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Turnout and the local age distribution: examining political participation across space and time

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Abstract

In this paper, we examine the political effects of local age distributions, with an eye to understanding geographic variations in voter turnout. The Depression era birth cohort is now elderly and will soon make a final exit from the electorate through mortality. The Baby Boom generation is quickly closing on retirement. These older generations are highly participatory for both generational and life-cycle reasons, but the enormous post-Boomer age cohorts show signs of being less participatory. These generalizations about political activity within age cohorts raise questions about the extent to which local turnout levels are affected by the relative size of these groups in local electorates. We find that aggregate local turnout is highly sensitive to the age distribution, rising with the percentage over age 60, falling sharply with increases in the percentage between age 18 and 29. We find the greatest effects in those counties with the highest population growth rates, and we argue that the age gap between the general population and the active electorate will be greatest in these fast-growing locales. We conclude with some reflections about the importance of mobilizing younger voters who have not yet established a habit of voting.

Keywords: Turnout; Political participation; Voting; US Presidential elections; Political behaviour

During the next 25 years, a remarkable phenomenon will take place that is likely to have serious consequences for political life throughout the United States. The Depression Era generation, those who came of age during the 1930s and 1940s, will make a final exit from the electorate through mortality. The Baby Boom

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generation, the large post-World War II birth cohort presently in its 40s and 50s, will be entering retirement, and it too will begin to drop out of the electorate. Bracketing the other end of the population distribution is an enormous and fast-growing population under age 25. These are the children, and among the youngest, the grandchildren, of the Baby Boomers. Their numbers, at 99.4 million strong, are impressive to say the least—a full 35.3% of the US population was reported to be under age 25 in the 2000 census. By contrast, Baby Boomers (birthdates between 1946 and 1964) number approximately 70 million, and the remaining Depression Era cohort (those over 65) numbers about 35 million, although mortality is taking an increasingly heavy toll on this group. The younger birth cohorts are now in a stage of the life-cycle characterized by muted political influence, due mainly to the voting ineligibility of those under age 18, and the low levels of political participation that typify members of the 18–29 age group. According to one recent analysis, if current trends continue, those over age 65 will be outvoting young adults by a 4:1 ratio by the 2020s (Goldstein & Morin, 2002).

A sharp decline in the level of voter participation with the passing of the Baby Boom generation would appear to lie ahead. Boomers are not only more participatory than the younger birth cohorts in the electorate (those under age 40), they were also more participatory when they were in those younger age brackets, by about 10% points (Zukin, 2000). Because they are likely to remain highly participatory into their twilight years, we can expect the voice of retirement-age voters to echo loudly through the year 2020. But they will one day cease to be a political voice. Will they be replaced? How might their replacement vary from location to location across the nation? These are the questions that motivate our work here. While the changing shape of the national age distribution may have great relevance for participation trends in national elections, legions of candidates lean on their understanding of local electorates as their means to elective office, voters they must then represent as policymakers if they win. In rapid-growth locations, the difference between local populations and local electorates is only likely to increase as a result of youthful non-participation. In slow-growth locales, where there are few new voters to socialize, these gaps between voters and citizens are likely to be minimized.

Our concerns lead us directly to an examination of local variations in the age distribution. In some places, the aged population is large, and mortality rates are high relative to fertility rates. At other locations, the retirement-age population is a small proportion of the total, and fertility rates are much higher than mortality rates. And at still other locations, the mortality and fertility rates are equally high, with a smaller proportion of the population in middle age. Geographic mobility also plays a role in reconfiguring local age distributions, as young people coming of age exhibit high rates of mobility, as do elderly populations with means (Plane & Rogerson, 1994). Depending on the local shape of the age distribution, mortality, fertility and mobility will interact to produce political change to varying degrees. Political manifestations of demographic trends may be quite localized, but nevertheless quite potent (Jennings, 1987: p. 381; Nardulli, 1995; Nardulli, Dalager, & Greco, 1996).

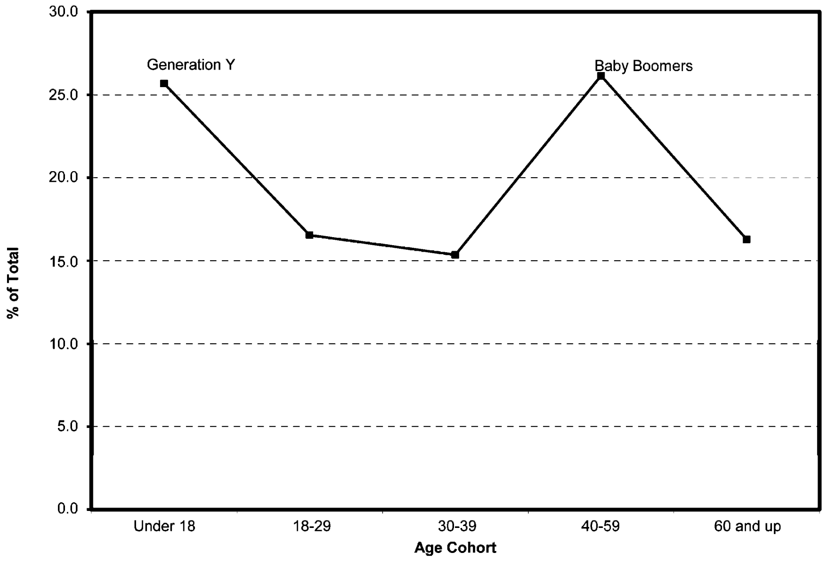

Fig. 1. A view of the age distribution of the US population, 2000.

From a national standpoint, the way of glimpsing what lies ahead demographically is to examine the graph in Fig. 1, where we show one depiction of the national age distribution of the population current with the 2000 census. These figures show that in the next 20 years the bulge in the distribution that is peaked in the 40–59-year old age group will shift to the right and eventually decline toward mortality. Behind (or beneath) them in the 18–29 bracket sits Generation X, the "baby busters", a small group born during the late 1960s and early-1970s. The under 18 age cohort is the sizable Generation Y population, also called the "echo-boom," which constitutes a growing plurality of the nation's population.

The practical political implications of the current age distribution are not entirely clear nationally, much less so locally. If the more recent birth cohorts emerge from the non-participatory stages in the life-cycle to become regular voters, then the political impact of the final departure of Depression era cohort and the subsequent demise of the Baby Boomers may not be much to note and the transition from one generation to the next could be imperceptible. Generational change need not have any significant political consequences, in the short or long term, since generations need not be politically distinct (Abramson, 1974, 1976, 1989; Braungart & Braungart, 1986). But if the younger cohorts' participation levels lag not only through young adulthood, but into middle age, the level of turnout could drop sharply as Baby Boomer activists depart the electorate not to be replaced by anyone. This drop in turnout will have a significant—though locally variable—impact on the gap between the active electorate and the general population. In particular, the active electorate is likely to be significantly older (and almost certainly wealthier) than the population as a whole.

At the outset, we should remind ourselves of the distinction between the short-term consequences of generational replacement, attributable to life-cycle differences between the newer and older generations, and longer-term consequences, attributable specifically to generational effects. That elderly people participate more than younger people can be attributed to their stage in the life-cycle. Younger citizens are unsettled and have not yet developed a habit of voting whereas the middle aged and elderly have (Deufel, 2002; Plutzer, 2002). A generational effect, on the other hand, is indicative of differences between generations when the comparison cohorts are at similar stages in the life-cycle. To distinguish between life-cycle and generational differences, we present the graph of voter participation rates by age cohort for the 1972 and 2000 presidential elections (see Fig. 2). For both election years, a similar pattern is present: low participation in the youngest age cohorts, rising participation in middle age, followed by declining participation at the very end of the life-cycle. This inverted U-shaped pattern has been persistent across many decades, and was noted at least as early as the 1950s (Campbell, Converse, Miller, & Stokes, 1960). Notably, those over age 80 still report participating at a higher rate than those under age 30 (see Fig. 2), and some surveys show very little turnout decline from middle to old age (Glenn & Grimes, 1968; Jennings & Markus, 1988).

