

An Environmental Education: How the Education Realignment Polarized Congress on the Environment

Joel B. Kersting, PhD Candidate, Syracuse University, jbkersti@syr.edu

Abstract: Despite being an issue that used to both find bipartisan support and cause intraparty conflict in Congress, the environment is now a policy area that is clearly polarized. This paper offers a new explanation for how congressional politics on environmental policy became polarized: the ongoing education realignment in American party politics. As the Democratic Party increasingly relies on college-educated voters and the opposite is true for the Republican Party, this has the potential to affect the parties' positions on environmental policy based on public opinion research which finds a positive relationship between education and pro-environment attitudes. Using data from the League of Conservation Voters legislative scorecard from 1983-2020, this paper finds the education realignment contributed to the removal of pro-environment Republicans and anti-environment Democrats in Congress in recent decades; and that this has primarily occurred through elite replacement rather than conversion.

Introduction

In 2009, Democrats controlled both houses of Congress and the presidency for the first time in over a decade. One of their priorities was to address the growing problem of climate change in the form of the American Clean Energy and Security Act. This bill notably included a “cap and trade” policy, which would have set a nationwide cap on carbon emissions and require businesses to buy and sell permits to emit greenhouse gases. Despite Democrats having a large majority in the House of Representatives, the bill barely passed the chamber as 44 Democrats voted against it. These 44 members importantly differed from their fellow House Democrats on how many of their constituents were college-educated: the average educational attainment for these districts was close to seven points lower than both the House Democratic caucus overall and the national average; and of those 44 Democrats, only 11 represented districts which Democrats still hold in 2021.

This is evidence of the depletion of anti-environment Democrats and pro-environment Republicans in Congress and of the growing partisan polarization on the environment (Shipan and Lowry 2001; Klyza and Sousa 2008; Guber 2013). But is also evidence of the ongoing education realignment in American party politics (Sides, Tesler and Vavreck 2018; Kitschelt and Rehm 2019). College-educated voters increasingly vote Democratic, while non-college-educated voters increasingly vote Republican. This realignment is predominantly one among white voters and is a reversal of prior voting behavior. I argue these two phenomena are connected and that the ongoing education realignment can help explain increased polarization on the environment, an issue that once drew much more bipartisan support in Congress.

Prior research found a link between educational attainment and attitudes towards the environment, with greater education leading individuals to hold more pro-environment positions (Van Liere and Dunlap 1980; Guber 2003; Driscoll 2019). As the Democratic coalition becomes more educated and the Republican coalition becomes less educated, this could affect both parties' position taking on the environment. This hypothesis draws on theories of party position taking that argue changes in a party's coalition can affect the kinds of positions a party takes (Wolbrecht 2000; Karol 2009) and prior findings that the education realignment affected party position taking in other policy areas (Kersting 2021).

I find the education realignment contributed to the growing polarization of the two parties on environmental policy through the replacement of pro-environment Republicans and anti-environment Democrats in Congress. These members disproportionately represented highly educated constituencies and less educated constituencies respectively; and many of those districts and states switched parties in recent years. Conversion of pro-environment Republicans and anti-environment Democrats and the replacement of such members with co-partisans who were more

in step with their party's position on the environment played a less prominent, but still significant role; but this had little connection to the education realignment. These trends resulted in two parties further apart from one another yet more internally cohesive on environmental issues. This contributed to the increase in congressional polarization on environmental policy in recent years.

In this article, I review the literature on polarization on the environment, the connection between educational attainment and environmental attitudes, and the education realignment. I then outline a theory for how the education realignment would impact party position taking on the environment. I use congressional scorecard data from the League of Conservation Voters to test this theory. I produce a list of members of Congress who are outliers within their parties on this scorecard. I show constituent educational attainment is related to whether a member is an outlier or not; and that it contributed to the replacement of outliers in both parties from the 2000s. I conclude by discussing what the significance of these findings are for the future of environmental and congressional politics in the United States.

The Emergence of the Education Realignment

For much of the late twentieth century, Americans with higher levels of educational attainment were more likely to vote for the Republican Party; but in the 1980s, this trend began to reverse and today, Americans with a college degree are more likely to vote for Democratic candidates instead. These shifts are most prominent among white Americans. These changes in party identification in the electorate eventually filtered up into the halls of Congress. Whereas in the 1980s, the plurality of Republican members of Congress represented highly educated districts and states and the plurality of Democrats represented districts and states with low levels of educational attainment, it is now the opposite for both parties as seen in Figure 1.

[Figure 1 here]

Why have these changes in voting behavior and the composition of both parties' coalitions occurred? Prior research argued it is the result of a shift in which issues drive American politics. This research argued social or cultural issues, such as racial equality, LGBTQ+ rights, immigration, abortion, and climate change became more significant factors in American party politics and elections in recent decades (Hunter 1991; Brewer and Stonecash 2007; Hopkins 2017; Sides, Tesler, and Vavreck 2018). Some argue this is the natural result of a shift to a post-industrial society, in which greater economic security allows for more attention to these social issues than economic issues (Manza and Brooks 1999; Kitschelt and Rehm 2019); while others argue that it is more a product of strategic decisions made by political elites (Hillygus and Shields 2008; Mellow 2008; Reiter and Stonecash 2011). All of this is not to say that economic or class divides do not matter anymore in American politics, but as Brewer and Stonecash (2007) argued, the influence of social issues rose to compete with economic issues.

As the influence of social issues rose, this had a destabilizing effect on both parties' coalitions based on educational attainment. Whereas greater educational attainment is associated with more conservative positions on economic issues, it is associated with more liberal positions on social issues. When social issues were less salient in American politics, this allowed college-educated Americans to align with the Republican Party and non-college-educated Americans to align the Democratic Party with little friction as their economic positions aligned with that of their party. But as social issues became more salient, this created discontent: Socially liberal college graduates felt alienated by the Republican Party's conservative stances on social issues and the same was true among socially conservative non-college graduates in the socially liberal Democratic Party.

This led to what I label the education realignment: college graduates in the Republican Party and non-college graduates in the Democratic Party gradually shifting to the other party in recent decades due to the rise in prominence of social issues. These shifts have only accelerated in recent electoral cycles (Sides, Tesler, and Vavreck 2018). As these shifts progress, the coalitions of both parties are changing: socially liberal college graduates are joining the Democratic coalition and socially conservative non-college graduates are joining the Republican coalition. These coalition changes have the potential to alter both parties' positions on several issue areas as the policy preferences of their coalitions transform. As I show, one such alteration is the parties' positions on environmental policy, a policy area in which educational attainment affects public attitudes and one that the parties have shifted on in recent years.

The Polarization of Environmental Party Politics

When the modern American environmental protection movement came to prominence in the 1960s and 1970s, it often found supporters in both the Democratic and Republican parties. Many of the early landmark laws to protect the environment in the early 1970s were passed by a Democratic Congress and signed by Republican president Richard Nixon (Andrews 2012; Kraft 2018). But as the years went on, the two parties increasingly polarized on environmental issues as seen in Figure 2. Since the 1980s, Democrats became more pro-environment and Republicans became more anti-environment in both chambers of Congress according to the League of Conservation Voters' congressional scorecard ratings.

[Figure 2 here]

Many previous accounts of party position taking on the environment trace the beginnings of this polarization to the rise of conservatism in the Republican Party. In response to the activist

liberal policies of the New Deal and Great Society that grew the national government, a conservative backlash arose. Part of this backlash was aimed at the environmental regulations implemented during the 1970s. Both Duffy (2012) and Layzer (2014) argued conservative activists who were fiercely opposed to many government regulations of the environment gained prominence in the Republican Party and pushed the party to move away from any pro-regulation stances. This rise of anti-government regulation conservatism within the Republican Party culminated in the election of Ronald Reagan as president in 1980.

During the Reagan administration, many environmental protection regulations were rolled back, though this mainly occurred through executive and bureaucratic action as Democrats maintained control of Congress and blocked major legislative rollbacks (Andrews 2012; Kraft 2018). Still, the Reagan administration's actions on the environment spurred another backlash movement – this time from pro-environment activists. The 1980s saw a significant increase in the number and activity of pro-environmental groups, which increasingly aligned themselves with the Democratic Party. Duffy (2012) argued that this was part of the backlash cycle that characterized environmental politics in recent American history: when liberals control government and implement new environmental regulations, anti-government conservatives mobilize against the new regulations; and when conservatives control government and roll these regulations back, pro-environment activists and interest groups mobilize to protect these regulations. This activist mobilization on both sides contributed to polarization on the environment.

