



Contents lists available at ScienceDirect

Electoral Studies

journal homepage: www.elsevier.com/locate/electstudThe dynamic effects of education on voter turnout[☆]

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ARTICLE INFO

Article history:

Received 22 May 2009

Accepted 26 May 2009

Keywords:

Voter turnout

Education

Political knowledge

ABSTRACT

In this paper I investigate the dynamic relationship between formal education and voter turnout over the past half century. I reframe Brody's puzzle about why rising education levels did not produce higher voter turnout using *The American Voter's* "funnel of causality" to allow for a dynamic relationship between education and turnout. Analyzing survey data from 1952 to 2004, I show that the effect of college education increased starting in 1980s, thereby magnifying the ability of educational attainment to predict turnout. In contrast, education had a constant effect on political knowledge, another common measure of civic engagement. I conclude by evaluating several explanations for these divergent results.

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1. Introduction

The pairing of Campbell et al.'s *The American Voter* (TAV) and Lewis-Beck et al.'s *The American Voter Revisited* (TAVR) affords the scholarly community a dual opportunity. The first opportunity is to appreciate the wisdom of TAV some 48 years after its publication. Indeed, a central theme of TAVR is the remarkable staying power of TAV's conclusions about electoral behavior. The second opportunity, which received less attention in TAVR, is to evaluate the effects of massive social and political changes that have taken place over the half century that elapsed between the publications of the two books. Fortunately, TAV provides a framework for understanding these changes. It is left to contemporary scholars uncover them.

In this paper I investigate the dynamic relationship between formal education and voter turnout. Three decades ago (Brody, R.A., 1978) famously identified a puzzle: education predicts whether individuals will vote, but over time rising levels of education did not increase aggregate turnout. I reframe this puzzle using the "funnel of causality," explain why existing solutions to this puzzle

are unsatisfying, and offer a new solution that allows for a dynamic relationship between education and turnout. Analyzing survey data from 1952 to 2004, I show that the effect of college education increased starting in 1980s, thereby magnifying the ability of educational attainment to predict turnout. In contrast, education had a constant effect on political knowledge, another common measure of civic engagement. I conclude by evaluating several explanations for these divergent results.

2. Social change and the funnel of causality

The insights that emerged from TAV's study of the 1952 and 1956 presidential elections have remarkable staying power, providing TAVR with a firm foundation for understanding the 2000 and 2004 elections. Yet the temporal space between TAV and TAVR represents a massive sweep of modern electoral history. Tremendous economic, social, technological, and political changes have taken place over this 50 year period. This should afford researchers real leverage on some fundamental political science questions. TAV's framework clearly expects that tremendous social changes produce commiserate changes in electoral behavior. The more fundamental these factors – and the more they change – the greater the impact.

It is useful to think about these changes using TAV's "funnel of causality." As outlined in TAV and TAVR, the

[☆] A preliminary version of this paper was presented at the 2008 Shambaugh conference on *The American Voter Revisited* at the University of Iowa. I thank Meghan Condon, Phil Converse, Bill Jacoby, Michael Lewis-Beck, and other conference participants for helpful comments.

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“funnel of causality” is a way to identify the chain of events that leads up to the eventual behavior of interest, usually vote choice or voter turnout. Causes that fall near the narrow tip of the funnel are more immediate and more variable. But because they occur close in time to the outcome of interest, they are also less theoretically interesting and more difficult to distinguish from the outcome. In contrast, those that appear near the wide end of the funnel are more clearly exogenous but also slow to change over time.

Although the funnel metaphor is an effective way to portray the factors that lead to political behavior, its application has been criticized. TAVR acknowledges that variables that appear near the tip of the funnel may easily be endogenous (pp. 26–28). For example, using feeling thermometers toward the candidates to predict vote choice or intention to vote to predict turnout may be criticized as tautological. The relationships may be strong, but the independent explanatory power of these variables is questionable.

To avoid these complications, I instead focus on a factor that occurs extremely early in the funnel: education. Aside from physical characteristics such as race, sex, and age, formal educational attainment is one of the most clearly exogenous factors that predict electoral behavior. In addition, the literature has shown it to be a robust predictor if not the most important determinant of voter turnout. Its predictive power is all the more impressive because it is a fundamentally nonpolitical individual characteristic. Unlike attitudes toward candidates or party identification, education is acquired outside of the political sphere, yet has potential to affect political behavior in important ways.

Moreover, education has undergone the most dramatic aggregate change of any variable that might appear in the funnel. The funnel of causality holds that large-scale changes in factors early in the funnel should result in large-scale behavior changes. At the aggregate level, one would expect that massive increases in a variable that holds such an important position early in the funnel's timeline would be seen quite readily in changes electoral behavior.

3. Education and voter turnout

Rising levels of formal education in the electorate should have translated to changes in voter participation. From his vantage point in 1972, Converse (1972) surmised that aggregate education levels were moving in a “long-term” upward direction and that the trend was “irreversible.” Unlike so many variables that rise and fall over time, in postwar America it was all but guaranteed that each generation would be more educated than the one before it.