Generational effects are most apparent in these data when we compare participation rates across election years within a given age cohort. For instance, it is clear that when the initial Baby Boomers were squarely in the age 18–29 bracket, in

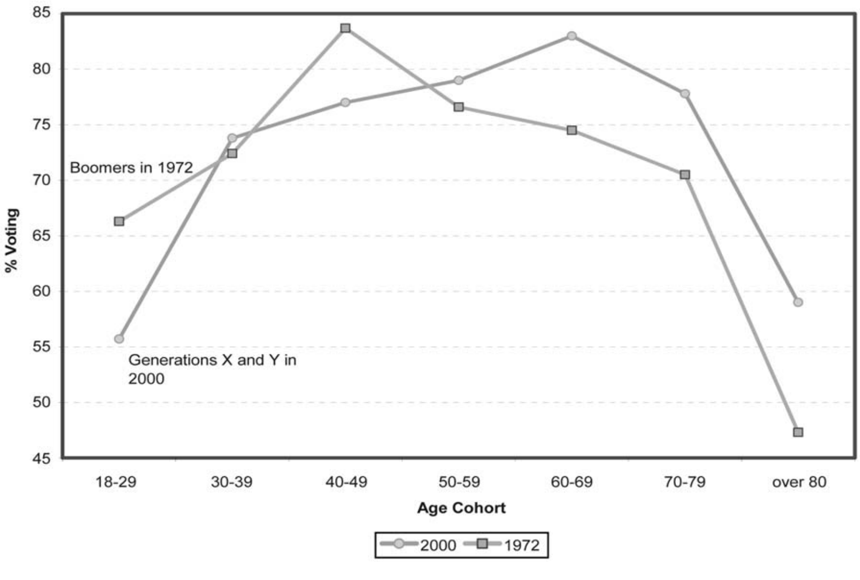

Fig. 2. Distribution of voter participation by age cohort in 1972 and 2000 presidential elections (*Source*: *American National Election Studies* 1972, 2000).

1972, they were participating at a higher rate (66%) than the youngest generations were in 2000 (56%). The difference is 10% points, and suggests that even as the young cohort moves through the life-cycle, its participation may not reach the level of their parents and grandparents when they were the same age.

Differences in political and policy views

What kind of political effects might we expect to follow from the generational changes we have been discussing? Much of the significance of generational differences would appear to hinge upon the arriving and departing generations having differing policy views and interests. The fertility and mortality process is surely capable of driving partisan change through differential socialization associated with the events occurring during each generation's upbringing (Abramson, 1975; Braungart & Braungart, 1986). But generational change is also capable of hastening or delaying policy shifts. If generational replacement finds a highly active generation being replaced by a largely inactive one, the generationally-induced shrinkage of the electorate results in a widening age gap between the general population and the active electorate. Interests aligned with the younger generation do not have representation at the polls, altering the nature of policy demands on officeholders. As the Baby Boomer generation nears retirement, it will be more focused on federal senior citizen benefits than the tax burden that will fall on their children and grandchildren. Arguably, we are moving toward generational fiscal warfare with the young paying the tab.

As an indication that these policy views and interests of the youngest generation are distinct from those of their elders, see Table 1, exhibiting some basic cross-tabulations of policy opinion by age cohort drawn from the 2000 *American National Election Study*. That we would find younger and older people differing on issues specifically related to the maintenance of social security should be no surprise. But these figures also show that younger Americans are decisively more in favor of affirmative action and government's role in ensuring equal treatment for blacks than those in the oldest age bracket. Younger Americans also exhibit more tolerant attitudes toward the integration of gays in the military (see also: Goldstein & Morin, 2002). These findings suggest that the low participation levels of younger Americans will not only skew the politics of social security, but also issues relating to race and morality. The disproportionate participation of the elderly relative to the young may weaken the drive toward racial justice and government-enforcement of non-discrimination.

Geographic variation in the age distribution

Adding to the fascinating complexity of trying to understand the effects of age cohorts on political behavior is a large and restless population residing in a federal system in which state and local elections are waged as politically distinct battles.

Table 1
Exemplary issue and policy differences by age cohort, November 2000

Response category	Age cohort			
	18–29	30–44	45–64	65 older
Q. Should companies that have discriminated against blacks have to have an affirmative action plan?				
Yes, they should	57.0	50.6	48.3	37.9
No, they should not	38.1	43.1	44.9	55.0
Other	4.9	6.3	6.8	7.1
$N = 1137$; $X^2 = 21.66$; $p \leq 0.001$				
Q. Should the federal government see to it that black people get fair treatment in jobs?				
Yes, strongly	51.8	43.9	49.9	35.6
Yes, not strongly	9.6	10.2	8.0	6.8
No, not strongly	7.2	8.9	7.5	7.9
No, strongly	31.3	37.1	34.5	49.7
$N = 1137$; $X^2 = 19.53$; $p \leq 0.021$				
Q. Should homosexuals be allowed to serve in the military?				
Yes, strongly	57.6	53.6	50.2	43.1
Yes, not strongly	27.1	24.6	22.3	25.0
No, not strongly	4.1	5.4	4.6	7.2
No, strongly	11.2	16.4	23.0	24.6
$N = 1684$; $X^2 = 31.56$; $p \leq 0.001$				
Q. ...proposal to use the expected budget surplus to protect social security and medicare?				
Approve strongly	52.4	62.9	68.9	74.8
Approve, not strong	29.0	17.4	12.6	13.7
Disapprove, not strong	11.5	9.6	9.3	3.9
Disapprove strongly	7.1	10.0	9.2	7.5
$N = 1755$; $X^2 = 58.17$; $p \leq 0.001$				

Source: *American National Election Studies, 2000*.
Cell entries are percentages summing to 100 down the columns for each table.

To comprehend the political impact of specific age distributions, local information about the geography of these developments is required.

Since our focus is on geographic variation in voter turnout, we must evaluate the relative theoretical leverage of alternative geographic disaggregations for understanding local political effects. While broad geographic regions and references to political cultures (Elazar, 1984, 1994) might be useful for some purposes, age distributions vary more locally, by county, than by broad geographic region.[1]

[1] To prove this point, one need only run an analysis of variance on between group variation vs. within group variation for the percentage of the population in each age group, with the groups of counties being defined according to Elazar's three subcultural categories. This analysis shows that the variance within the three groups for age cohorts is far higher than the between group variance. The same is true for the dependent variable, turnout. Far greater variance lies at the county level within each of the subcultural categories, than between the categories themselves. This analysis is available from the authors upon request.

Within culturally homogeneous regions, in other words, there will be locations with large elderly concentrations, as well as youthful ones. Aggregating to the region-wide level would result in these concentrations canceling each other out, obscuring the variation we most want to understand.

One simple but politically relevant way of disaggregating the national population distribution is to examine high growth and low growth counties separately. Population growth rates closely mirror underlying trends in the local economy and labor market (Gimpel & Schuknecht, 2001, 2003). Since the forces of population growth/decline (fertility, mortality and population mobility) are all captured in overall growth rates (measured by percent change in population), we can fruitfully contrast the shape of the age distribution in locations in the highest growth quartile with those in the lowest quartile (see Fig. 3). Also, high growth counties will eventually play a more significant future role in state politics than the stagnant counties, although in strictly electoral terms their influence may lag well behind their growing numbers.