Despite a brief resurgence of bipartisanship on the environment during the George H.W. Bush administration, polarization on the environment continued to grow since the 1990s (Andrews 2012). Klyza and Sousa (2008) characterized the status of environmental politics during this period as one of legislative gridlock. Both parties when they were in power attempted to shift

environmental policy in their desired direction but were often unable to get legislation passed because of a lack of bipartisan agreement and pushback from moderate members. Absent one party having large majorities in both chambers of Congress and little internal party division, it appears that the legislative stalemate on environmental policy Klyza and Sousa described will continue. While the former condition seems unlikely given current levels of polarization in the electorate, I will show that the latter is less of a pressing issue in Congress today as the numbers of pro-environment Republicans and anti-environment Democrats have dwindled; and I argue this removal of environmental moderates in both parties can be explained by the growing education realignment.

Shipan and Lowry (2001) attempted to explain party divergence on the environment too. They argued the more ideologically extreme factions within both the Republican and Democratic parties gain influence under two conditions: (1) when environmental issues are salient; and (2) when interest groups involved in the environment become more prominent. Historically, the first condition is not often met as the environment is not a very salient issue for many Americans (Guber 2003; Klyza and Sousa 2008).

On the second condition, this echoes findings by Anderson (2011). Anderson found the presence of significant numbers of constituents who belong to environmental groups has a positive effect on the representation of pro-environmental policies by both Democrats and Republicans in Congress. Environmental interest groups have risen in size and influence over recent decades (Kraft 2018). Of particular importance for party position taking in Congress, campaign donations from environmental groups in congressional elections rose from less than a million dollars in 1990 to over thirteen million dollars in 2020 (Center for Responsive Politics 2021). But such donations are increasingly slanted towards Democratic candidates: in 1990, the ratio of pro-environment

donations between Democrats and Republicans in Congress was about 8:1; in 2020, it was about 38:1. If we combine this with the rising influence of anti-environmental regulation activists in the Republican Party, it is likely that the pull of these competing activist groups polarized the parties. While I focus on another source of polarization in this chapter, I do not dispute that activist pressure is a relevant cause of party polarization on the environment.

Another source of the polarization observed on environmental policy is the regional composition of both political parties. In a study of congressional behavior on environmental policy in the 1980s, Kamieniecki (1995) found that both northeastern Republicans and southern Democrats were outliers in their parties on the environment. Northeastern Republicans were more supportive of and southern Democrats were less supportive of environmental protections than the rest of their parties respectively. These Republicans and Democrats were often the ones who frustrated their party's environmental agenda throughout the 1990s and 2000s (Klyza and Sousa 2008). Furthermore, Shipan and Lowry (2001) found that when there were more Democratic members of Congress from the South, the parties were less polarized on the environment. In recent years, there are fewer northeastern Republicans and southern Democrats in Congress (Mellow 2008; Reiter and Stonecash 2011). This has contributed to the growing polarization between the two parties on this issue. As I will show below, these regional trends were connected to the education realignment: many northeastern Republicans represented highly educated constituencies and exhibited more pro-environment behavior in Congress; and the opposite was true for southern Democrats. As voters began to realign on the basis on educational attainment, many of these members were swept out of office. This transformation of both the Democratic and Republican coalitions contributed to the polarization of the parties on environmental policy.

Public Attitudes on the Environment: Party and Education

As party elites polarized on environmental issues, the party masses polarized as well. In the electorate, Democrats became more concerned with the environment and more supportive of policies aimed at protecting the environment; and Republicans became less concerned in comparison (Guber 2013; Dunlap, McCright and Yarosh 2016). As Dunlap, McCright and Yarosh (2016) found, there has long been a partisan gap in support for environmental policies among the American public, but that gap began to grow dramatically in the mid-2000s. Guber (2013) argued that much of this gap is the result of voters taking cues from party elites on environmental issues. I do not dispute that this took place, but there was also party switching taking place at the same time.

As discussed earlier, one such instance of party switching is the education realignment that led to the trading of voters between the two parties on the basis of educational attainment. The education realignment has the potential to impact environmental policy as this is a policy area in which Americans differ depending on their level of educational attainment (Van Liere and Dunlap 1980; Guber 2003; Driscoll 2019). More educated Americans tend to hold more pro-environment attitudes and exhibit higher levels of support for environmental regulations than less educated Americans. This relationship also extends to voting behavior: Coan and Holman (2008) found that higher education led voters to be more likely to support pro-environment ballot measures.

There are a few theories for why this relationship between educational attainment and environmental attitudes exists. One advocated by Van Liere and Dunlap (1980) is that education affects attitudes towards the environment as higher education leads to higher social status: educated (and oftentimes wealthier) individuals tend to have achieved their basic material needs and can shift their attention to less pressing issues like the state of the environment. I would add

that those with a college education are less likely to be in occupations that would be directly affected by increased environmental regulations such as manufacturing. This may lead them to lend more support for such regulations. At the same time, this theory may be more relevant to the question of whether income or class affects support for the environment. Because there is often a correlation between income and education, income may be driving environmental attitudes more than education is.

A theory more isolated to education is that education makes an individual more knowledgeable about the environment. Guber (2003) argued that environmental policy involves complex issues regarding the science of climate change and the regulations proposed to address it. The more educated an individual is, the more cognitive skills they have to comprehend the intricacies of environmental policy. They are also more likely to take action on the environment due to their greater organizational skills. More recent studies of public opinion on the environment support Guber's theory: Cook (2016) argued increased education and scientific knowledge can help individuals reject misinformation about climate change; and Motta (2019) found greater scientific knowledge led to greater support for government funding of science, though Motta argued interest in science may be more important than scientific knowledge alone.

In 2010, the General Social Survey (GSS) included a battery of several questions on the environment. Pro-environment responses to five of those questions are reported in Figure 3. For all five questions, a higher percentage of respondents with a Bachelor's degree or higher gave a pro-environment response than respondents with only a high school education. We can observe a college education is associated with much pro-environment beliefs and behavior.

[Figure 3 here]

Some scholars have argued education may not be that significant. Hamilton (2011) found that while higher levels of educational attainment generally are associated with higher levels of concern about global warming, partisanship affects that relationship. The more educated Democrats are, the more concerned they were about global warming, but concern fell as education increased among Republicans in Hamilton's study. It should be noted that Hamilton presented these interaction effects only among strong Democrats and Republicans. As the education realignment was transpiring when the survey Hamilton employed was fielded, I argue confining results to only strong party identifiers may exclude significant numbers of less educated Democrats and more educated Republicans who may have been more likely to identify as weak party identifiers as they were shifting parties.

Like Hamilton, Benegal and Holman (2021) found a counterintuitive effect of education on support for environment protection. Their study interacted educational attainment with racial resentment and found that respondents who were racially prejudiced exhibited lower levels of support for environmental protection, but education exacerbated that relationship: college educated racist respondents were less likely to support policies to mitigate climate change than non-college educated racist respondents. This relationship held among both Democrats and Republicans. While this is a robust and interesting finding that goes against the theory about education and the environment advocated in this chapter, I argue the broader contours of the education realignment soften the effects of this study on my theory. Prior research on this realignment generally found that social issues, including race, were driving the realignment. This is resulting in the sorting of voters on racial issues, with more racially resentful voters leaning Republican and less racially resentful voters leaning Democrat. It is likely that most racially resentful voters who are highly educated will stay in the Republican Party; and most of the highly educated voters who do shift to

the Democratic Party are going to be more racially tolerant and have more pro-environment attitudes.

Driscoll (2019) argued that while educational attainment and other demographic variables used to be significant predictors of attitudes towards environmental policy, the effect of those variables diminished in recent years and were replaced by partisanship as the most powerful predictor of environmental policy support. While Driscoll's findings supported this argument, they do not account for the increasingly close relationship between demographics and partisanship. The education realignment is resulting in the increased correlation between educational attainment and partisanship. Thus, as the realignment progresses, it may appear that educational attainment on its own is becoming less consequential for attitudes on the environment, but what may actually be occurring is that educational attainment is predicting partisanship which in turn is predicting concern for climate change.

While there is some debate as to how educational attainment impacts attitudes on the environment, I argue on the whole, there is some relationship based on the prior studies and data I present above. This has potential consequences for party position taking on the environment. As the education realignment progresses and Democrats come to represent more educated constituents and Republicans come to represent less educated constituents, we can expect Democrats to become more supportive of environmental protections and Republicans to become less supportive of such protections. This stems from greater cohesion in each party's coalition on environmental policy because of this realignment.

