party ID in response to changing issue positions (though for an alternative viewpoint, see Fiorina 1981). In order to test this hypothesis, I examine respondents who became (on average) more liberal or conservative between 1992 and 1994. I then examine these respondents partisanship between 1994 and 1996. If changes in issue positions are driving changes in partisanship, then I would expect to find those who become more liberal (conservative) between 1992 and 1994 then become more Democratic (Republican) between 1994 and 1996.

[17] Although improving the measures of preferences would allow me to detect more change, the more fundamental limitation seems to be that most voters simply are not changing all that much over a four-year period.

[18] The online appendix compares Table 2 to a parallel analysis that fails to account for measurement error. Had I failed to account for measurement error, I would have drawn very different conclusions about the amount of the direction of change in the data, consistent with previous work on measurement error (Green and Palmquist 1990).

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Such issue-based party conversion is relatively rare, however. I find that only 27% of those who move in a liberal direction between 1992 and 1994 then move in a Democratic direction between 1994 and 1996; the corresponding figure for conservatives moving in a Republican direction is 16% (again reinforcing the idea that there is a move to the left from 1994 to 1996 in response to the Republican Party's actions). At least in this short window, partisanship only adapts to ideological change in a small number of cases, consistent with previous work (Miller 2000; Carsey and Layman 2006).[19]

Now consider whether party switchers subsequently change their ideology. Suppose a respondent moves from being a Democrat to a Republican between 1992 and 1994. Does he then move his issue preferences in a conservative direction between 1994 and 1996? Here, in contrast to the analysis above, I *do* expect to find movement over time; as individuals change their party ID (the keystone of their political worldview), their issue positions should adjust. Here, the data reveal some support for this idea, but it is not overwhelming. Among those who move in a Democratic direction between 1992 and 1994, 51% become more liberal between 1994 and 1996 (the corresponding figure for Republicans is 32%).[20] Although there is some party-driven ideological change, it is no more common than one would expect from random chance.[21] This sort of change undoubtedly *does* occur (Abramowitz and Saunders 1998; Levendusky 2008), but it takes place more slowly, or only on certain issues, or only in some subgroups within the population.

Overall, all these additional tests confirmed the message above. Although there is some change over this four-year period, the amount is fairly limited, particularly once the discussion is restricted to change that can be distinguished from random noise.

4.2 *A Longer-Term Analysis*

The findings above speak to what happens during a brief four-year snapshot. But scholars typically study polarization over much longer stretches of time. How can this short-term analysis inform a longer term study? Do these microlevel changes have any consequences over the long haul? In this section, I use the model's results to estimate how the sort of voter change observed above would translate into polarization over several decades. To conduct this counter-factual analysis, I rely on the model's estimates of how much each respondent's issue positions change over the four-year, 1992–1996 period. Suppose voters changed this much every four years over a period of 12 years, from 1992 to 2004. How much would this sort of change increase polarization? I compare this to the actual data in 1992 and 2004. By comparing these two quantities (the actual and the predicted levels of polarization), I can assess the role microlevel conversion plays in generating aggregate electoral polarization.[22]

[19]Carsey and Layman (2006) show that issue-driven party exit is concentrated among those who understand the parties diverge on the issue and also find the issue to be salient. In their analysis, approximately one-third of the sample meets the prerequisites for issue-driven party change, though not everyone with those characteristics changes their party ID. This is consistent with the small amount of issue-driven party change reported above.

[20]Here, I use a strict definition of party switching; I require individuals to change the affiliation, not just their strength (e.g., a party switcher changes from Independent to Democrat, not just from a weak Democrat to a strong Democrat). Results where I count any change in strength as a change in party give substantively similar results.

[21]Comparing the amount of issue-driven party change and party-driven issue position change, there is significantly more of the latter. Party ID has a larger effect on issue positions than the reverse, consistent with previous work (Miller 2000).

[22]This type of analysis, however, does face the limitation of ignoring changes stemming from replacement over time. Absent long-term panel data, however, it is not obvious how to overcome this deficit.