What the comparison in Fig. 3 reveals is that the difference between high growth and low growth locales is primarily found in the size of the elderly population (those over age 60). Notably, the proportions in the large Baby Boom cohort (age 40–59) are highly similar, but the proportion of those in the 18–29 age group is significantly higher in the fastest growing locations. These differences are potentially quite relevant to turnout inasmuch as the elderly have much higher participation

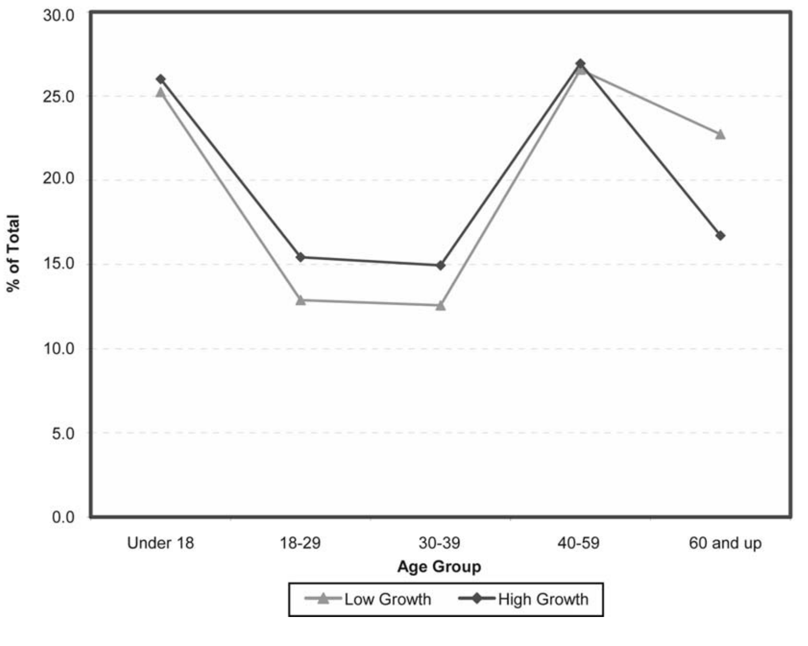

Fig. 3. Views of the age distribution of the US population in high and low quartiles of population growth, 2000.

rates than the young. Specifically, we would expect the high growth locations to have considerably lower turnout rates, and they did in the 2000 presidential election where the mean for the high growth quartile was 51.8% (s.d. = 9.3), compared with 56.9% (s.d. = 9.1) among the low growth locations.

The low turnout levels in high growth areas are suggestive of the difficult challenge that candidates and parties face in quickly growing towns and cities when they try to mobilize new residents and persuade those coming of age to become habitual voters. At many of these locations, people are entering the potential electorate at a rate far faster than they can be converted into regular participants—with the results showing a steadily declining level of participation.

In the locations comprising the lowest quartile of growth, working to mobilize new voters is not a major chore, since populations are either stable or declining. In places of steep decline, the proportion of the population that is not participating may well shrink with the attrition of non-voters, elevating the level of turnout by shrinking the potential electorate. Hence, we see many locations of exceedingly high turnout on the rural high plains, where small town and farm populations are aging and the youthful non-voting segment of the electorate is migrating away from agricultural ways of life.

Geographic or spatial structure in turnout rates

There are a number of ways in which we can statistically evaluate the effect of local age distributions in order to document and understand their impact. As a temporal process, addressing the effect of aging on turnout over time obviously makes sense, particularly if the focus is on changes attributable to distinctive generations, as opposed to differences between one group and another attributable to the part of the life-cycle in which they find themselves. Our approach here we will set aside the long-term implications of trends in fertility and mortality, and profitably employ cross-sectional county-level data across the presidential election cycles from 1980 to 2000. We explore how the local size of the population in the younger stages of the life-cycle explain depressed turnout at many locations, whereas those places with a greater representation of elderly voters show much higher turnout.

We draw our political participation and demographic data for the nation's 3100 counties from the 1980, 1990 and 2000 US decennial censuses. Our measure of political participation is the percentage of the population of voting age that cast ballots in each of the 1980–2000 presidential elections. To secure an accurate measure of turnout in the face of high international migration, we have subtracted the non-citizen population over age 18 from the denominator (McDonald & Popkin, 2001).

The analysis of geographic data poses special challenges from a statistical standpoint because we must first be cognizant of spatial structure. Spatial structure is not only interesting in its own right, to show regional clustering of low or high turnout levels, but it poses special challenges for the estimation of regression models aimed at offering explanations for geographic patterns (Anselin, 1988). Given that county boundaries are merely conventions, and given that residents freely cross county boundaries, it is likely that turnout levels in one jurisdiction will be positively related to participation in neighboring jurisdictions. This is because populations interact across adjacent counties, and share similar values on other predictors of political engagement, such as socioeconomic status, education level and mobility rates. Moreover, adjacent counties may often be part of the same election districts, experiencing similar campaign stimuli. Yet standard regression models assume no spatial dependency among observations. Indeed, such models routinely assume that observations on the dependent variable are independent of one another. But clearly in the case of geographically situated data such as ours, this assumption is false. It is highly likely that participation levels in one county are highly correlated with turnout levels in adjacent jurisdictions.

Taking an example year, in this case, 2000, we can obtain a clearer grasp of the spatial structure in turnout variation by considering Fig. 4 displaying the standardized G_i^*-statistic for turnout rates[2] (by natural breaks) for the 2000 presidential election (Getis & Ord, 1992). With G_i^*, we are able to detect a concentration of similar turnout values around i, and the value of i is also included in the calculation (Fotheringham, Brunsdon and Charlton, 2000: p. 100–101). There is an unquestionable North–South divide evident on Fig. 4, with counties in the Upper Midwest and Plains, and in New England exhibiting the highest turnout (dark shades), while those in the South and Southwest stand in the lowest grouping. While it may be possible to explain these geographic differences as a function of culture; ‘‘Moralistic’’ in the North and ‘‘Traditionalistic’’ in the South (Elazar, 1994: p. 9), we want to resist attributing the cause to cultural differences if we can instead pinpoint the specific economic, social or demographic characteristics that account for much of that variation.

To examine geographic clustering in turnout levels for the 2000 presidential election, we utilize a familiar geographic statistic, *Moran's I*, as a means of measuring the extent of ‘‘spatial dependence’’ in turnout patterns (Anselin, 1988; Griffith, 1987; O'Loughlin, Flint, & Anselin, 1994).[3] Moran's I gauges the extent of spatial

[2] To identify the way in which values of turnout are clustered across the nation, we use a local statistic designed to depict trends in the data around each town. The G_i^* is formulated as:

$$G_i^* = \sum_j w_{ij} x_j \Big/ \sum_j x_j$$

where G_i is the measure of local clustering of turnout around particular town i, x_j is the value of turnout at j and w_{ij} represents the degree of connection between towns i and j, measured in binary terms (Fotheringham, Brunsdon and Charlton 2000: p. 100–101).

[3] Moran's I measures the covariance between the value of a variable x, at one place, and its value at another (Fotheringham, Brunsdon, & Charlton, 2000; Goodchild, 1986; Anselin, 1988). The formula for Moran's I is as follows:

$$I = \left(\frac{n}{\sum_i \sum_j w_{ij}}\right)\left(\frac{\sum_i \sum_j w_{ij}(x_i - \bar{x})(x_j - \bar{x})}{\sum_i (x_i - \bar{x})^2}\right)$$

where i and j index the N spatial units and w_{ij} is the spatial weight measuring the degree of connection between towns i and j. $\bar{x}$ is the mean value of x.

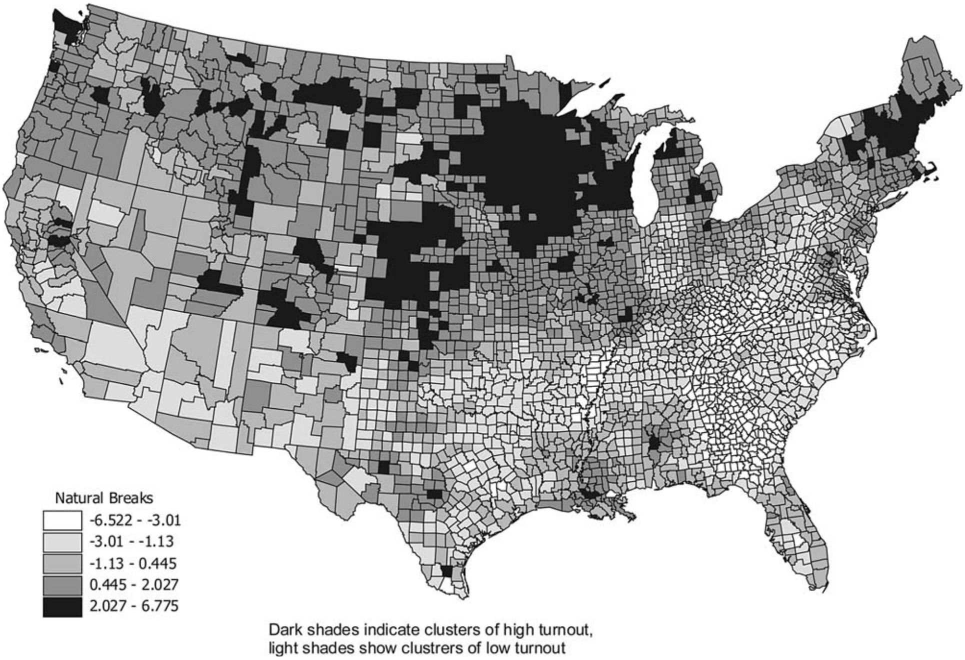

Fig. 4. Standardized G_i^* statistic for turnout in the 2000 Presidential Election by County in the 48 Contiguous States.