Explaining the Education Realignment's Effect on Environmental Party Position Taking

The logic behind the argument that introducing more college-educated voters into the Democratic Party and non-college-educated voters into the Republican Party would affect both parties' stances on the environment stems from the theory that changes in a party's position are likely to produce changes in a party's positions or platform (Wolbrecht 2000; Karol 2009; Baylor 2017). If a political party is seen both as an organization chiefly concerned with winning elections (Downs 1957) and as a coalition of disparate groups competing for influence (Cohen et al. 2008), then as Wolbrecht (2000) and Karol (2009) argue, as a new group enters or an old group leaves a party's coalition, this would change which groups have the most influence in the party and elected party elites should respond to the groups that now have the most influence in order to secure their electoral support.

By the 1980s, the Democratic Party was predisposed to endorsing pro-environment policies and the Republican Party was predisposed to endorsing anti-environment policies due to the activist pressures discussed above, but there remained many pro-environment Republicans and anti-environment Democrats in each party at both the mass and elite levels that limited the degree of polarization on this issue. The education realignment upsets this dynamic by increasingly sorting voters based on educational attainment. Prior to the realignment, significant numbers of non-college educated voters in the Democratic Party and college educated voters in the Republican Party exerted a moderating force on both parties in their position taking on the environment: Democratic elites feared taking extreme pro-environment positions as this would alienate their non-college educated voters who were less supportive of environmental protection policies; and the same was true for Republican elites and their college-educated supporters.

The education realignment changes the party's "decision-calculus" on the environment to use the words of Wolbrecht (2000). As the Republican Party loses college educated voters who are more pro-environment and gains non-college educated voters who are more anti-environment, this changes the internal dynamics of the party: The party can take more anti-environment stances because its' coalition is more anti-environment than it was before the education realignment began. The opposite is true in the Democratic Party, as it sheds non-college educated voters and attracts college educated voters. As Karol (2009) describes, this will be a gradual process or as I would call it, an iterative process: (1) the parties take initial polarizing stances on the environment due to the activist pressures in both parties' coalition, (2) which alienates pro-environment college educated Republican voters and anti-environment non-college educated Democratic voters who begin to switch to the opposite party. This results in (3) both parties taking more extreme stances on the environment and nominating and electing fewer elites who take positions on the environment out of step with their party's position. This then (4) further alienates non-college and college educated voters which accelerates their realignment and polarization on the environment. Essentially, the parties are continually adjusting their positions on the environment to respond to the internal changes in their coalitions.

I hypothesize that these dynamics will eventually be observed in both parties' congressional caucuses:

H1: The education realignment will result in the decrease of pro-environment Republicans and anti-environment Democrats in Congress.

This is because either existing pro-environment Republicans and anti-environment Democrats in Congress will be less likely to take such positions as the dynamics in their parties shift or that the education realignment will result in the districts and states these members of Congress represent shifting to the other party. In other words, pro-environment Republicans and anti-environment

Democrats in Congress can either convert their positions to reflect the parties' new coalitions or be replaced by a member of the opposing party.

I argue the latter is more likely considering that educational attainment is not evenly geographically distributed: some congressional districts and states have much higher levels of educational attainment than others; and that the education realignment involves active party switching among college-educated Republicans and non-college educated Democrats. Thus, Republicans are likely to lose control of highly educated districts and states in Congress and the opposite should occur among Democrats. These districts and states are also the constituencies that would have been most likely to elect pro-environment Republicans and anti-environment Democrats. This leads to my second and third hypotheses:

H2: The decrease in environmental congressional outliers in both parties will primarily result from districts and states shifting from one party to the other.

H3: Party switching in districts and states represented by environmental congressional outliers will be concentrated in highly educated constituencies for Republicans and less educated constituencies for Democrats.

As highly educated constituencies shift from Republican to Democratic control and less educated constituencies shift from Democratic to Republican control, we will observe fewer pro-environment Republicans and anti-environment Democrats in Congress. This will further polarization on the issue of environmental protection in Congress and in American politics as both parties will be more internally homogenous on this issue area at both the elite and mass levels.

Data and Methods

The primary dependent variable used to measure party position taking on the environment is the annual congressional scorecard published by the League of Conservation Voters (LCV) since the 1970s (League of Conservation Voters 2021). The LCV is a leading pro-environment interest

group that advocates and lobbies for environmental protection policies. I use data from the 98th to the 116th Congresses (1983-2020). For each year, the LCV selects congressional roll call votes that a panel of conservation experts deems consequential for the environment. The LCV records whether members of the House of Representatives and Senate take the pro- or anti-environment position. It then compiles these votes to create a scorecard rating for each member of Congress using a simple average.¹ For example, if there are ten votes included in a given year's scorecard and a member of Congress took the pro-environment position in four of those votes, they would receive a 40% scorecard rating for that year.² The scores range from 0 to 100, with higher scores signifying more pro-environment voting behavior. Rather than scores for individual years, I use scores for an entire congress over a two-year period.³

While I do compare the average scores for both parties over time as seen in Figure 1, most of the analysis below focuses on comparing individual members of Congress to their co-partisans at the same point in time. I employ an outlier detection scheme that uses median absolute deviation (MAD). The MAD for a set of data is calculated by determining the median of the absolute deviations from the dataset's median. I selected to use MAD to determine congressional outliers over standard deviation from the mean following statistical research which argued the former is a more robust technique for detecting outliers than the latter (Olewuezi 2011; Leys et al. 2013). Unlike the mean that is very sensitive to outliers, the median is less affected by outliers. This makes MAD a more appropriate choice for this study than standard deviation.

¹ On rare occasions, the LCV weights consequential votes more heavily and counts them more than once.

² If a member of Congress is absent for a vote, it counts as negative. This is done to signify that the member of Congress did not place importance on the vote in question. Beginning in 2019, the LCV began to excuse absences due to "family and medical leave or disasters." Missed votes due to actions like campaigning still count against a member's score. This only amounts to a small fraction of observations in a given year.

³ For many years, the LCV includes a score for the overall congressional session. In years in which they do not, I simply average the member's scores over the two-year period.

Democrats that fall more than one deviation below and Republicans that fall more than one deviation above their party's median scorecard rating are classified as outliers.⁴ The MAD is calculated over the entire period examined here (1983-2020).⁵ I track the number of outliers in both parties over time and track the future of outliers in the 2000s: whether they remain in Congress, retired, or lost reelection; and whether control of their district or state switched parties. I am focused on the degree to which these outliers were converted into their party's mainstream or were replaced by new members who were not outliers or were from the opposing party.

There is some skepticism of the use of interest group scorecards as a data source. As the LCV is a private interest group with political motivations, the choice of which votes to include in the scorecard could be biased as has been argued to be the case with other interest group scorecards (Charnock 2018). At the same time, Anderson (2012) argued using legislative scorecards created by interest groups is appropriate when studying "domain-specific ideology," especially for policy domains in which significant intraparty division exists, as was the case for environmental policy in the earlier years of this study. Additionally, Shipan and Lowry (2001) argued that LCV ratings appear to have face validity: members of Congress known to be more pro-environment tend to receive very high scores and those who are known to be more anti-environment generally receive very low scores.

There is also skepticism over whether these scorecard ratings can be used to compare congressional behavior over time. There is the potential that a rating of 100 in the 1980s may not mean the same as a rating of 100 in the 2010s. I do not deny that this is an issue, but I would argue

⁴ It is obvious that there are also outlying Democrats who have higher scores than their party average and outlying Republicans who have lower scores than their party average. These members are not consequential for this study as I am trying to explain how Democrats became more pro-environment and Republicans became more anti-environment. Existing Democrats who are very pro-environment and Republicans who are very anti-environment are not going to affect this dynamic.

⁵ The MAD for Democrats and for Republicans was 16.

the issue of the environment has changed over time – for example, an issue like global warming was not paramount in the 1970s and 1980s as it is today. Thus, we should expect the issues included on these scorecards to change over time as the debate surrounding the environment changes over time. At the same time, I argue the same underlying factors would drive a member to be pro-environment today as it would thirty or forty years ago. Following Bishin, Freebourn and Teten (2020) who also used interest group scorecards, I tested for the validity of the scorecards as measuring the same concept over time using Cronbach’s alpha. The result was 0.91, which suggests the scorecards are measuring the same concept for each time period. I also note that to derive whether a member is an outlier with their party on the environment, I only compare members within the same period, so concerns about comparisons across time are not as relevant for that measure.