To demonstrate this point, I track reported levels of educational attainment in the American National Election Study (NES) in each presidential election survey from 1952 to 2004, the period bracketed by TAV and TAVR. As Fig. 1 demonstrates, in 1952 the vast majority of the public ended its educational training at high school graduation. Roughly 85% of respondents had attained only a high school education and less than 10%

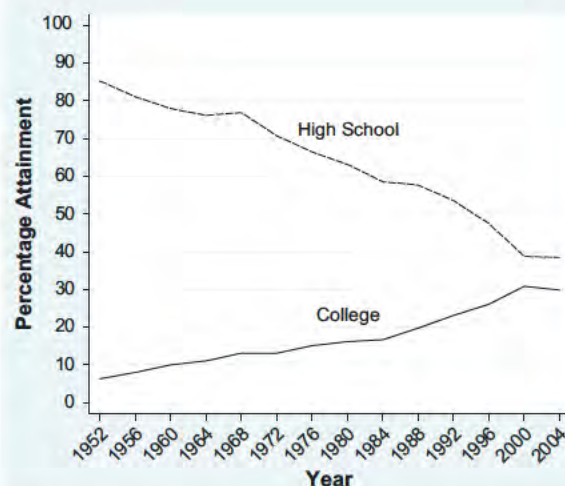


Fig. 1. Formal educational attainment 1952–2004. Source: American national election studies.

had earned a college degree. By 2004 those with only a high school degree comprised just 40% of the sample and almost one-third was college educated. Although not shown in the figure, the share of the public with less than a high school diploma declined just as dramatically while the share with post-graduate education similarly rose from one election year to the next.¹ It is difficult to imagine a variable that is so clearly exogenous to politics, falls so early in the funnel of causality, and yet has transformed so radically over time. In retrospect, it is surprising that scholars have identified so few political consequences from such an impressive sea change in the American electorate.

Although educational attainment occurs largely outside the political world, scholars have nonetheless identified important ways in which education affects political action. Among these “spillover” effects, none is more central than the relationship between education and voter turnout. In study after study conducted over the last five decades, researchers find a robust positive relationship between individuals’ levels of education and their likelihood of voting.

TAV reported that, aside from peculiarities in the South in the 1950s, “no other social characteristic commonly employed in our research bears such a strong relationship to turnout in presidential elections” (477). In an early review of the literature, Converse (1972, 324) summarized that in explaining voter turnout, “education is everywhere the university solvent, and the relationship is always in the same direction.” In their seminal study, *Who Votes?*, Wolfinger and Rosenstone first pointed scholars to the “core finding” about the “transcendent

¹ Taking a longer time horizon with different data paints an even more dramatic evolution. Between 1940 and 2007, the National Center for Education Statistics reports that the percentage of the over-25 public with at least a high school education rose from 25% to 86% and those with a college degree increased from 5% to 29%.

power of education” (1980, 102). Analyzing large samples from the 1972 Current Population Study, they showed that while several attitudinal and demographic variables influenced the likelihood of voting, the most influential was education.

Since those early days, numerous studies have reinforced the strong relationship between educational attainment and political participation (e.g., Miller, 1992; Miller and Shanks, 1996; Rosenstone and Hansen, 1993; Verba et al., 1995). As Verba et al. summarize some 43 years after the publication of TAV, “educational attainment is, in fact, the single most potent predictor of an adult’s political activity” (2003, 13). This conclusion is echoed in TAVR. TAVR showed that while only 51% of those with a junior high education reported that they had voted in the 2004 presidential election, 92% of the college educated did so. They concluded that, “In more ways than one, effective citizen participation depends on the operation of the nation’s educational system. Moreover, education is the key ingredient of any relationship between socioeconomic status and voting turnout” (Lewis-Beck et al., 2008, 102).

As foundational as this result has been, there have been challenges to its validity. One prominent critique contends that relative rather than absolute education levels are most important (Nie et al., 1996; Tenn, 2005). Because education is the key to success in the labor force, the argument goes, one’s education is only meaningful in a comparative sense. A related critique of the conventional view is the apparent relationship between education and turnout is in fact spurious. Advocates of this theory assert that education is a proxy for preadult characteristics that in fact affect participation levels (Kam and Palmer, 2008). At the same time, several studies account for simultaneity and omitted variables, showing that absolute levels of education do in fact influence voter participation. Dee (2004), Milligan et al. (2004), and Sondheimer (2006) all make careful use of instrumental variables, but still find that education increases turnout. While admitting that this debate remains unsettled at the moment, there is a sizable body of both historical studies and more sophisticated contemporary analyses pointing to a robust relationship between education and turnout.

The question of why the relationship exists is yet another matter. The education–participation link has spawned a larger literature than can be fully appreciated here. (For a review of the literature see Emler and Frazer, 1999). For brevity’s sake, I suggest that the myriad explanations for the relationship boil down to three rough categories. First, education provides people with skills to make sense of the political world. Knowledge and critical thinking skills facilitate greater understanding of politics, which often demands more abstract thought than does everyday activity (Delli Carpini and Keeter, 1996). Second, it makes for easier navigation of voter registration requirements and other impediments to voting (Highton, 2004; Powell, 1986; Timpone, 1998; Verba et al., 1995; Wolfinger and Rosenstone, 1980). Third, classroom instruction and the social networks in which higher educated people are situated socialize a sense of civic duty and expose them to

elite recruitment efforts (Campbell et al., 1960; Rosenstone and Hansen, 1993; Wolfinger and Rosenstone, 1980).

Without dwelling too much on these specific arguments, it is clear that there are multiple pathways through which formal education may influence the likelihood of voting. While separating these mechanisms from one another is a valuable enterprise, that is not my intention. Here the focus is the strength of the relationship between education and turnout over time. Although it would seem that this relationship is well documented at the individual level, how that relationship varied over time is not.