dependence because it is formulated to discriminate between different arrangements of x values on a planar surface. From an interpretive standpoint, the values of Moran's I are centered around zero. High positive values indicate positive spatial autocorrelation, showing that neighboring values are alike. High negative values exhibit negative autocorrelation, exhibiting dissimilarity in nearby values, following the pattern on a checkerboard. Values approaching zero indicate a random pattern, or no significant spatial structure (Tam Cho, in press; Goodchild, 1986).

If spatial autocorrelation is present, then models that do not take into account the spatial relationships among units cannot be trusted to provide accurate parameter estimates in regression models (Tam Cho, in press). If spatial structure is present in the data for the variable to be explained, then the next step is to determine the precise nature of the geographic relationships. After review of similar research, we used a 40-mile distance criteria to determine spatial adjacency. This estimate makes the reasonable assumption that the extent of daily population interaction drops off sharply after 40 miles due to limits on the mileage traveled to work. In the binary distance matrix, those counties whose centroids fell within a 40-mile distance radius were considered influential neighbors; those falling outside this range were not. There were, to be sure, about 150 counties, primarily in western states, that by this measure had no neighbors. But it makes more sense to assume that few people living in these counties have daily interactions with those outside county boundaries, than to assume that they do, and then be saddled with a more unrealistic criterion (say, 60 or 100 miles) to determine spatial adjacency.

In the turnout data for the 2000 presidential election, to take but one exemplary year, the value of Moran's I is 0.52, exhibiting positive spatial dependency (Moran's I for $1996 = 0.58$; and for $1992 = 0.57$) Tested against the assumption that this particular set of x values was drawn independently from a population of normally distributed values leads us to reject the null hypothesis of no spatial dependence at the $p \leq 0.0001$ level of significance. Testing under a randomization assumption—that the sample of x values was randomly chosen from among the $n!$ possible arrangements of the observed x values among the total number of counties, then estimating the probability that such a randomly chosen arrangement would have a Moran's I as extreme as the one actually observed—also leads us to reject the null hypothesis.

Alternative hypotheses and data analysis

The Moran's I statistic, along with the obvious spatial patterns exhibited by the standardized G_i^* in Fig. 4, strongly suggest that we consider the alternative explanations for turnout that are commonly advanced in political participation research. Indicators that represent these causal influences must be included in any model that hopes to isolate the effects of generational variables. First, we control for the effect of recent migration. Population mobility depresses turnout due to the fact that most states require movers to reregister to vote well before election-day (Squire, Wolfinger, & Glass, 1987; Wolfinger & Rosenstone, 1980). While determined citizens will eventually surmount the obstacles posed by their own mobility, these barriers are overcome at some cost and tax the level of turnout (Conway, 2002). Our measure for the volume of recent migration is the percentage of residents in a county who have moved in from outside the state in the previous 5 years.

The racial and ethnic composition of local populations must be considered relevant control variables as it is well known that the African American and Latino populations participate at much lower rates than the Anglo white population, even if it is income and education that are primarily responsible for the differences, and not race, per se. Our measures for the Black and Latino populations are simply the percentage of the county's total population identified as Black and Hispanic by standard US census sources. We also consider the effects of population density on turnout since a long line of studies has suggested its relevance, indicating that it is smaller, less densely populated areas where participation is highest (Dahl, 1967; Dahl & Tufte, 1973; Kasarda & Janowitz, 1974; Nie, Powell, & Prewitt, 1969; Oliver, 2000). Rural and small town populations are said to be rich with the kinds of social ties that promote civic engagement (Putnam, 2000).

We also consider the county's prior level of political competitiveness, realizing that locations in which the parties run close to even are likely to exhibit higher turnout as a function of party and candidate mobilization efforts (Rosenstone & Hansen, 1993). Our measure for competitiveness is electoral marginality, computed as the absolute value of the electoral margin between the two major party candidates in the previous presidential election. By subtracting this quantity from 100, higher values on our competitiveness measure indicate counties with a recent history of close presidential elections. Realizing that education and income are powerful influences on political participation in many studies using survey data (Miller & Shanks, 1996; Rosenstone & Hansen, 1993; Verba & Nie, 1972; Verba, Schlozman, & Brady, 1995), we add controls capturing the percentage of the population (over age 25) with a four year college degree, and the median family income of the county population.

Our measures capturing the theoretically relevant aspects of the age distribution of local populations are four. First, we calculate the proportion of the population that is in the youngest electorally relevant cohort—those between the ages of 18 and 29. The youngest voters are less likely to participate than their elders, possibly for generational reasons, but definitely for life-cycle reasons, namely; they are highly mobile, have developed less of a stake in their communities, and they have less knowledge about electoral processes, voting and candidates (Deufel, 2002; Highton & Wolfinger, 2001; Timpone, 1998). All of these inertial forces add up to not having developed the habit of voting (Plutzer, 2002). Our prediction is that places with an age distribution that is skewed to the right will exhibit lower turnout than those with bell-shaped distributions, or distributions skewed to the left. Similarly, we also included a measure for the percentage of the population that is over age 60, believing that a large bloc of elderly voters would predict high turnout in the local electorate. We control for the size of the 40–59 age cohort mainly because turnout is highest in middle age (see Fig. 2), and we want to reduce the risk that our variable for the age 18–29 population is really capturing the parents of these voters, most of whom will lie in the 40–59 age bracket. Finally, our indicator for the rapidity of local generational change is simply a three way interaction of these two age variables at the locations where the age distribution is bimodal in its distribution; that is, the percentage of the population between ages 18–29 multiplied by the percentage over age 60 only for those locations where these two variables are both above their national mean (coded 1 if they are, 0 otherwise). This triple interaction takes on high values when there is a large cohort of potential voters that has recently come of age coupled with a large bloc of voters departing the electorate through mortality. For the reasons laid out above, we hypothesize that as the values of the interaction term increase, turnout will drop.

Control variables for state election laws were included because previous research has often shown them to be statistically significant influences on political participation (Knack, 1995; Timpone, 1998; Rosenstone & Wolfinger, 1978). Here, we test for the effects of four aspects of state law that could influence county turnout levels: motor vehicle license registration, closing dates, election-day or "same-day" registration, and early in-person voting. Motor vehicle license registration refers to the ability to register to vote when securing a motor vehicle driver's license—enacted as a federal law requiring state compliance in 1994, some states did have this provision on their books earlier (Knack, 1995). Election-day registration refers to the ability for the voter to wait to register to vote on election-day, with no prior closing date deadline. Closing dates are relevant to turnout because if a voter does not register to vote by the deadline, (s)he cannot vote. To measure the effect of closing date deadlines, we have classified the states into two groups, those who do not have same-day registration but have a closing date less than 28 days prior to the election, and those that have a requirement of 28 days or more. We expect that those counties whose electoral laws fall into the latter group will exhibit lower turnout than those that do not. Finally, early in-person voting refers to the ability of voters to cast ballots before election-day under special circumstances, providing they show-up to vote in person (rather than through the mail). We anticipate that early-voting, motor vehicle license registration and same-day registration will heighten turnout, at least modestly, over the participation figures reported for the counties in states (and years) that have not adopted these legal changes.