To test how congressional behavior on the environment and whether members are outliers within their parties on this issue are connected to the education realignment, I use data from the United States Census Bureau and the American Community Survey on the educational attainment for states and congressional districts in recent decades.⁶ The specific measure I employ is the percentage of constituents 25 years or older who have a Bachelor’s Degree or higher. I also restrict this data point to only non-Hispanic white constituents for some of the analysis. Control variables used in some of the statistical models of congressional behavior include political party; the Democratic vote share for a state or district in the last presidential election (Daily Kos 2018); pro-environment campaign contributions (Center for Responsive Politics 2021);⁷ the chamber of

⁶ Availability of this data at the congressional district level varies over time. From 2003 onwards, I have complete data at the state and congressional district level for educational attainment. I was also able to access older census data for 1983 and 1993. Years in between 1983 and 1993 as well as 1993 and 2003, I do not have reliable data for.

⁷ I used the logarithm of the dollar amount received by each member from environmental groups.

Congress the member belongs to; and whether that chamber was controlled by Democrats at the time.

Explaining Trends in Congressional Outliers on the Environment

Figure 2 shows that the two parties have polarized on environmental policy in Congress in recent decades, but how was this polarization achieved? One explanation is that the number of pro-environment Republicans and anti-environment Democrats dramatically diminished. Figure 4 shows the number of members of Congress who are outliers within their parties on environmental policy from 1983-2020. For much of the 1980s, there were well over a hundred members of Congress who were outliers in their parties. That number hovers around forty in recent years. Furthermore, this decrease has not been limited to any one party or chamber.

[Figure 4 here]

The fact that there are fewer members who are outliers within their party is not a surprising one, in and of itself. What is of more interest is that a member's outlier status appears to have a connection to the educational attainment in that member's district or state. A time-series logistic regression model was run for the congressional data from 2003 to 2020. The dependent variable was whether the member of Congress was an outlier within their party on the LCV scorecard rating for that congress. Independent variables included in the model were the overall educational attainment of the member's constituents; the educational attainment of the member's non-Hispanic white constituents; the Democratic vote share in the district or state in the last presidential election; pro-environment campaign contributions given to the member in the last electoral cycle; the chamber of Congress the member belongs to; and whether Democrats controlled that chamber. The data was split by political party as we would expect educational attainment to have different

effects on Democrats and Republicans: higher educational attainment would make Republicans more likely to be an outlier and Democrats less likely to be an outlier.

[Table 1 here]

Table 1 presents the results of these models. The effect of constituent educational attainment on a member's outlier status is as expected for both Democrats and Republicans and the effects are significant for both overall educational attainment and white educational attainment. It should be noted that the effect of educational attainment is small compared with other variables included in the models. Additionally, the effect of constituent educational attainment is much more pronounced among Democrats than Republicans. Overall, the results lend support for some connection between a member's voting behavior on environmental issues and the educational attainment of their constituents. This connection is more clearly shown in Figure 5 which displays the marginal effect of constituent educational attainment on LCV outlier status for both Democrats and Republicans with other variables held constant. As educational attainment increases, Democrats become less likely to be outliers and Republicans become more likely to be outliers.

[Figure 5 here]

On average, Republican outliers represent districts and states with greater educational attainment than their co-partisans; and the opposite is true among Democrats. The gap is also more pronounced in the House of Representatives than in the Senate. This likely stems from there being much more variation in district educational attainment in the House than there is in the Senate. In the following section, I show how the education realignment contributed to the removal of many of the Republicans and Democrats who were outliers within their parties on environmental issues in recent decades.

The Effect of the Education Realignment on Environmental Party Position Taking

From the previous section, we can conclude that the number of congressional Democrats and Republicans who are outside of their party's mainstream on environmental policy decreased in recent years; and that whether a member of Congress is outside of their party's mainstream is partially related to the level of educational attainment in their district or state. This section seeks to explain the former using the latter. I use an analysis of 212 unique members of Congress who were outliers on the LCV scorecard rating for at least one congressional session from the 108th to 111th Congresses (2003-2010). These include both members of the House of Representatives and Senate.

This time range was chosen for both data availability and events in Congress during that time period. I only have consistent data on district and state educational attainment beginning in 2003. This time period ends with the 2010 midterm elections that resulted in a Republican landslide that ousted many moderate and conservative Democrats. If one refers to Figure 4, one can observe a sharp drop in the number of congressional LCV outliers after this electoral cycle. This cycle came after good years for Democrats in 2006 and 2008 that ousted many moderate and liberal Republicans. Thus, the 2000s become the time period where we would be most likely to observe significant numbers of members of Congress who buck their party on the environment and in which data on educational attainment is available.

For these 212 outliers, we can trace their futures in Congress. There are three possible outcomes of interest for these members: (1) they can remain in Congress; (2) they have left Congress and their district or state is still held by the same party; and (3) they have left Congress

and their district or state is now held by a different party.⁸ Figure 6 shows the percentage of the 212 members who fall into each category. Half of these outlying members have left Congress and the district or state they represented has switched parties. Just over a third of the members left Congress but were replaced by a member of their own party. The remaining eleven percent remain in Congress as of 2021.⁹

[Figure 6 here]

This distribution differs greatly from Congress in general during this period. In comparison with the twelve percent of outlying members who remain in Congress, thirty-two percent of those who were in Congress from 2009-10 remain there in 2021. Additionally, districts and states represented by members who were outliers from 2003-10 were much more likely to switch parties than districts and states represented by members who were not outliers. This relationship is true across both parties and both chambers: House and Senate Republican outlier districts and states were about three and nine times more likely to switch parties, respectively; while House and Senate Democratic outlier districts and states were both about ten times more likely to switch parties.

A final way in which the outlying members of Congress differ from their co-partisans is where they are from. The percentage of Democratic outliers who were from the South is much greater than the overall percentage of southern Democrats; and the percentage of Republican outliers from the Northeast is much greater than the overall percentage of northeastern Republicans. This supports the earlier findings of Kamieniecki (1995) and Shipan and Lowry (2001) who found southern Democrats to be more anti-environment and northeastern Republicans

⁸ To account for redistricting in the House of Representatives that affects the geographical composition of congressional districts over time, I use data from Daily Kos Elections which compares districts before and after redistricting in recent years (Daily Kos 2018).

⁹ Two of the outlying members who remain in Congress moved from the House of Representatives to the Senate. They are Bill Cassidy (R-LA) and Shelley Moore Capito (R-WV).

to be more pro-environment than their co-partisans. These regional findings are also what the education realignment would predict: the Northeast has the highest level of educational attainment, and the South has the lowest. If greater constituent educational attainment leads to more pro-environment congressional behavior, we should expect to find more Republican outliers in the Northeast and more Democratic outliers in the South.

From the data discussed above, we can conclude that: (1) outlying members of Congress on environmental issues in the 2000s come from different regions than their co-partisans; (2) they are less likely to remain in Congress; (3) and they are more likely to have represented districts and states now held by the opposing party. As I will show in the following section, this latter trend is related to the education realignment.

Elite Conversion and Replacement among Outliers on the Environment

The education realignment could affect the fates of outlying members of Congress on environmental policy and thus indirectly affect party position taking on the environment through either conversion or replacement. For conversion, we may expect that if districts or states held by outliers have a change in constituent educational attainment, then those outliers may convert positions and become more in step with the rest of their party on the environment. These outliers could also be replaced by a member of their own party who is not an outlier on the environment; and we can see if this corresponds to the educational attainment of the district or state in question.

For the few outlying members who remain in Congress today, there is mixed evidence for conversion. For Republican outliers, it is difficult to say what the direction of travel was for these few members. Six of the eleven members continued to be outliers in the 116th Congress; and the average change in scorecard ratings for these members was -2.18. About half the group received

higher LCV ratings and the other half received lower ratings compared to a decade ago. Among Democratic outliers who remain in Congress, it is easier to draw conclusions. All but two of the thirteen members were no longer outliers in the 116th Congress; and overall, there was a 16-point increase in LCV ratings among these members from 2010 to 2020.

The more important question is whether any of these changes or lack thereof are related to the education realignment. If they were, we could expect members who shifted significantly on in their LCV ratings to also represent districts or states that saw significant fluctuations in constituent educational attainment over the same period. A correlation matrix which plotted the member's change in LCV rating and the change in their district's educational attainment found no relationship between the member's behavior and demographic changes among their constituents. But this is a very small sample size of less only two dozen members, so it is difficult to draw robust conclusions.