4. A new solution to Brody’s puzzle

There seems to be a contradiction between education’s effects at the individual and aggregate levels. If education explains individual turnout decisions, then an aggregate increase in educational attainment in the electorate ought to boost overall turnout levels. Realizing that turnout will vary somewhat between elections due to factors specific to those campaigns, logic suggests that the secular growth of education documented in Fig. 1 would nonetheless have substantial, long-term positive effects on voter participation.

Yet this clearly did not occur. As Fig. 2 displays the familiar trend in presidential election turnout between 1952 and 2004. Voter participation has, if anything, declined slightly in the postwar period. Setting aside the moderate spikes in 1992 and 2004, overall turnout fell somewhat. The relative stability of turnout in Fig. 2 contrasts dramatically with the growth of education levels in Fig. 1.

It was precisely this inconsistency that led Brody (1978) to identify the well-known “puzzle of political participation in America.” In his view, a breakdown in inferential logic took place. Scholars already knew that (1) education strongly predicts voter turnout and that (2) aggregate education levels increased dramatically, yet it did not follow that (3) voter turnout increased, even though registration barriers also liberalized.

In the ensuing years scholars searched vigorously for solutions to Brody’s puzzle. All agreed that increasing education should increase turnout, but it did not. Logic suggested that some other factors must be depressing turnout at almost equal rate that education was elevating it. Scholars identified many factors that exerted downward pressure on voting participation. Among these were the decline in party identification, the decrease in elite mobilization, generational replacement of more participatory cohorts with less participatory ones, a drop in church attendance, declining efficacy, the growing popularity of television and other technologies, geographic mobility, and others (Abramson and Aldrich, 1982; Miller, 1992; Miller and Shanks, 1996; Putnam, 2000; Rosenstone and Hansen, 1993; Shaffer, 1981; Teixeira, 1992).

Individually these explanations are quite plausible, but together they are unsustainable. Each theory accounts for the failure of turnout to rise too neatly. Each author is able to marshal enough negative force in particular variables to perfectly offset the positive effects of education. These “just so” arguments seem a bit too tidy to fully account for

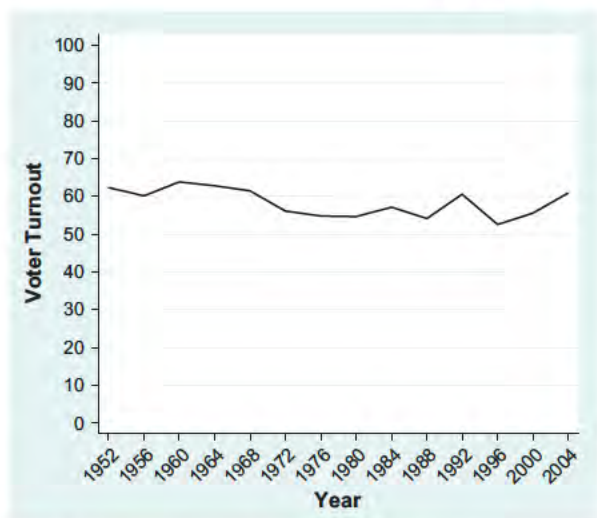


Fig. 2. Turnout in presidential elections 1952–2004. Source: Michael McDonald (http://elections.gmu.edu/voter_turnout.htm).

Brody's puzzle. Combining all of them into a comprehensive account would overwhelm the effects of education, driving turnout dramatically downward, which would be inconsistent with the observed trend.

What almost no scholars have considered is that education might have a different sized *effect* on voter participation in 2004 than it had in 1952. There is little reason to believe that the influence of education has been constant, yet existing work assumes as much.

There are two reasons why the impact of education would have changed, one dealing with the “supply” of education itself, and the other dealing with “demand” factors outside the classroom. First, the content of the curriculum is dynamic. Students are simply taught different facts and skills, in a different style, than half a century ago. So the supply of knowledge and abilities provided by formal education might have changed. Second, politics has changed. Voter registration barriers have lowered, new issues such as affirmative action and stem cell research have emerged, and the news environment has fundamentally transformed. So the demands placed on people to vote might have changed. In short, the civic value of education almost certainly varied due to changes both in education itself (supply) and in the requirements placed on people by politics (demand). While I will speculate about a more detailed set of explanations below, for the moment it is useful to classify them broadly as being one of these two theoretical categories.

There is in fact preliminary evidence that education's effect has not been constant over time. Specifically, Miller and Shanks' (1996) generational analysis suggests the relationship between education and turnout has evolved over the years. They find stronger correlations in the earliest and latest generations they studied. Specifically, in pre-New Deal cohorts they find that the less educated were especially unlikely to vote and in post-New Deal cohorts that those with college educations were especially likely to vote. The Miller

and Shanks data demonstrate that education has the ability to discriminate voters and nonvoters more in some eras and than others.

We should also entertain the possibility that education does not necessarily affect all civic outcomes equally. For example, generational declines in turnout were not mirrored in pre-election campaign activities such as attending a meeting or working for a candidate. They were strictly limited to turnout on Election Day (Miller, 1992). To take another example, consider political knowledge. Although education, factual knowledge, and participation tend to go together (Delli Carpini and Keeter, 1996), education might not have a dynamic effect on knowledge.