For the intercensal observation years (1984, 1988, 1992, 1996), we use linear interpolation to estimate quantities for all demographic variables on the right hand side of our regression models. To adjust for the likely spatial dependency in our observations, we computed a spatially lagged version of each of our dependent variables using the statistical software *SpaceStat*™, and then included this spatially lagged variable on the right hand side of our regression models.[4]

As a second step, we aim to maximize the generality of our findings, by conducting an analysis of the pooled data from the six election years, including dummy variables for each year (using 1980 as the baseline for comparison). Use of regression in this context requires the implementation of a statistical technique that adjusts the standard errors of the regression coefficients by correcting for autocorrelation in the errors from repeated observations of the same cases (in our case, counties) over time. The model we estimate includes not only the conventional error term, but error associated with observations of the individual counties (i) across the six presidential elections from 1980 to 2000. It takes the form:

$$Y_{it} = a + X_{it}\beta + v_i + e_{it}$$

Where v_i is the error term associated with observing each individual county over time, and e_{it} is the model error term with the standard properties. The results from the estimation of this pooled cross-sectional model are reported in Table 4.

Results from high and low growth settings: 1980–2000

Little more than a cursory overview of Tables 2a and b, 3a and b is needed before one realizes that there are—not surprisingly—striking similarities among these sets of locations regardless of whether they are low growth, high growth or somewhere in between. Variables associated with the conventional SES model

[4] Briefly, the spatial lag is a weighted sum of the observations within a specified distance to a given observation of the dependent variable. In this case, the distance ≈ 40 miles.

Table 2
Models of turnout in (a) low growth counties, 1980–2000 and (b) low to moderate growth counties, 1980–2000

Pooled model	*b*	Seb	*Z*	Prob	1 s.d.	Effect
(a) Lowest growth quartile						
(Constant)	5.283	3.328	1.587	0.000		
Population density	−0.00046	0.00024	−1.959	0.050	732.72	**−0.34**
Percent Black	−0.009	0.013	−0.696	0.486	15.86	−0.14
Percent Hispanic	−0.053	0.017	−3.123	0.002	10.25	**−0.55**
Median family income	−0.000005	0.000024	−0.201	0.841	9873.09	−0.05
Percent with 4 years college	0.115	0.044	2.610	0.009	2.84	**0.33**
Percent short-term migration	−0.137	0.022	−6.284	0.000	4.08	**−0.56**
Percent over age 60	0.311	0.050	6.183	0.000	4.16	**1.30**
Percent 40–59	0.456	0.089	5.141	0.000	2.41	**1.10**
Percent aged 18−29	−0.369	0.046	−8.056	0.000	3.86	**−1.42**
Generational replacement	0.002	0.001	2.043	0.041	87.81	**0.14**
Electoral margin–competitiveness	0.001	0.004	0.300	0.764	16.54	0.02
Spatial lag of turnout	0.708	0.015	47.500	0.000	8.47	**6.00**
Election year 1984	−0.078	0.171	−0.456	0.648	0.37	−0.03
Election year 1988	−1.527	0.237	−6.435	0.000	0.37	**−0.57**
Election year 1992	−2.835	0.265	−10.708	0.000	0.37	**−1.05**
Election year 1996	−7.774	0.423	−18.370	0.000	0.37	**−2.88**
Election year 2000	−3.667	0.618	−5.933	0.000	0.37	**−1.36**
Motor vehicle registration	0.260	0.172	1.511	0.131	0.50	0.13
Closing days 28 or more	0.928	0.214	4.337	0.000	0.50	**0.46**
Election day registration	0.424	0.279	1.520	0.128	0.32	**0.14**
Early, In-person voting	0.923	0.172	5.357	0.000	0.40	0.37
Rho	*0.729*					

$N = 4533$; $R^2 = 0.718$
Wald $\chi^2 = 11,034.8$; $p \leq 0.00001$

Table 2 (*continued*)

Pooled model	*b*	Seb	*Z*	Prob	1 s.d.	Effect
(b) Second growth quartile						
(Constant)	6.643	3.203	2.074	0.038		
Population density	−0.00001	0.00006	−0.159	0.874	2557.91	−0.03
Percent Black	−0.016	0.011	−1.443	0.149	16.10	−0.25
Percent Hispanic	−0.017	0.015	−1.124	0.261	10.03	−0.17
Median family income	0.00007	0.00002	4.551	0.000	11269.52	**0.81**
Percent with 4 years college	0.175	0.033	5.305	0.000	4.00	**0.70**
Percent short-term migration	−0.152	0.019	−7.879	0.000	4.19	**−0.64**
Percent over age 60	0.222	0.067	3.292	0.001	2.89	**0.64**
Percent 40–59	0.435	0.091	4.790	0.000	2.43	**1.06**
Percent aged 18-29	−0.439	0.042	−10.513	0.000	4.14	**−1.82**
Generational replacement	−0.001	0.001	−0.905	0.365	88.54	−0.06
Electoral margin–competitiveness	0.011	0.004	3.031	0.002	14.02	**0.16**
Spatial lag of turnout	0.731	0.015	47.408	0.000	7.53	**5.50**
Election year 1984	0.056	0.143	0.394	0.694	0.37	0.02
Election year 1988	−1.106	0.188	−5.876	0.000	0.37	**−0.41**
Election year 1992	−2.845	0.213	−13.380	0.000	0.37	**−1.05**
Election year 1996	−8.700	0.345	−25.188	0.000	0.37	**−3.22**
Election year 2000	−5.429	0.473	−11.470	0.000	0.37	**−2.01**
Motor vehicle registration	0.104	0.158	0.657	0.511	0.50	0.05
Closing days 28 or more	−1.179	0.189	−6.241	0.000	0.48	**−0.57**
Election day registration	−0.743	0.269	−2.757	0.006	0.26	**−0.19**
Early, in-person voting	0.698	0.157	4.437	0.000	0.39	**0.27**
Rho	*0.752*					
$N = 4608$; $R^2 = 0.689$						
Wald $\chi^2 = 12,400.3$; $p \leq 0.00001$						

Spatially weighted cross-sectional time series regression estimates.
Effect = change in turnout from a one standard deviation change in the value of *x*. Effects in boldface are statistically significant.

Table 3
Model of turnout in (a) moderate growth counties, 1980–2000 and (b) highest growth counties, 1980–2000

Pooled model	*b*	Seb	*Z*	Prob	1 s.d.	Effect
(a) Third growth quartile						
(Constant)	9.717	2.715	3.580	0.000		
Population density	−0.00022	0.00009	−2.493	0.013	1912.77	**−0.42**
Percent black	−0.042	0.012	−3.526	0.000	14.68	**−0.61**
Percent hispanic	−0.030	0.015	−1.920	0.055	9.95	**−0.29**
Median family income	0.00014	0.00002	8.698	0.000	12214.30	**1.67**
Percent with 4 years college	0.192	0.031	6.132	0.000	5.02	**0.96**
Percent short-term migration	−0.054	0.016	−3.382	0.001	4.85	**−0.26**
Percent over age 60	0.217	0.055	3.971	0.000	3.25	**0.70**
Percent 40–59	0.197	0.081	2.421	0.015	2.76	**0.54**
Percent aged 18–29	−0.459	0.039	−11.917	0.000	4.73	**−2.17**
Generational replacement	0.000	0.001	−0.298	0.765	62.67	−0.02
Electoral margin–competitiveness	0.007	0.004	1.677	0.093	14.28	**0.09**
Spatial lag of turnout	0.761	0.015	51.427	0.000	8.42	**6.41**
Election year 1984	−0.105	0.148	−0.709	0.478	0.37	−0.04
Election year 1988	−1.146	0.181	−6.339	0.000	0.37	**−0.42**
Election year 1992	−2.898	0.210	−13.784	0.000	0.37	**−1.07**
Election year 1996	−9.153	0.372	−24.625	0.000	0.37	**−3.39**
Election year 2000	−7.318	0.509	−14.378	0.000	0.37	**−2.71**
Motor vehicle registration	0.233	0.171	1.362	0.173	0.50	0.12
Closing days 28 or more	−0.673	0.206	−3.267	0.001	0.46	**−0.31**
Election day registration	−0.098	0.373	−0.262	0.794	0.23	−0.02
Early, in-person voting	0.340	0.167	2.040	0.041	0.38	**0.13**
Rho	*0.736*					