If we expand the sample size to outliers who were replaced by a member of the same party though, we see similar results. While over 80% of the members in this group are not outliers as of the most recent congress despite replacing a co-partisan who was an outlier, this again had little to do with the education realignment. But this is what we would expect from the broader implications of the education realignment which involves voters switching party affiliations. While it could be the case that a Republican member in a highly educated district and a Democratic member in a less educated district may shift their position on the environment to be more in step with their constituents, it is more likely that such districts just flip parties altogether.

There is much greater support for the education realignment affecting party position taking on the environment when we consider the replacement of outliers on the environment with a member of Congress of the opposing party. If the education realignment is leading to more

educated populations becoming more Democratic and less educated populations becoming more Republican, we should expect highly educated districts and states represented by Republicans and less educated districts and states represented by Democrats to be more likely to flip parties. From the analysis previously discussed, we know that outliers in each party on the environment are concentrated in such districts and states and that outliers were more likely to have their districts or states flip parties than members who were not outliers.

We can test these expectations by comparing the level of constituent educational attainment in the 212 outlier districts and states and whether those districts and states are represented by a member of the opposite party in the 117th Congress (2021-22). Figure 7 does just that. Democratic and Republican outlier districts and states are separated into three categories based on their constituent educational attainment (low, medium, and high).¹⁰ It is apparent that Democratic outliers are concentrated in less educated districts and states and Republican outliers are concentrated in highly educated districts and states. This supports earlier discussed findings that Democrats are more likely to be outliers if they represent less educated constituents; and the opposite is true for Republicans.

[Figure 7 here]

We can also observe that as constituent educational attainment increases for Republican outlier districts and states, it is more likely that those districts and states are now represented by a Democrat in Congress. Again, the inverse is true for Democratic outlier districts and states. 67% of Democratic outlier districts with low educational attainment flipped parties over the last decade, while only 45% of districts with medium to high educational attainment shifted to the Republican Party. 65% of Republican outlier districts with high education attainment switched parties over the

¹⁰ The level of educational attainment (low, medium, high) is in comparison to the overall distribution among LCV outlier districts and states.

same period, while just 23% of the remaining less educated Republican districts are now held by Democrats.

The results of Figure 7 suggest the education realignment affected whether districts and states held by moderate Democrats and Republicans on the environment switched parties. Party switching was concentrated among highly educated Republican districts and states and less educated Democratic districts and states. Furthermore, the regional dynamics discussed previously were present: most party switching occurred in the Northeast for Republicans and the South for Democrats. Combining these results with those above that found the majority of congressional outliers on the environment had their district or state switch parties, I argue the education realignment primarily affected party position taking on the environment through elite replacement of existing moderate Democrats and Republicans with members of the opposing party. Importantly, these new members were overwhelmingly not outliers within their party on the environment. Thus, all three of my hypotheses are supported by these findings.

Conclusion

Like most major issues in American politics, the two parties have polarized on the environment in recent decades. In this article, I examined whether this polarization is related to the education realignment observed in American elections during the same time span. As the environment is an issue on which there is a difference of opinion among Americans with a college degree or those without, I expected that the realignment of voters based on their educational attainment may affect party position taking on the environment. A more educated Democratic coalition should take more pro-environment stances and a less educated Republican coalition should do the opposite.

The major findings in this article on this question are twofold. First, I found that whether a member of Congress broke with their party's mainstream on the environment was related to the educational attainment of their district or state. Throughout the 2000s, many pro-environment Republicans represented more educated constituencies and many anti-environment Democrats represented less educated constituencies. Second, I found that most of these outlying members were swept out of Congress in recent years and that a majority of the districts and states they represented no longer are held by the same party. Furthermore, the districts and states that switched parties were associated with higher educational attainment for Republicans and lower educational attainment for Democrats. The education realignment contributed to the polarization of the two parties on the environment by aiding in the ouster of moderate Democrats and Republicans and their replacement by members of the opposite party. It had little effect through conversion.

These findings bolster prior arguments that the composition of the parties' coalitions is related to polarization on the environment (Shipan and Lowry 2001; Klyza and Sousa 2008; Anderson 2011; Layzer 2014). In earlier decades, the two parties had support from both more educated Americans who supported environmental protections and less educated Americans who were more skeptical of such regulations; and this allowed both parties to remain more moderate on environmental policy. But as the electorate became more polarized on the basis of educational attainment, this removed pro-environment voters from the Republican coalition and anti-environment voters from the Democratic coalition. This allowed for greater internal cohesion on the environment in both parties, but also pushed the parties farther apart on this issue.

These findings also suggest that polarization on the environment will only continue in the years to come, providing that the education realignment does not abate or reverse. Thus, in times of divided government, bipartisan agreement on major pro-environment legislation should not be

expected. Relatedly, under periods of unified Republican government, pro-environment legislation should not be expected either as the education realignment has contributed to the development of a Republican coalition that does not include many pro-environment voters or elites. But in times of unified Democratic government, it may be easier to pass significant legislation to address the growing problem of climate change than in previous years. As there are fewer Democrats who take anti-environment stances in Congress, it should be easier for the Democratic caucus to get behind pro-environment legislation.

Evidence of this can be seen in the 117th Congress, in which Democrats are working to include pro-environment provisions as part of their larger Build Back Better bill. Except for opposition from a few remaining anti-environment Democrats, most notably Senator Joe Manchin of West Virginia, who represents the state with the lowest rate of college education in the country, the climate provisions have not been nearly as controversial as other parts of this large omnibus bill. This paper shows that developments like this can be attributed to the education realignment, which is profoundly affecting American party politics in Congress. And this renewed Democratic embrace of the environment can be seen as positive news for environmental advocates, but these positive developments come at the expense of the environment no longer being a bipartisan issue in Congress.

Tables and Figures

Figure 1. Constituent Educational Attainment Distribution of Congressional Democrats and Republicans, 1983-2021