Consider Fig. 3, which shows the proportion of correct responses to the longest-running knowledge question in the NES: which party holds the majority in the U.S. House of Representatives.² Factual knowledge items are frequently used to measure political sophistication and this particular item is perhaps the most common of the knowledge indicators (Zaller, 1992). There are two things to note about this figure. First, since half of respondents would get the correct answer by guessing alone, the mean rate of about 60% of this time period suggests that the public is not especially knowledgeable. Second, although the line wavers somewhat around periods of political change, such as when the Republicans won control of Congress in 1994, the overall trend is either flat or slightly downward, similar to that for voter turnout. Massive increases in educational attainment also failed to raise levels of political knowledge in the electorate.

In the following section I test whether the effects of education on knowledge are dynamic, as they may be for turnout. This comparison is useful because of the differing nature of these two indicators of civic engagement. Unlike turnout, for political knowledge it seems more likely that “supply” rather than “demand” would be the mechanism behind a changing relationship with education. Even if the substance of politics became more challenging (demand), it is not obvious how that would influence the simple task of knowing which party controls Congress. In contrast, it is quite possible that changes in the educational curriculum (supply) could influence political knowledge. Thus, testing for a dynamic effect of education on knowledge is really an examination of demand-side explanations. If this test yields null results – that is, an essentially static relationship over time – it would point to supply-side factors as the most viable explanations.

5. Data and analytic approach

I begin by examining temporal changes in the relationship between education and turnout. For each presidential election year between 1952 and 2004, I estimate a conventional logit model to explain voter

² The pre-election item I use has been asked in every presidential election between 1960 and 2004. In contrast, a similar item asked in the post-election survey exists from 1952 to 1996.

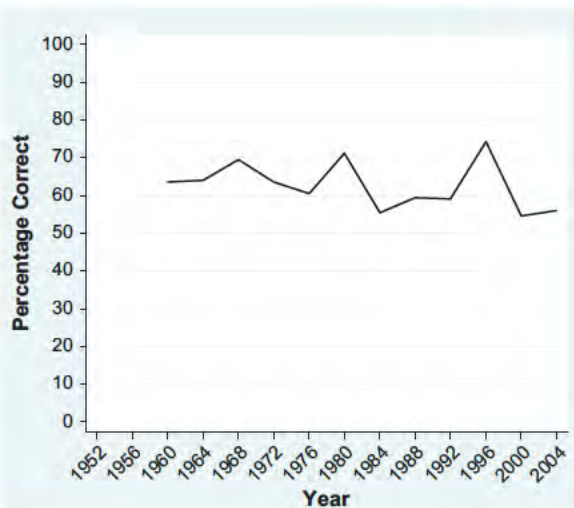


Fig. 3. Knowledge of which party has majority in congress. Source: American national election studies.

turnout.³ By comparing results across the 14 models, it is straightforward to determine if effects are dynamic or static. If the effects are static over this 52 year period, one would observe relative constancy in the coefficients estimating the relationship between educational attainment and the likelihood of voting. In contrast, systematic changes in coefficients would reflect dynamic effects.

Educational attainment is operationalized as three dummy variables representing (1) those with at least a college education, (2) those who had done some college coursework, and (3) those with just a high school education. Those with less than a high school diploma are the reference category. There are several reasons for this approach. First, a categorical measure is necessary because the cumulative NES does not include a continuous measure of years of education throughout the entire period. Second, categorical dummy variables allow me to estimate a nonlinear and dynamic relationship without imposing many restrictive assumptions about the precise functional form. Third, and most importantly, I suspect that there are qualitative, discrete differences between various stages of education. In particular, the shift from high school to college should represent a sharp change in experiences, networks, and curriculum as students encounter new people, learn additional material, and often move away from living with parents. Dummy variables allow for these step increases to reveal themselves. This approach mimics Bartels' (2000) analysis of partisanship's effect on vote choice in which he

³ To be more precise, the dependent variable is self-reported turnout in the presidential election from the post-election wave of the NES. There are concerns that turnout is overreported (Burden, 2000) and that misreports are more likely among the highly educated (Anderson and Silver, 1986), but these problems cannot be easily overcome for the long time series analyzed here.

uses dummies for each category of party strength to predict voting decisions. Any election-specific factors that increase or decrease the overall level of voter turnout will be picked up by varying constants across years.

To minimize the possibility of spurious results, I control for a standard array of demographic variables. Although many psychological variables might also influence voter turnout, I wish to focus on factors that are clearly exogenous, occur early in the funnel of causality, and may be unambiguously measured in an objective, consistent fashion over the half century of the NES. These controls include age and age squared to represent the combination of life cycle, generational, and cohort influences on turnout. My approach does not distinguish among these three mechanisms, but it does avoid the possibility that education appears to influence turnout merely because education levels are correlated with age. In addition, I include dummy variables to account for respondent sex, race, and family income percentiles.⁴ Surprisingly, inclusion of these controls has little effect on the substantive conclusions about education.

These turnout results then set the stage for an analysis of political knowledge. I estimate parallel models in which the dependent variable is whether or not the respondent correctly names which party holds a majority of seats in the House of Representatives. Again dummy variables for levels of educational attainment are used to evaluate how education affects political knowledge. All of the same control variables are also included. As before, the constant term captures any general factors that might increase or decrease knowledge of party control throughout the electorate. These include factors such as whether there is divided government and whether there was recently a switch in party control (Bennett and Bennett, 1993).

6. Results

Fig. 4 presents the main results, illustrating how the effects of educational attainment on turnout varied between 1952 and 2004. The vertical axis indicates the size of the coefficient – the “effect” if one believes the model is correctly specified – of each of the educational variables on the likelihood of casting a vote for president. The full model results are available in Appendix A for readers who wish to see how the control variables behaved. I discuss the effects of some of the control variables below, but the important findings are about education.