$N = 4620$; $R^2 = 0.703$
Wald $\chi^2 = 11,493.6$; $p \leq 0.00001$

Table 3 (*continued*)

Pooled model	*b*	Seb	*Z*	Prob	1 s.d.	Effect
(b) Highest growth quartile						
(Constant)	16.651	2.350	7.086	0.000		
Population density	0.00010	0.00044	0.220	0.826	343.57	0.03
Percent Black	−0.071	0.016	−4.608	0.000	9.97	**−0.71**
Percent Hispanic	−0.061	0.011	−5.335	0.000	13.47	**−0.82**
Median family income	0.00012	0.00002	7.550	0.000	13796.24	**1.67**
Percent with 4 years college	0.376	0.028	13.510	0.000	6.09	**2.29**
Percent short-term migration	−0.080	0.011	−7.360	0.000	7.24	**−0.58**
Percent over age 60	0.195	0.034	5.799	0.000	4.64	**0.90**
Percent 40–59	0.125	0.061	2.045	0.041	3.33	**0.42**
Percent aged 18–29	−0.577	0.037	−15.506	0.000	5.00	**−2.88**
Generational replacement	−0.001	0.001	−0.538	0.590	45.50	−0.03
Electoral margin–competitiveness	−0.011	0.004	−2.476	0.013	15.17	**−0.16**
Spatial lag of turnout	0.713	0.014	52.202	0.000	9.04	**6.44**
Election year 1984	−0.647	0.160	−4.039	0.000	0.37	**−0.24**
Election year 1988	−1.499	0.197	−7.626	0.000	0.37	**−0.55**
Election year 1992	−3.204	0.217	−14.751	0.000	0.37	**−1.19**
Election year 1996	−9.831	0.383	−25.692	0.000	0.37	**−3.64**
Election year 2000	−7.758	0.529	−14.662	0.000	0.37	**−2.87**
Motor vehicle registration	0.138	0.187	0.742	0.458	0.50	0.07
Closing days 28 or more	−0.191	0.198	−0.965	0.335	0.45	−0.09
Election day registration	−0.133	0.392	−0.338	0.735	0.24	−0.03
Early, in-person voting	−0.399	0.178	−2.239	0.025	0.38	**−0.15**
Rho	*0.677*					
$N = 4608$; $R^2 = 0.731$						
Wald $\chi^2 = 11,288.5$; $p \leq 0.00001$						

Spatially weighted cross-sectional time series regression estimates.
Effect = change in turnout from a one standard deviation change in the value of x. Effects in boldface are statistically significant.

Table 4
Model of turnout in all counties, 1980–2000

Pooled model	*b*	Seb	*Z*	Prob	1 s.d.	Effect
(Constant)	8.826	1.375	6.419	0.000		
Population density	−0.000144	0.000051	−2.845	0.004	1652.01	**−0.24**
Percent Black	−0.030	0.006	−5.049	0.000	14.42	**−0.44**
Percent Hispanic	−0.046	0.007	−6.512	0.000	11.10	**−0.51**
Median family income	0.000099	0.000008	12.918	0.000	12087.26	**1.20**
Percent with 4 years college	0.249	0.016	16.034	0.000	4.83	**1.20**
Percent short-term migration	−0.071	0.007	−9.545	0.000	5.67	**−0.40**
Percent over age 60	0.184	0.021	8.707	0.000	4.59	**0.84**
Percent 40–59	0.347	0.038	9.176	0.000	2.83	**0.98**
Percent aged 18–29	−0.436	0.019	−22.813	0.000	4.25	**−1.85**
Generational change	0.000	0.000	0.766	0.444	73.49	0.02
Electoral margin–competitiveness	−0.001	0.002	−0.405	0.686	15.12	−0.01
Spatial lag of turnout	0.731	0.007	102.090	0.000	8.93	**6.52**
Population growth/decline	−0.126	0.007	−17.094	0.000	6.12	**−0.77**
Election year 1984	−0.533	0.079	−6.725	0.000	0.37	**−0.20**
Election year 1988	−1.596	0.099	−16.190	0.000	0.37	**−0.59**
Election year 1992	−2.992	0.108	−27.637	0.000	0.37	**−1.11**
Election year 1996	−8.816	0.176	−50.140	0.000	0.37	**−3.26**
Election year 2000	−6.242	0.239	−26.153	0.000	0.37	**−2.31**
Motor vehicle registration	0.136	0.086	1.584	0.113	0.50	0.07
Closing days 28 or more	−0.270	0.099	−2.730	0.006	0.48	**−0.13**
Election day registration	−0.163	0.157	−1.038	0.299	0.27	−0.04
Early, in-person voting	0.414	0.083	4.960	0.000	0.39	**0.16**
Rho	*0.729*					

$N = 18,368$; $R^2 = 0.729$
Moran's I without spatial lag = 0.509
Moran's I with spatial lag = −0.120
Wald $\chi^2 = 46,714$; $p \leq 0.0001$

Spatially weighted cross-sectional time series regression estimates pooled across election years.
Effect = change in turnout from a one standard deviation change in the value of *x*. Effects highlighted in boldface are statistically significant.

(education and income) tend to have a significant impact on turnout regardless of the growth status of the county. Similarly, counties with relatively higher black populations exhibit lower participation rates, as do counties that experience higher levels of recent in-migration. Year-specific effects also vary little across the growth quartiles.

That said, the impact of certain factors differs depending upon the county-level growth context. For example, the impact of specific registration requirements/rules often varies by county growth rate, clearly suggesting that electoral reform has had an uneven geographic impact within and across states, depending upon local conditions.

For our purposes, the similarities and differences that are most important have to do with the voting patterns of the youngest adult cohort (percent aged 18–29) and the oldest adult cohort (percent over age 60). As would be expected, the relative size of the 18–29 age group has a significant negative impact on overall turnout. The greater the percentage of young adults in the population, *ceteris parabus*, the lower the rate of turnout. Significantly, this dampening effect is greatest in the high growth quartile of counties. While a standard deviation change in the percentage aged 18–29 tends to reduce turnout by anywhere from 1.4 to 2.1 points in the low, low-to-moderate, and moderate growth counties, the same standard deviation change generates nearly a 3% drop in turnout in high growth locations.

The impact of the relative size of the oldest age cohort varies considerably across the county growth quartiles. The impact of the size of the over 60 population ranges from a high of 1.3 in the lowest growth counties to a low of 0.6% points (per standard deviation increase) in the middling growth locations.

So, the relative size of the oldest age cohort has a strong *positive* impact on turnout in the same counties in which the relative size of the youngest age cohort has the strongest *negative* impact on turnout. From a representational standpoint, these contrary effects reinforce each other. In those places in which the age-specific turnout effects are greatest, the gap between the age of the actual population (of potential voters) and the age of the active electorate will be greatest. To the extent that other demographic, economic, and political variables are associated with age, we should expect to see similar gaps—on the dimensions corresponding to these variables—between the actual population and the voting population. Note also that these gaps between the age of the active electorate and the age of the actual population are occurring in those areas where the population growth is highest, so the counties where these participatory gaps exist will contain increasingly large segments of statewide electorates, a direct sign of their increasing practical importance as time goes on.

These results imply, counterintuitively, that the disproportionate impact of the highly active Baby Boomers will increase as their numbers (relative to the youngest cohort) decrease. The Baby Boomers will have political influence vastly exceeding their actual numbers in those locations where the non-participatory younger cohorts are expanding most rapidly. From a purely political standpoint, this suggests that the temporal impact of the Baby Boom generation on local, state, and national politics has been underestimated. Even during the "out" years—the twilight of the Baby Boom era when the Boomers are well beyond 65—Baby Boomers will be a force to be reckoned with—particularly in those high growth but low participation areas that are, themselves, becoming increasingly important portions of various state electorates.