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Here, to measure respondents' preferences, I use four policy items asked repeatedly by the NES: the respondents' liberal-conservative self-identification, their positions on the government services/spending trade-off, whether government should provide health care for its citizens, and whether the government should provide each citizen with a guaranteed standard of living. To assess polarization in these attitudes, I use two measures: (1) the percentage of respondents who are centrists and (2) the SD of respondents' mean issue positions. I define centrists to be those who take positions (on average) within one unit of the midpoint of the NES policy scales.[23] If polarization has occurred, then there should be a decrease in the percentage of respondents who are centrists as respondents leave the center of the distribution for the extremes. Similarly, if the electorate has polarized, the SD of respondents' average position should increase.[24] Taken together, these two measures give an indication of how polarized (or not) respondents' attitudes actually are.

To begin, consider the amount of polarization predicted by my model. The model predicts a considerable decrease in the percentage of centrists; in 1992, 80% of respondents will have an average position within 1-unit of the scale midpoint on these items, but this is predicted to plummet to 50% by 2004. The pattern for the SD is largely the same, rising from 0.99 in 1992 to 1.70 in 2004. Both figures from the predicted data strongly suggest that there should be a large increase in polarization in the real data. The actual NES cross-sectional data from 1992 and 2004, however, show a different pattern. The percentage of centrists are 63% and 56% for 1992 and 2004, respectively, and the SDs are quite similar as well: 1.28 and 1.37, respectively. The actual data, then, show much more centrism (less polarization) than the model results.[25] This finding has two important consequences. First, the amount of change observed over the 1992–1996 period is likely an upper bound on the amount of change over any given short period of time. This finding would be consistent with previous work suggesting that the 1990s were a particularly important time of elite activity and mass response (Abramowitz and Saunders 1998). In other periods, it seems likely that respondents would change by smaller amounts. In fact, the amount of change that has taken place in the actual data over the 1992–2004 period is approximately consistent with respondents moving (on average) about two or so issue positions by 1–2 scale positions. So in actuality, even over more than a decade, most voters are not dramatically changing their issue positions.[26] This picture of mild increases in polarization is largely consistent with Fiorina's depiction of a moderate America (Fiorina, Abrams, and Pope 2005, 2008).

Further, the results illustrate one mechanism by which polarization actually occurs. The results above suggest that between 1992 and 2004, there was some increase in polarization, but that increase was relatively limited. The amount of observed change is consistent with individuals making relatively minor adjustments to their issue positions over time. These changes may seem rather insignificant and may not be distinguishable from measurement

[23]That is, people who are centrists place themselves on average between 3 and 5 on the NES 7-point scales.

[24]Although there are no standard measures of polarization, these are similar to others used in previous work, see DiMaggio, Evans, and Bryson (1996) and Abramowitz (2006).

[25]One possible limitation is that my measure might actually *understate* polarization in the panel data due to regression to the mean. Some respondents with extreme issue positions will become more moderate, thereby reducing my estimate of polarization (Finkel 1995). Given that the panel analysis overestimates the amount of polarization, this is unlikely to be a serious issue in this analysis. I am grateful to an anonymous referee for pointing this out to me.

[26]Panel attrition may also be a factor in why the model overstates polarization in the long run. If the people who drop out of the panel are also more moderate and less likely to be polarized, then this could affect the results. I am grateful to an anonymous referee to pointing this out to me.

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error in the short term, but over a longer period of time, they can alter the aggregate distribution of public opinion. Microlevel conversion provides the building block for aggregate polarization.

5 Conclusions

This paper provides a test of one principal microlevel mechanism underlying mass polarization: individual-level conversion. That is, I offer direct evidence demonstrating that individual Democrats and Republicans do become more liberal and conservative (respectively) over time. Those changes, however, tend to be fairly small over any given short window of time (changing at most one to two issue positions by about 1 scale position, on average). In a four-year period, these changes are often indistinguishable from measurement error. But across many individuals and over longer periods of time, these sorts of changes provide the microfoundation of mass polarization, as my simulations demonstrated.

Demonstrating that conversion contributes to long-term aggregate polarization is the primary contribution of this paper. But the results here also suggest an important way to move forward in the polarization debate. While determining the extent of electoral polarization matters, unpacking the consequences of this polarization is arguably even more important. This analysis demonstrates that some voters move toward their partisan elites even over short windows of time. If enough voters do this, then the distribution of opinion within the primary electorate will become more homogeneously liberal or conservative. This, in turn, will change the types of positions candidates will need to take to win office. Even if polarization is quite limited, it can still have significant consequences (for more on this point, see Levendusky 2008). Moving forward, then, it might be just as important to think about *how* citizens change and *why* this matters as it is to think about *how much* they change.

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