The trends indicate two distinct periods, divided roughly at the midpoint of the NES time series. Before the 1980s, the value of a college degree was no greater than simply taking some college courses. Both coefficients hovered around 1.5 and were not statistically

⁴ To allow for inflation over time, I use dummy variables for family incomes in the zero to 16th percentiles, 17th to 33rd percentiles, 34th to 67th percentiles, and 68th to 95th percentiles. Those with incomes above the 95th percentile are the reference category.

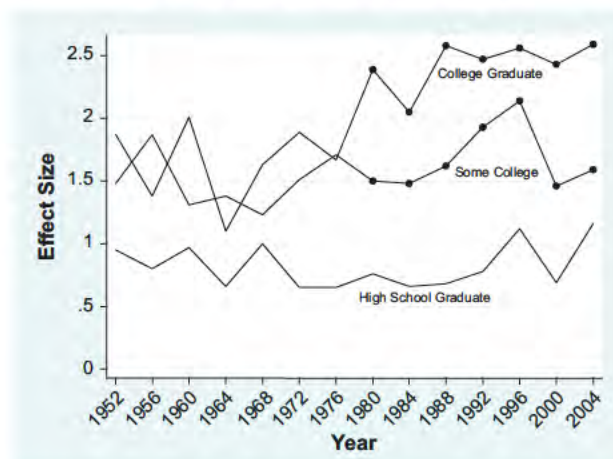


Fig. 4. Effects of education on voter turnout. Note: All of the points are statistically different from zero at $p < .05$. Circles indicate years in which the effects of college education and some college education are significantly different from one another. Logit models include controls for age, age squared, sex, race, and family income. Full results are found in Appendix A.

distinguishable from one another. Translating this effect into simulated probability, a respondent with less than a high school education and a 50% chance of voting became 80% likely to vote if he or she merely took college courses or completed of a full bachelors degree. This changed after 1980 when the two lines separate. The value of some exposure to the college curriculum remains roughly where it was during the first half of the time series (aside from a rise in 1992 and 1996), but the effect of a full college degree increases dramatically. The college effect becomes statistically separable from the other coefficients, as indicated by the circles on the lines. Whereas the effect of some college shows only minimal signs of increase in the 1990s, the effect of a full undergraduate degree rises dramatically from the mid-1980s onward.

The value of a high school education is remarkably constant. Its coefficient remains stable around 1.0 during the entire 50 year period. All else constant, a respondent with a 50% chance of voting becomes 70% likely to do so with the acquisition of a high school education. Because the value of high school is stable, the value of a college degree not only separates from the value of some college education but also high school and anything less than a full high school degree (the reference category).

The dynamic results for education generally contrast with those for other explanatory variables in the models. Some, such as income, display relatively consistent effects over time. For example, those in the lowest income bracket are less likely to vote in every election, and their participatory disadvantage does not consistently rise or fall between 1952 and 2004. When control variables show dynamics, it is generally toward smaller not larger effects. For example, we observe the gradual disappearance in the higher voting rates of men over women and whites over blacks in the first few elections in the time series. It is only education whose ability to discriminate voters and nonvoters grows.

There are two ways in which the analysis might be expanded. First, the models do not account for voter registration. Since education has been shown to affect turnout at least partially through registration, a full accounting would consider both steps. About nine of out every 10 registrants is already captured by examining voters, which limits the variation available for analysis. Second, because of the rising levels of education in the electorate, one might wish to evaluate the effects of post-graduate coursework on turnout. However, fewer than five percent of NES respondents report having graduate degrees, and the number is miniscule in the early years of the cumulative file. In separate analyses in which I included a dummy for post-graduate degrees, I found no significant differences between those respondents and college graduates in any year. For now it seems that the bachelor's degree is causing the step increase in turnout.

As a contrast to the effects of education on turnout I now estimate models evaluating how education affects political knowledge, specifically which party controls the House of Representatives. I demonstrated above that knowledge of the majority party and voter turnout followed similar aggregate trends over time, but we find that their relationships with education do not. Fig. 5 displays the effects associated with each level of education on the likelihood of correctly answering which party holds a congressional majority. In contrast with turnout, here are no obvious net changes in the effects of education over the period from 1960 to 2004. Moreover, the effects of college education and some college do not separate significantly in any of the years. The full model results, which are available in Appendix B, do not show dynamic effects for control variables either. For example, men are more likely to answer correctly than women to a similar degree in each of the models. More important here is that while the effects of education on

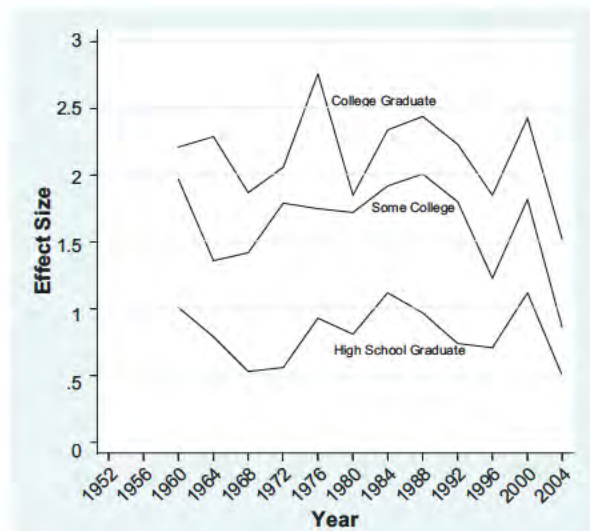


Fig. 5. Effects of education on knowledge of congressional majority. Note: All of the points are statistically different from zero at $p < .05$. Circles indicate years in which the effects of college education and some college education are significantly different from one another. Logit models include controls for age, age squared, sex, race, and family income. Full results are found in Appendix B.

turnout are dynamic, the effects of education on knowledge are static. Education becomes a more powerful predictor of voter participation starting in the 1980s whereas education discriminates between the knowledgeable and unknowledgeable no more, and perhaps even less, in the latter half of the time series.