Results from the pooled cross-sectional analysis

As a last step in our analysis designed to help us summarize our findings and generalize about the impact of our explanatory variables, we pooled our cross-sectional data sets, and controlled for the effect of individual election years with (0, 1) dummy variables. We excluded 1980 for use as the baseline for comparison. We first ran these models without the spatially lagged dependent variable, and the results indicated that there was substantial spatial autocorrelation in the residuals ($I = 0.51$) even after all other explanatory variables were included. Regional clustering remained prominent in the residuals for the unweighted model, with turnout running much higher than model predictions in Maine, Wisconsin, Minnesota, and the lower Mississippi Valley (see Fig. 5). The Border South, running from Appalachia to Oklahoma, stands out as a region that exhibited much lower turnout than the unweighted model predicted. Whether cultural explanations can be counted on

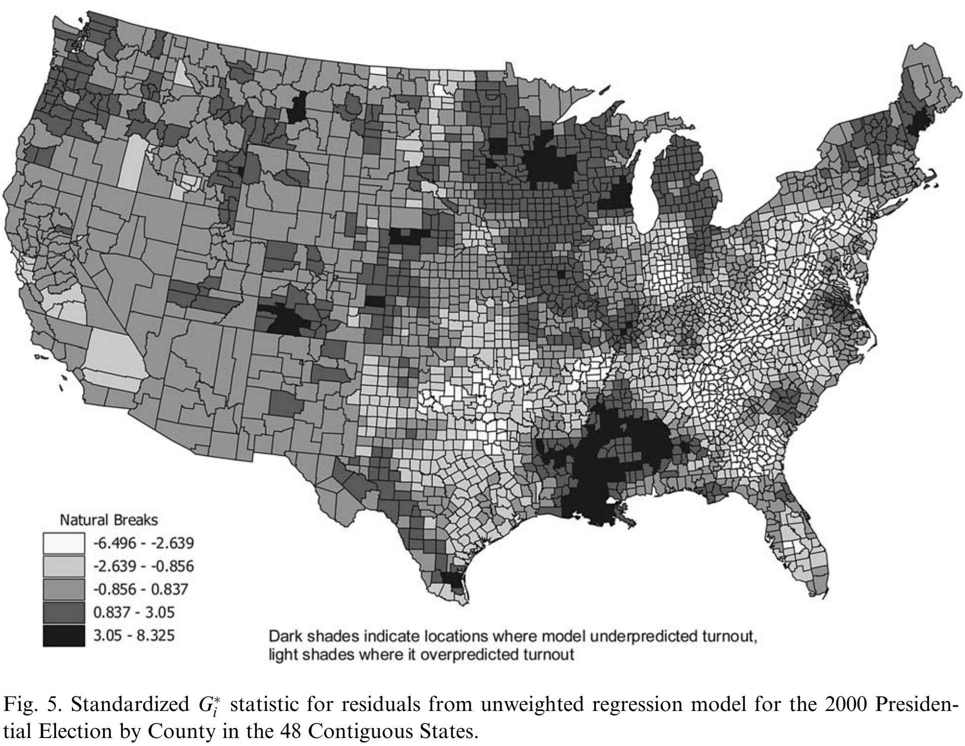

Fig. 5. Standardized G_i^* statistic for residuals from unweighted regression model for the 2000 Presidential Election by County in the 48 Contiguous States.

to explain these patterns is debatable given their wide geographic dispersion. Clearly no singular cultural predisposition can account for these errors over so vast an area.

Our conclusion is that much of the spatial dependency evident from the G_i^* statistics displayed in Fig. 4 has not dissipated simply with the inclusion of the independent variables, alone. However, adding the spatial lag dropped the value of Moran's I across the entire pooled sample to a much more modest −0.12, suggesting that our 40 mile distance criterion for proximity did a reasonably good job accounting for the spatial dependency in the observations.

We also mapped the resulting residuals from the weighted model using the standardized G_i^* in order to identify any remaining clustering of high and low error values, although that map is not presented here. The mapped residuals suggest that there may still be omitted variables that could explain the underprediction of turnout in the Mississippi Delta region, along the Texas border, and in small but still consequential pockets of the upper Midwest. Perhaps in these locations, party mobilization and campaign efforts played a role in activating voters not captured by other variables we have included. Our weighted model also appears to overpredict turnout at scattered locations throughout Kansas and Nebraska and much of Appalachia. Whether these locations can be accounted for through reference to political cultural variation is an intriguing possibility and we remain open to persuasion on the matter.

Substantively, the results of the spatially weighted model (Table 4) show that the increase in the proportion of the eligible population under age 30 is associated with a 1.9% drop in turnout for each standard deviation increase in size. To our amazement, this variable exerts more pressure in a negative direction than education levels do in a positive direction (+1.2). The proportion of those new to the electorate is also a stronger predictor of turnout across counties than race or ethnicity.

As we ponder the challenge of discerning the variable impact of local age distributions across the nation, we cannot forget the complicating factor of population mobility and how it shapes and reshapes the local age cohort mix. Citizens are not permanently fixed to the places where they are born and the fact that there are rather few counties exhibiting both large youthful and elderly populations is very revealing. In the United States, certain phases of the life-cycle are closely linked to residential mobility. At locations where it looks like very little generational change is occurring, it is largely because young people have abandoned the area. Young adults will move away from small towns and rural areas on the Northern Plains, for example, leaving a concentrated elderly population behind. Or the young and upwardly mobile will flock to locations in the Mountain West and Northwest, diluting the elderly proportion of the population at those locations, and stimulating more local generational change than would occur otherwise. Because the nation's counties are highly balkanized by age, that makes the direct effects of our age variables much more influential than their interaction.

While it appears that elderly participation is offsetting the non-participation of the young in the places where both have a pronounced presence, this may not last. Once the Baby Boom generation begins to exit the electorate through death, it is very likely that turnout could drop sharply as the number of post-Boomers entering middle and old age—highly participatory periods of the life-cycle—will be on the decline, just as Generation Y becomes fully eligible to vote but may choose instead to abstain.

Predictably, the African American and Latino populations drop the level of turnout in the pooled cross-sectional analysis (by about one-half percent for every standard deviation increase in size), as does the local percentage of recent out-of-state migrants (see Table 4). The variables capturing the effects of individual election years clearly indicate that county level turnout was well below 1980 levels in every election thereafter. In 1996, though, turnout bottomed out at 8.8 points below 1980. In 2000, the most competitive presidential election in recent US history, turnout still ran six points below 1980. These figures suggest a steady and alarming drift toward electoral demobilization even after controlling for some of the major predictors of participation.

The indicators for state electoral legal structure show that the adoption of early in-person voting laws have had a modest positive impact on turnout across counties. Closing dates that exceed 28 days have had a mildly depressive impact on county level turnout. Motor vehicle registration and election-day registration were not statistically significant influences on turnout in the model presented in Table 4.

Discussion

While all of the points we have made rely upon inferences made from ecological data, we are encouraged that the results we present are not wildly at odds with the large body of survey data on age cohort effects on participation (for example: Rosenstone & Hansen, 1993). Knowing that candidates and parties wage war over turf, and are focused on electorates rather than individuals, our work has tried to extend some of the survey-based generalizations to a geographic level.

What will happen when the current highly active elderly cohort disappears? We suspect that as long as the Depression era voters who are presently dropping out of the electorate are replaced by highly active Baby Boomers now moving into retirement, the impact on turnout may not be highly perceptible. But in the second decade of the 21st century, as the Baby Boom generation fades from view, it is doubtful that the succeeding generations will have anything like the same level of activism when they reach middle and old age. This is when we are likely to see the serious drops in turnout that may make good democrats (small 'd') pine for the days when participation levels were at 52%.

Our results have important implications for candidates, parties and campaign strategy. First, we have seen that places with a large cohort in the 18–29 age bracket have substantially lower turnout than they would have without these populations. This turnout deficit is likely to affect Republicans as much, if not more, than Democrats. It is Republicans who generally win the more affluent, fast-growing suburbs, such as Johnson County, Kansas, and Montgomery County, Texas, where there are legions of young, unregistered voters. Low turnout is not the problem of just a single kind of poor and less educated electorate. Specifically, low turnout is likely to hurt the GOP in fast-growing areas with many upwardly mobile, family-age migrants, who lack established voting histories.