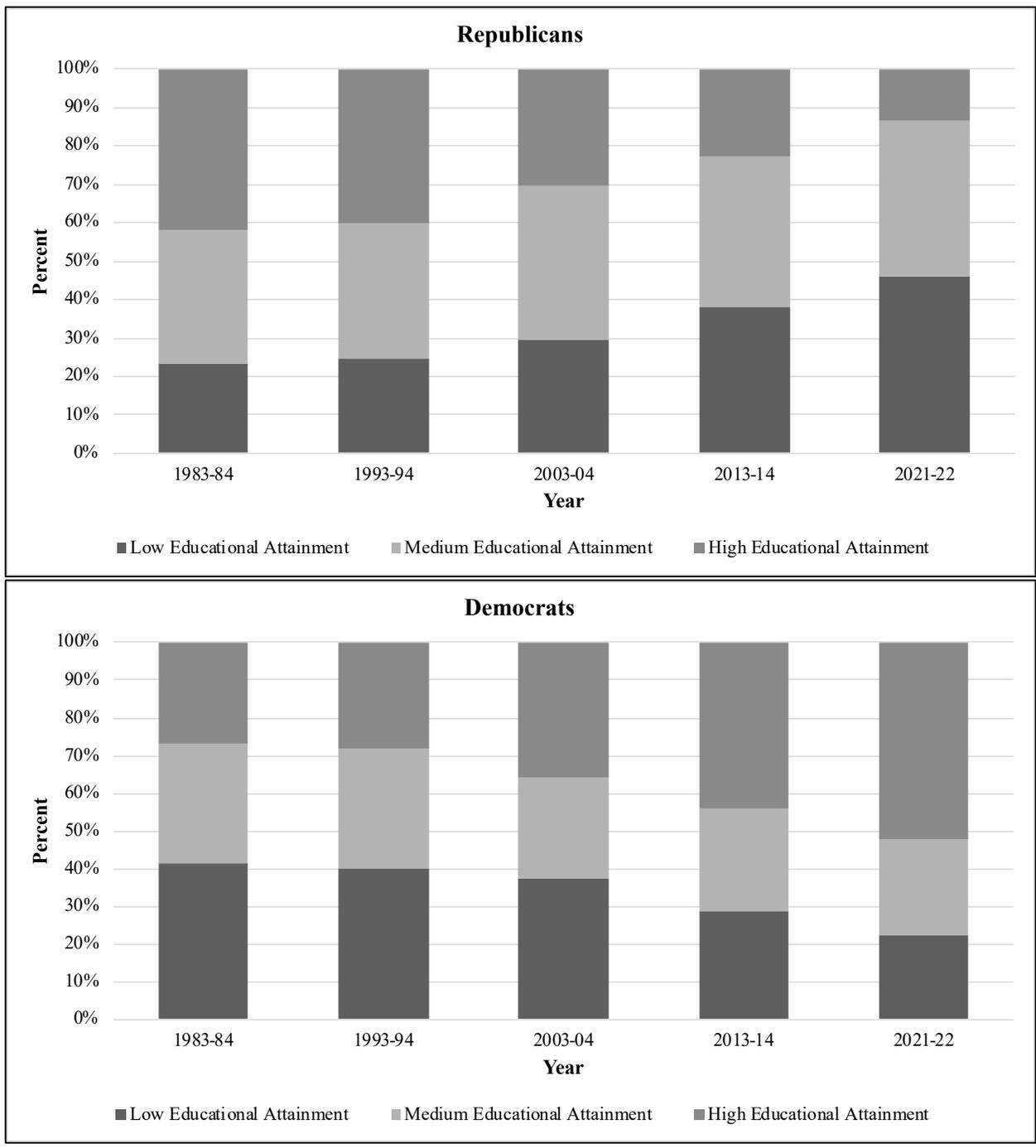


Figure 2. Average LCV Scorecard Rating by Party and Chamber, 1983-2020

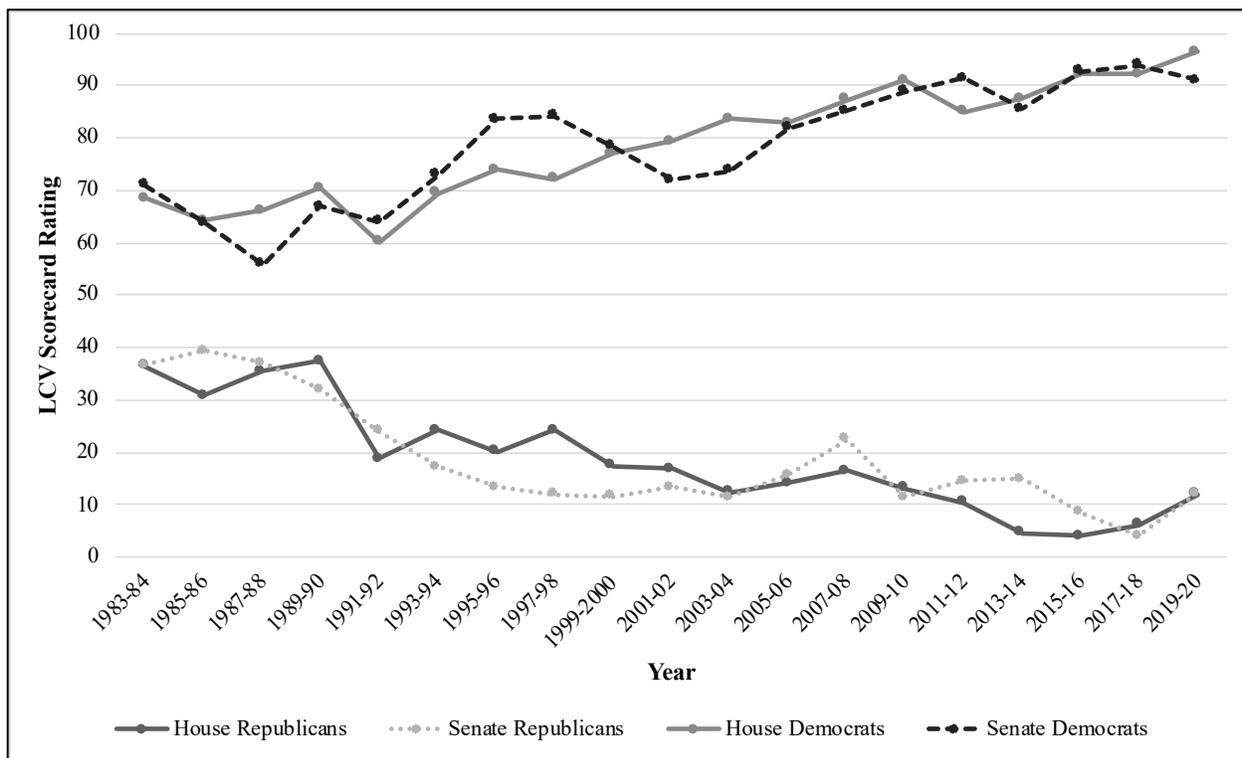


Figure 3. Americans' Attitudes and Behavior on Environmental Issues by Educational Attainment, 2010 (GSS)