In summary, a college education packs a greater participatory punch in the Clinton and Bush years than it did under Eisenhower and Nixon. Knowing how much education a person had acquired in the era of the TAV told researchers a great deal about the likelihood that an individual would vote; in the era of TAVR it tells them even more.

The divergence of the turnout and knowledge results is useful because it allows us to dismiss some potential explanations for why education's effect grew. In particular, it tilts our explanation away from demand-side accounts that emphasize changes in the political environment. If education increased in value because politics became more complex, it would show increasing effects not just for turnout but for a variety of other measures of political engagement including factual knowledge. Because education has a dynamic effect on turnout but not knowledge, we should turn our focus to supply-side explanations that address the changing nature of education over the last 50 years.

7. Possible explanations

Answering why exactly college education has become a stronger predictor of turnout, and why 1980 marks the approximate turning point, must at this point remain speculative. Let us entertain several hypotheses. Although I

do not provide direct tests of them here, several can be logically dismissed, providing guidance for future research on this topic.

First is the notion that the results are something of an artifact of declining turnout. When turnout falls, peripheral voters drop out of the active electorate. These voters tend to be located lower on the socioeconomic ladder and on average would have less education. By this account, turnout would have fallen for other reasons than education, and the educational differences between voters and nonvoters would result as a by-product of the shedding of less engaged citizens. However appealing, this "artifact hypothesis" is suspect. There is no obvious relationship between turnout levels in Fig. 2 and the effects of education in Fig. 4. When turnout rose in 1992 and 2004, education should have become less potent, and when it fell in 1968 and 1996, its effects should have increased. Instead we see that college education became more important in the 1980s despite the ups and downs of overall turnout. Finally, knowledge of party control appears to have followed a similar trajectory to turnout, yet the effects are different.

A second hypothesis is that absolute formal education was never the powerful predictor that the literature suggests, but that relative education is what matters. By this account, however, the civic value of a college education should have declined not risen. As the share of the electorate with college degrees increased, relatively speaking the typical college graduate saw less advantage. Although more attention ought to be paid to relative educational attainment in predicting individual participation, it does not appear that the theory has much ability to explain the increasing influence of college on turnout over time.

Third, and related, we must seriously consider the possibility that education's effect is spurious. Rather than the value added by college itself, perhaps it is simply the type of person who attends and graduates from college that makes them more likely to vote. College graduates tend to come from families that are more participatory, educated, and have higher levels of socioeconomic status. The spuriousness hypothesis is challenged by those who show direct effects of college curricula (Hillygus, 2005) and participation in campus activities including political discussion (Klofstad, 2007), even after controlling for pre-college attributes (see also Jennings and Stoker, 2008). If we nonetheless conclude that college lacks any civic value, one must go back a step in time and explain why pre-college indicators became more powerful predictors of voter turnout in the 1980s. The charge of spuriousness, if valid, pushes scholars even more deeply into the funnel of causality.

Fourth, perhaps education became more valuable because politics got harder. In simpler times, the argument goes, college education had only modest additional value in negotiating the relatively few and often easily understood issues that divided candidates and facilitated voter choice. Knowing how the presidential candidates stood on such digestible issues as race and communism in the 1950s was adequate. But in the 1960s and 1970s more difficult issues – from Vietnam to tax policy to environmental regulation and post-Cold War foreign

policy – were more challenging for unprepared voters. The multiplication of issues and greater technicality of many of the new policy debates could have made college education more useful in digesting the expanding menu of issues and making an electoral decision. Although the electorate moved up the Levels of Conceptualization ladder over the past 50 years (TAVR), the rise was not steep or widespread enough to keep up with the new demands put on voters. This demand-side explanation is further challenged because education does not differentiate the knowledgeable from the ignorant any better in 2004 than it did in 1960.

Fifth is the idea that avoiding politics got easier. As Prior (2007) has argued, in the 1960s there were relatively few media choices and exposure to the nightly television news broadcast, which provided the basic knowledge necessary to facilitate participation, was quite expansive. The rise of cable television and later the Internet allowed those without an inherent interest (and I might add skills) in politics to seek out entertainment rather than news media. Those who “dropped out” of hard news consumption would have been disproportionately less educated, while those who took advantage of the expanded news offerings on cable and elsewhere were more likely to be college educated. As enticing as this story is, it does not square with the fact that the effects of education on knowledge are flat over time. An obvious consequence of opting out of politics should be lower levels of knowledge, especially when party control changed in the mid-1990s.

Sixth, scholars ought to give more attention to the evolution of the educational curriculum (Niemi and Junn, 1998). Not all college educations are equal. Although the data are scarce on this point, it would seem plausible that either high school civics curricula became less mobilizing or college curricula became more so. While the exact transition point is difficult to identify, about a generation ago college became the stage at which crucial skills, knowledge, networks, and socialization were provided to encourage voter participation. Changes in curriculum are tied to the changing composition of postsecondary institutions in which students enrolled. Galston (2004) and Niemi and Smith (2001) place the blame on high school curricula. However, the timing of the changes in these curricula, particularly their improvement in the 1990s, does not fit neatly with the patterns in turnout.