Second, locations with significant concentrations of elderly voters benefit from higher turnout resulting from impressive levels of political activism. To some extent, the high levels of participation among the elderly are capable of offsetting the lack of participation among the young, but consistent with previous research based on survey data, it is the size of the cohort in middle age (40–59) that is responsible for driving high turnout throughout most of the country. Elderly voters are clearly associated with driving high turnout in rural areas of the Midwest, suburbs in the Northeast, and in locations of retirement-age migration such as the Florida peninsula. In places where young residents are moving out, but none are moving in, registration barriers and other institutional hurdles have no relevance to turnout levels because the aging population is already registered.

As strategic targets for campaign mobilization efforts many of these locations of aged concentration are of minimal value. Outside of Florida, turnout remains high in areas with large percentages of retirement-age voters largely because the local populations have been stable or are declining. In the most rural counties, there are not enough voters to warrant an intensive campaign. Finally, these locations contain some of the most habituated voters, among the least inclined to be swayed by campaign efforts. While the elderly electorate will continue to grow as the Baby Boomers reach retirement, it is not clear that any substantial share of it will be "in play."

At the opposite end of the age distribution, however, the vote of those who have only recently become eligible to vote is very uncertain (Plutzer, 2002), both in terms of its participation, and its party loyalty. Generation Y's socially liberal values on issues such as race, gay rights and abortion rights suggests that the Democrats may have an edge in socializing this group of voters. The Democratic Party has increasingly recognized this, and its candidates have competed with considerable success in fast-growing suburban locations that were once ceded to Republicans. The battle is on for the heart of the post-Baby Boom generations, and the party that takes this emerging vote seriously, and learns how to effectively mobilize them, could be in for some big victories at the polls.

References

Abramson, P. R. (1974). Generational change in American electoral behavior. *American Political Science Review*, *68*(1), 93–105.

Abramson, P. R. (1975). *Generational change in American Politics*. Lexington, MA: D.C. Heath.

Abramson, P. R. (1976). Generational change and the decline of party identification in America: 1952–1974. *American Political Science Review*, *70*(2), 469–478.

Abramson, P. R. (1989). Generations and political change in the United States. *Research in Political Sociology*, *4*, 235–280.

Anselin, L. (1988). *Spatial econometrics: methods and models*. Boston: Kluwer.

Braungart, R. G., & Braungart, M. M. (1986). Life-course and generational politics. *Annual Review of Sociology*, *12*, 205–231.

Campbell, A., Converse, P. E., Miller, W. E., & Stokes, D. (1960). *The American voter*. New York: John Wiley and Sons.

Conway, M. M. (2002). *Political participation in the United States* (3rd ed.). Washington, DC: CQ Press.

Dahl, R. (1967). The city in the future of Democracy. *American Political Science Review*, *61*(4), 953–970.

Dahl, R., & Tufte, E. (1973). *Size and Democracy*. Palo Alto, CA: Stanford University Press.

Deufel, B. J. (2002). The Peter Pan Effect: why young people are voting less today. Paper Presented at the Annual Meeting of the Midwest Political Science Association, Chicago, IL, Palmer House Hilton, April 25–28.

Elazar, D. J. (1984). *American Federalism: a view from the States*. (2nd ed.). New York: Harper and Row.

Elazar, D. J. (1994). *The American Mosaic: the impact of space, time and culture on American Politics*. Boulder, CO: Westview Press.

Fotheringham, A. S., Brunsdon, C., & Charlton, M. (2000). *Quantitative Geography: Perspectives on Spatial Data Analysis*. Thousand Oaks, CA: Sage Publications.

Getis, A., & Ord, J. K. (1992). The analysis of spatial association by use of distance Statistics. *Geographical Analysis*, *24*, 189–206.

Gimpel, J. G., & Schuknecht, J. E. (2001). Interstate migration and electoral politics. *Journal of Politics*, *63*(1), 207–231.

Gimpel, J. G., & Schuknecht, J. E. (2003). *Patchwork nation: sectionalism and political change in American Politics*. Ann Arbor, MI: University of Michigan Press.

Glenn, N. D., & Grimes, M. (1968). Aging, voting and political interest. *American Sociological Review*, *33*(4), 563–575.

Goldstein, A., & Morin, R. (2002). Young voters' disengagement skews politics. *Washington Post*, *October 20*, A08.

Goodchild, M. F. (1986). *Spatial autocorrelation*. Norwich, UK: Geo Books.

Griffith, D. A. (1987). *Spatial autocorrelation: a Primer*. Washington, DC: Association of American Geographers.

Highton, B., & Wolfinger, R. E. (2001). The first seven years of the political life cycle. *American Journal of Political Science*, *45*(1), 202–209.

Jennings, M. K. (1987). Residues of a movement: the aging of the American protest generation. *American Political Science Review*, *81*(2), 367–382.

Jennings, M. K., & Markus, G. B. (1988). Political involvement in the later years: a longitudinal survey. *American Journal of Political Science*, *32*(2), 302–316.

Kasarda, J. D., & Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review*, *39*(3), 328–339.

Knack, S. (1995). Does 'Motor Voter' work? Evidence from state-level data. *Journal of Politics*, *57*(3), 796–811.

McDonald, M. P., & Popkin, S. L. (2001). The myth of the vanishing voter. *American Political Science Review*, *95*(4), 963–973.

Miller, W. E., & Shanks, J. M. (1996). *The New American Voter*. Cambridge, MA: Harvard University Press.

Nardulli, P. F. (1995). The concept of critical realignment, electoral behavior and political change. *American Political Science Review*, *89*(1), 10–22.

Nardulli, P. F., Dalager, J. K., & Greco, D. E. (1996). Voter turnout in US Presidential elections: an historical view and some speculation. *PS: Political Science & Politics*, *29*(3), 480–490.

Nie, N., Powell Jr., G. B., & Prewitt, K. (1969). Social structure and political participation: developmental relationships. *American Political Science Review*, *63*(2), 361–378.

Oliver, J. E. (2000). City size and civic involvement in metropolitan America. *American Political Science Review*, *94*(2), 361–374.

O'Loughlin, J., Flint, C., & Anselin, L. (1994). The Geography of the Nazi vote: context, confession and class in the Reichstag Election of 1930. *Annals of the Association of American Geographers*, *84*(3), 351–380.

Plane, D., & Rogerson, P. R. (1994). *The Geographic analysis of population*. New York: John Wiley and Sons.

Plutzer, E. (2002). Becoming a Habitual voter: inertia, resources and growth in young adulthood. *American Political Science Review*, *96*(1), 41–56.

Putnam, R. G. (2000). *Bowling alone: the collapse and revival of American community*. New York: Simon and Schuster.

Rosenstone, S. J., & Hansen, J. M. (1993). *Mobilization, participation and democracy in America*. New York: Macmillan.

Rosenstone, S. J., & Wolfinger, R. E. (1978). The effect of registration laws on voter turnout *American Political Science Review* 72(1), 22–45.

Squire, P., Wolfinger, R. E., & Glass, D. P. (1987). Residential mobility and voter turnout. *American Political Science Review*, *81*, 45–65.

Tam Cho, W. K. (2003). Contagion effects and ethnic contribution networks. *American Journal of Political Science*. 47(2), 368–387.

Timpone, R. J. (1998). Structure, behavior and voter turnout in the United States. *American Political Science Review*, *92*(1), 145–158.

Verba, S., & Nie, N. H. (1972). *Participation in America: political democracy and social equality*. Chicago, IL: University of Chicago Press.

Verba, S., Schlozman, K. L., & Brady, H. E. (1995). *Voice and equality: civic voluntarism in American Politics*. Cambridge, MA: Harvard University Press.

Wolfinger, R. E., & Rosenstone, S. J. (1980). *Who votes?*. New Haven, CT: Yale University Press.

Zukin, C. (2000). Across the generational divide: political engagement, civic and social attitudes. Paper presented at the annual meeting of the American Association for Public Opinion Research, Portland, Oregon, May 18–22.