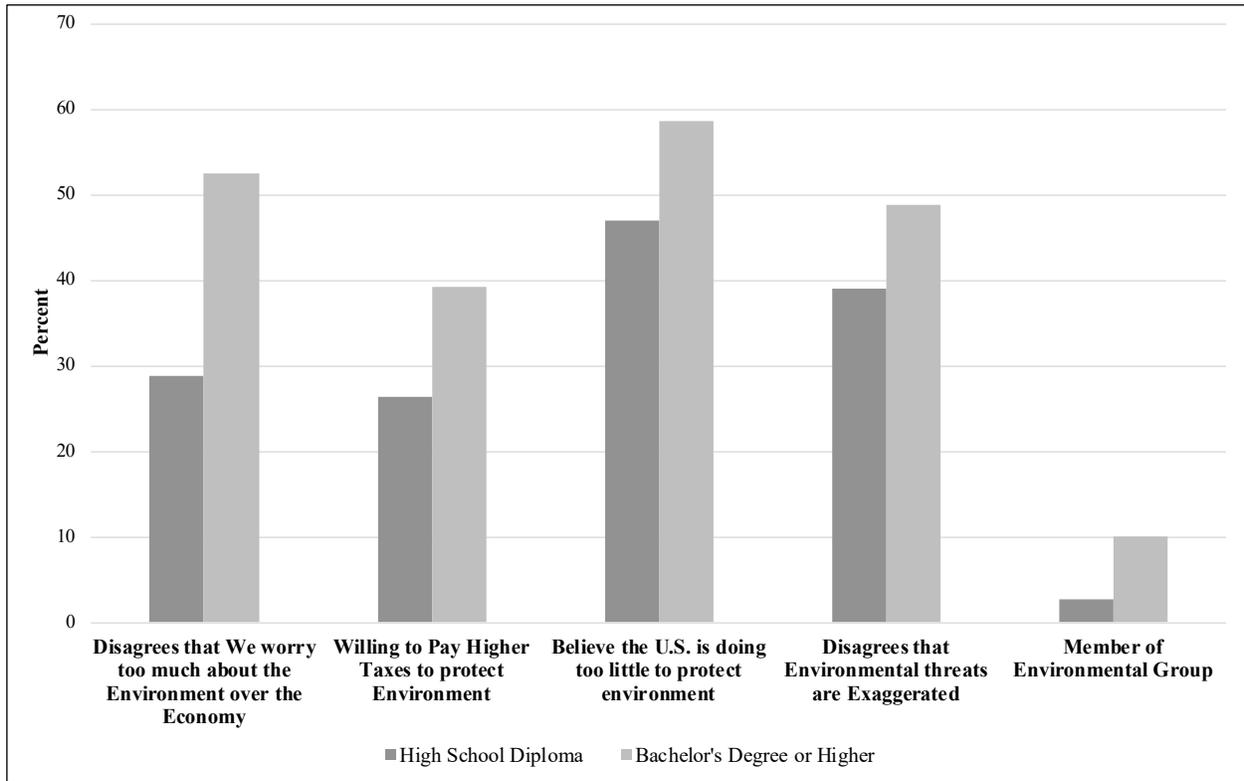


Figure 4. Number of LCV Rating Outliers in Congress, 1983-2020

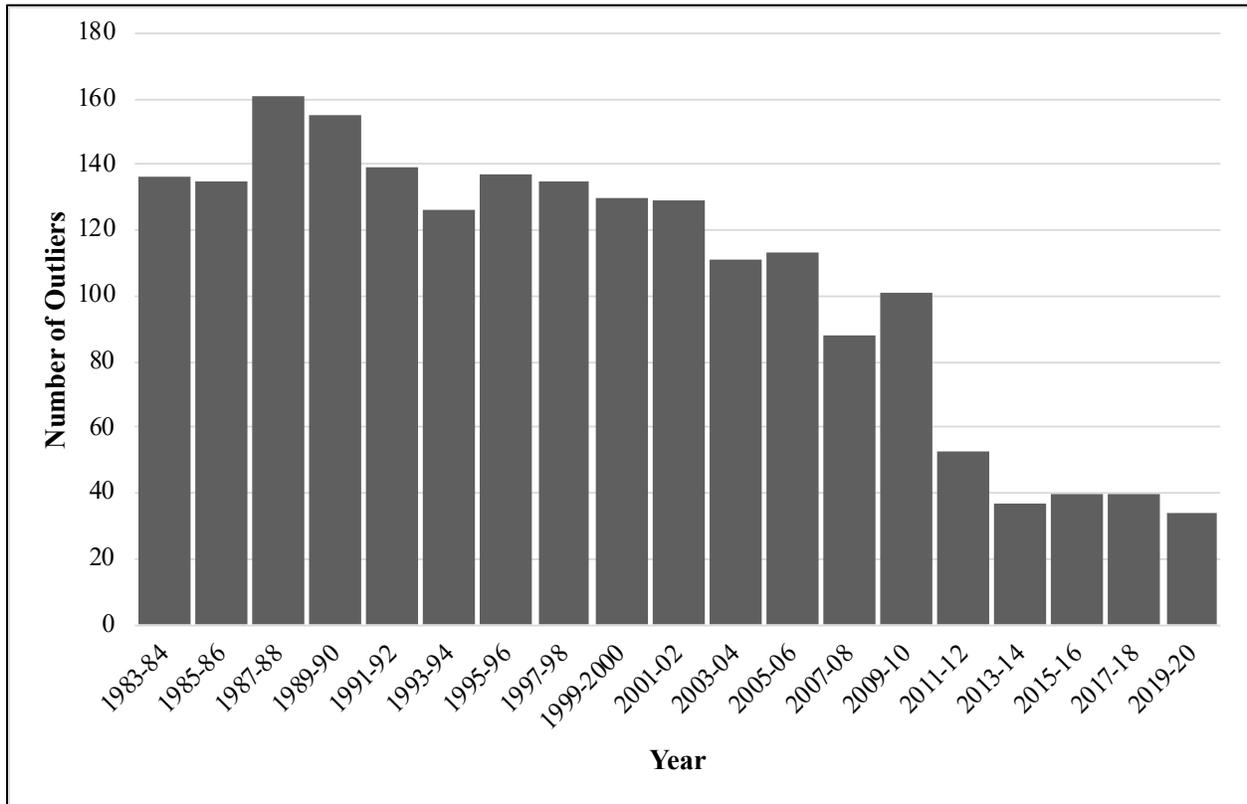


Table 1. Time-Series Logistic Regression for LCV Outlier Status, 2003-20

	Democrats		Republicans	
	b/(se)	b/(se)	b/(se)	b/(se)
% Constituents with Bachelor's Degree or Higher	-0.110*** (0.020)		0.060*** (0.015)	
% White Constituents with Bachelor's Degree or Higher		-0.074*** (0.018)		0.048*** (0.014)
Democratic Presidential Vote Share in Last Election	-0.103*** (0.014)	-0.087*** (0.014)	0.015* (0.006)	0.015* (0.006)
Pro-Environment Campaign Contributions	-0.222*** (0.058)	-0.249*** (0.059)	0.280*** (0.067)	0.271*** (0.068)
Senate	0.025 (0.296)	-0.268 (0.281)	-0.542 (0.346)	-0.52 (0.352)
Democratic Control of Chamber	-1.198*** (0.233)	-1.204*** (0.233)	1.679*** (0.293)	1.681*** (0.294)
LCV Outlier _{t-1}	1.492*** (0.298)	1.641*** (0.314)	3.171*** (0.391)	3.173*** (0.409)
Constant	7.123*** (1.104)	5.813*** (1.022)	-6.535*** (0.705)	-6.346*** (0.700)
Log Likelihood	-492.704	-507.534	-470.188	-472.201
N	2150	2150	2204	2204

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; District and Year Random Effects included

Figure 5. Predicted Probability of LCV Rating Outlier Status by Constituent Educational Attainment, 2003-20