Future work should investigate further the differences among colleges and universities. Political scientists seldom acknowledge that the educational experience is quite varied for students in different institutions, although years of research in education policy has demonstrated the importance of these differences (see Pascarella and Terenzini, 2005).⁵ To take two examples, over the last 50 years a larger portion of college students

found themselves at public rather than private institutions and the enrollment of women in college has risen dramatically, passing that of men. While this line of thinking needs more scrutiny, my results are challenging because education does not show similar effects in the realm of political knowledge as it does in political behavior. It would have to be possible for curricular changes to affect different forms of engagement differentially.

The final mechanism has to do with residential mobility. Over the 50 years between TAV and TAVR, Americans became much more likely to move from one community to another. Although the educated are somewhat more likely to have moved recently, Squire et al. (1987) suggest that people with college educations are also less likely to be deterred by registration requirements in their new communities. As they put it, “mobility accentuates the impact of education...on turnout” (55). Since the educated are better able to overcome registration requirements, greater mobility might have expanded the participatory gap between the more and less well educated. This hypothesis focuses on the demand side of the equation, but its leverage comes from being able to explain why turnout but not knowledge shows dynamic effects.

8. Conclusion

In this paper I have offered a new solution to the puzzle of political participation identified by Brody over three decades ago. Rather than follow the literature in a hunt for the factors that have offset the gains in turnout predicted by rising levels of formal educational attainment, I have suggested that the effects of education on turnout are dynamic. I demonstrated that education has become a more powerful predictor of civic participation, discriminating more between voters and nonvoters in the era of TAVR than it did in the era of TAV. This was not true for political knowledge; education was no better at identifying those who knew which party controlled the House in the 2000s than it was in the 1960s. While respondents with less than high school education were always less participatory than those with more education, beginning in the 1980 election it appears that the college educated broke away from those with only some college training. The civic value of college education grew at that point and has remained distinct from other educational levels ever since. Granting that the depressant effects of generational change, the decline of mobilization, and weakening partisanship have worked against education in explaining overall turnout levels, the puzzle of participation is solved more completely when one realizes that the gap between the educational “haves” and “have nots” have grown over time. Precisely why college and high school graduates drifted apart civically over the past 50 years remains a question for further inquiry, and I have provided several explanatory mechanisms that deserve additional attention.

⁵ An exception is Converse and Schuman's (1970) study of attitudes toward the Vietnam War. They found that graduates of large, high quality institutions were most dovish while those from smaller colleges tended to be more supportive of the war.

Appendix A. Logit models of voter turnout 1952–2004

	1952	1956	1960	1964	1968	1972	1976	1980	1984	1988	1992	1996	2000	2004
College graduate	1.87 (.42)	1.38 (.31)	2.01 (.56)	1.10 (.30)	1.63 (.31)	1.89 (.20)	1.67 (.26)	2.39 (.33)	2.05 (.29)	2.58 (.30)	2.47 (.29)	2.56 (.36)	2.43 (.39)	2.59 (.53)
Some college	1.48 (.32)	1.87 (.29)	1.31 (.37)	1.38 (.29)	1.23 (.31)	1.51 (.20)	1.71 (.23)	1.49 (.27)	1.48 (.25)	1.62 (.25)	1.93 (.25)	2.14 (.34)	1.46 (.36)	1.59 (.49)
High school	.95 (.16)	.80 (.15)	.97 (.22)	.66 (.17)	1.00 (.18)	.65 (.14)	.65 (.18)	.76 (.23)	.66 (.21)	.68 (.21)	.78 (.22)	1.12 (.31)	.69 (.35)	1.16 (.47)
Age	.15 (.02)	.10 (.02)	.16 (.04)	.12 (.03)	.13 (.02)	.09 (.02)	.12 (.02)	.11 (.02)	.10 (.02)	.10 (.02)	.06 (.02)	.06 (.02)	.06 (.02)	.03 (.03)
Age ²	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.001 (.000)	–.0002 (.000)	–.0001 (.000)	–.0003 (.000)	–.0000 (.000)
Male	.55 (.14)	.48 (.13)	.59 (.18)	.13 (.14)	.05 (.14)	.23 (.11)	.31 (.12)	.06 (.14)	–.18 (.12)	–.07 (.13)	–.19 (.12)	–.12 (.14)	.06 (.14)	–.26 (.18)
Black	– 1.49 (.20)	– 1.16 (.21)	– 1.22 (.26)	–.25 (.21)	–.05 (.22)	.03 (.17)	.22 (.20)	.18 (.21)	.12 (.18)	–.01 (.18)	–.14 (.17)	.07 (.21)	.56 (.24)	.08 (.23)
Family income 0–16 %ile	– 1.53 (.62)	– 1.33 (.35)	– 1.60 (.79)	– 1.01 (.37)	– 1.45 (.52)	– 1.06 (.36)	– 1.65 (.42)	– 1.13 (.41)	– 1.69 (.40)	– 2.44 (.77)	– 1.31 (.40)	– 1.97 (.63)	– 1.56 (.46)	– .84 (.39)
Family income 17–33 %ile	–1.08 (.62)	–.72 (.33)	–1.30 (.78)	–.49 (.36)	–1.34 (.50)	–1.00 (.36)	–1.23 (.40)	–.61 (.41)	–1.07 (.40)	–2.02 (.77)	–.71 (.39)	–1.89 (.63)	–.75 (.45)	–.49 (.39)
Family income 34–67 %ile	–.69 (.62)	–.27 (.32)	–.68 (.77)	–.02 (.35)	–.70 (.49)	–.67 (.34)	–.86 (.40)	–.40 (.39)	–.87 (.38)	–1.54 (.76)	–.28 (.38)	–1.35 (.61)	–.80 (.44)	.05 (.38)
Family income 68–95 %ile	–.57 (.61)	–.13 (.33)	–.53 (.76)	–.17 (.35)	–.32 (.50)	.03 (.35)	–.58 (.40)	–.11 (.40)	–.46 (.39)	–1.26 (.76)	.31 (.39)	–.79 (.62)	–.20 (.46)	.48 (.41)
Constant	– 2.50 (.88)	– 2.18 (.69)	– 2.84 (1.19)	– 2.51 (.73)	– 2.37 (.81)	– 1.68 (.53)	– 2.28 (.61)	– 2.70 (.67)	– 1.72 (.62)	– 1.44 (.91)	– 1.65 (.64)	– 1.23 (.90)	– 1.76 (.76)	–.98 (.86)
N	1558	1677	1100	1392	1349	2201	1760	1256	1765	1606	2013	1395	1291	943
Log likelihood	–734	–839	–431	–670	–657	–1151	–907	–647	–876	–809	–919	–647	–614	–481

Note: Cell entries are logistic regression coefficients with standard errors in parentheses. Bold coefficients are significant at $p < .05$.

Appendix B. Logit models of congressional majority knowledge 1960–2004

	1960	1964	1968	1972	1976	1980	1984	1988	1992	1996	2000	2004
College graduate	2.21 (.38)	2.29 (.32)	1.87 (.30)	2.06 (.31)	2.76 (.27)	1.85 (.31)	2.34 (.26)	2.44 (.27)	2.23 (.26)	1.85 (.35)	2.43 (.41)	1.52 (.48)
Some college	1.97 (.31)	1.36 (.23)	1.42 (.26)	1.79 (.28)	1.75 (.22)	1.72 (.28)	1.92 (.24)	2.01 (.25)	1.80 (.24)	1.23 (.32)	1.82 (.40)	.86 (.47)
High school	1.01 (.18)	.79 (.16)	.53 (.17)	.56 (.19)	.93 (.18)	.81 (.23)	1.12 (.22)	.97 (.22)	.74 (.22)	.71 (.30)	1.12 (.39)	.50 (.46)
Age	.03 (.03)	.04 (.02)	.09 (.02)	.06 (.02)	.06 (.02)	.08 (.02)	.08 (.02)	.09 (.02)	.06 (.02)	.03 (.02)	.02 (.02)	.008 (.02)
Age ²	–.0001 (.0003)	–.0002 (.0002)	–.001 (.002)	–.0004 (.0002)	–.0003 (.0002)	–.001 (.0002)	–.001 (.0002)	–.0005 (.0002)	–.0003 (.0002)	–.00004 (.0002)	.00002 (.0002)	.0001 (.0002)
Male	.86 (.15)	.62 (.13)	.53 (.13)	.95 (.15)	1.15 (.12)	.93 (.15)	.57 (.11)	.89 (.12)	.77 (.11)	.43 (.14)	.89 (.12)	.35 (.14)
Black	– 1.33 (.28)	–.75 (.20)	–.44 (.21)	.14 (.24)	–.03 (.20)	–.75 (.20)	–.38 (.17)	–.31 (.18)	–.83 (.16)	–.52 (.19)	–.05 (.20)	–.02 (.20)
Family income 0–16 %ile	– 1.31 (.52)	–.83 (.33)	–.33 (.39)	–.85 (.46)	– 1.43 (.36)	–.70 (.37)	–.99 (.31)	–.96 (.44)	– 1.45 (.33)	– 1.16 (.45)	–.49 (.33)	–.66 (.31)
Family income 17–33 %ile	–.92 (.50)	–.45 (.32)	–.22 (.37)	–.40 (.47)	–.97 (.34)	–.02 (.37)	–.44 (.30)	–.70 (.44)	–.71 (.32)	–.84 (.45)	–.38 (.31)	–.53 (.30)
Family income 34–67 %ile	–.44 (.49)	–.33 (.31)	–.08 (.36)	–.32 (.43)	–.71 (.33)	.17 (.35)	–.28 (.27)	–.41 (.42)	–.53 (.30)	–.45 (.43)	–.20 (.30)	–.30 (.28)
Family income 68–95 %ile	–.45 (.48)	–.28 (.31)	.22 (.37)	.21 (.44)	–.31 (.33)	.36 (.36)	–.28 (.28)	–.06 (.42)	–.09 (.30)	–.06 (.44)	.02 (.30)	–.13 (.29)
Constant	–1.16 (.94)	–1.23 (.66)	– 2.09 (.71)	– 2.24 (.72)	– 2.42 (.57)	– 2.31 (.67)	– 3.18 (.55)	– 3.78 (.68)	– 2.72 (.58)	–.70 (.77)	– 2.55 (.70)	–1.04 (.76)
N	1097	1386	1305	1068	1754	1256	1722	1608	2011	1395	1291	943
Log likelihood	–589	–807	–725	–600	–955	–631	–1031	–871	–1085	–689	–785	–599

Note: Cell entries are logistic regression coefficients with standard errors in parentheses. Bold coefficients are significant at $p < .05$.

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