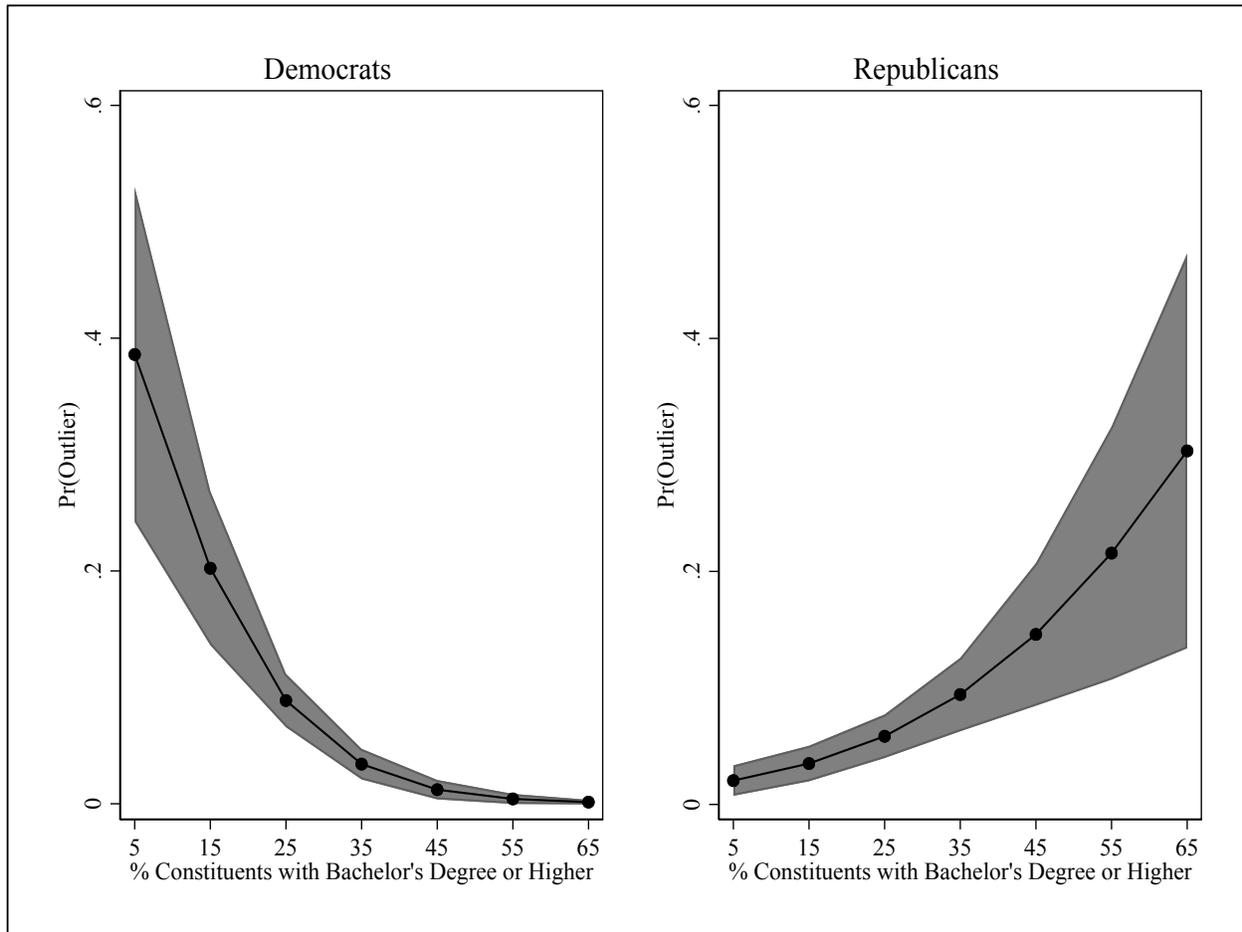


Figure 6. Futures of LCV Rating Outliers in Congress, 2003-10

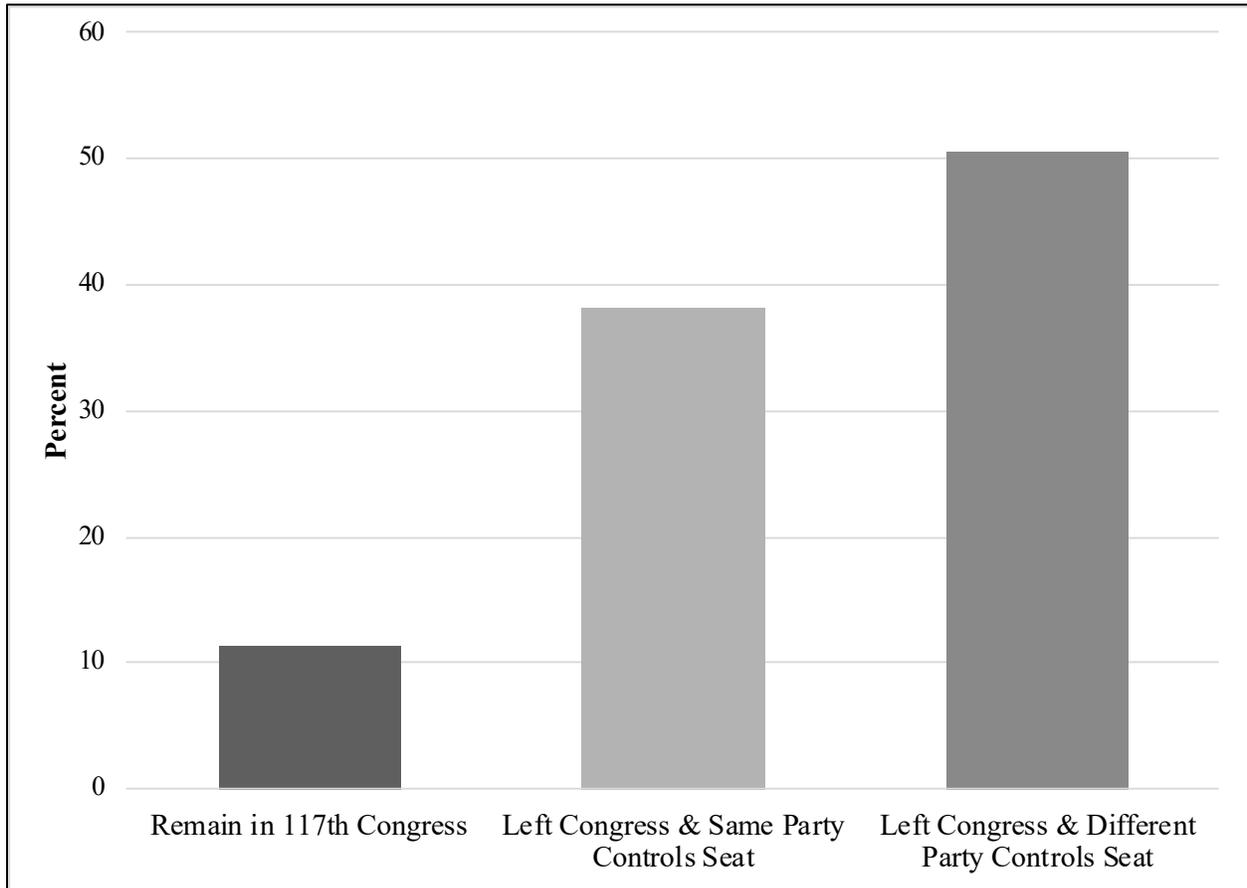
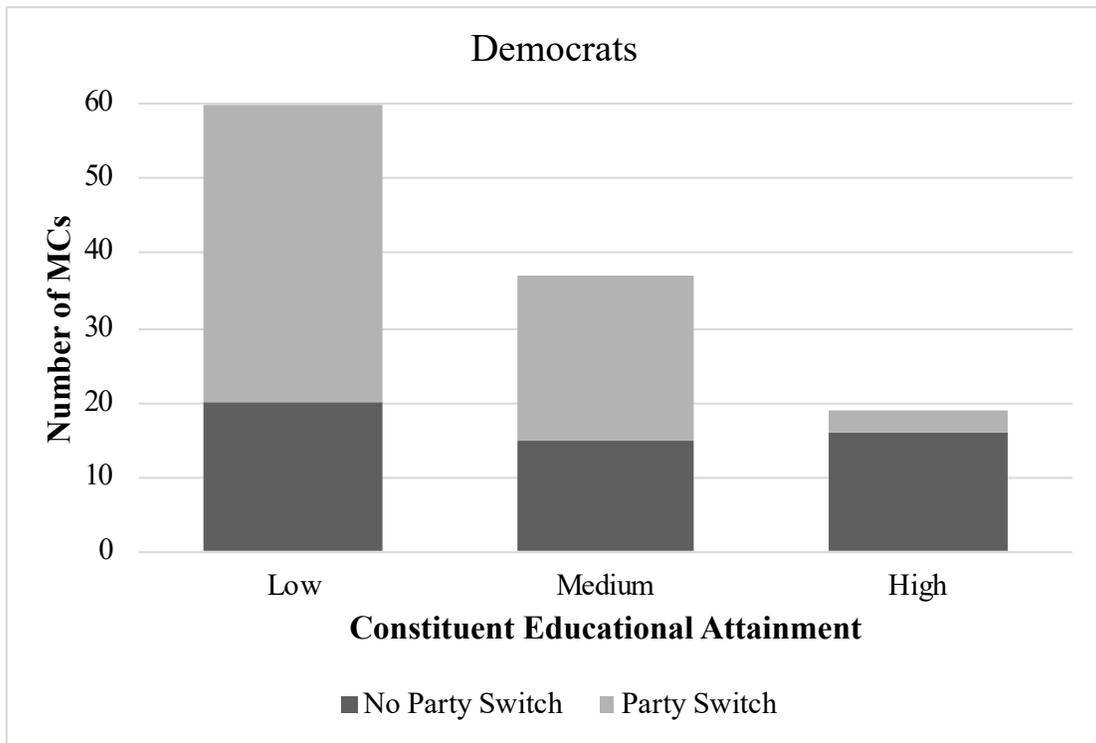
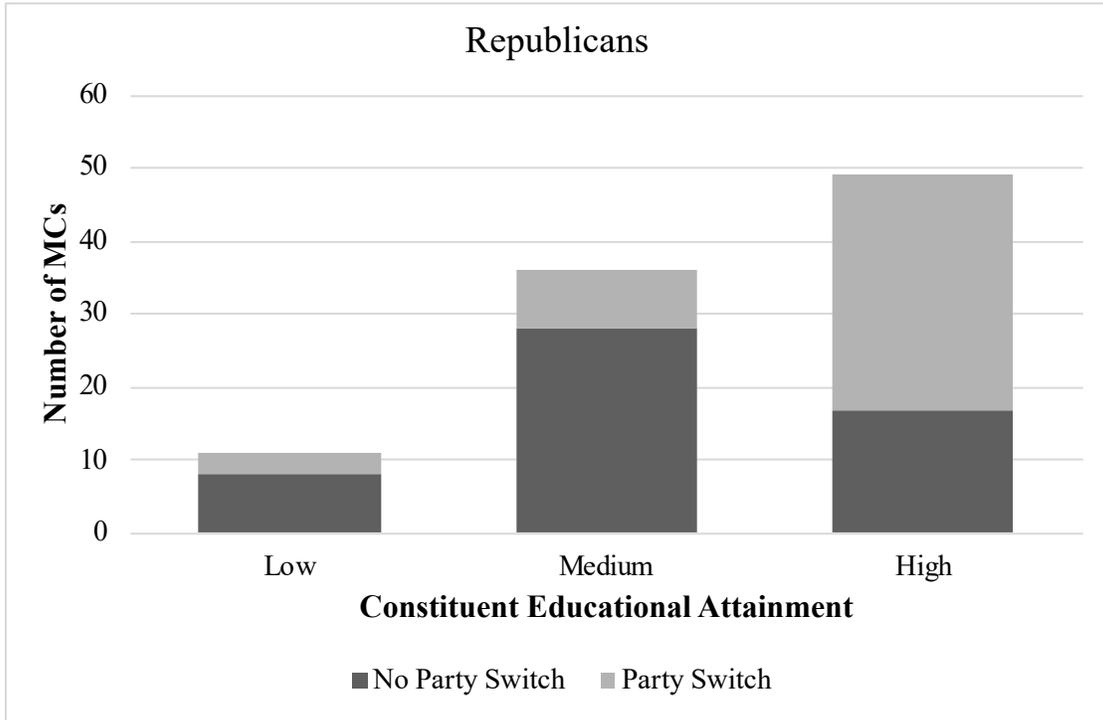


Figure 7. Constituent Educational Attainment of LCV Rating Outliers by Party Switch as of 2021



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