Partisan Segregation and Partisan Activation: How Geographic Polarization Increases Political Engagement*

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Abstract

Do voters participate more in politics when they live around neighbors who share their party? I argue that voters are more likely to be socialized into politics when they live near more co-partisans. Using administrative data on every registered voter across 30 U.S. states from 2012-2021 and an original survey of 45,139 voters, I measure the effect of partisan neighborhoods on voting and other political engagement. Focusing on voters who do not change residences between elections, I find that increased exposure to co-partisan neighbors makes voters more likely to turnout, volunteer for campaigns, attend protests, participate in local political meetings, and to publicly express their partisanship through lawn signs, clothing, or bumper stickers. Survey data support mechanisms of social influence: voters respond to in-group exposure by becoming more comfortable in their neighborhood and more likely to politically engage with neighbors.

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1 Introduction

American communities are increasingly becoming politically homogeneous, with Democrats living primarily near other Democrats and Republicans living in majority Republican communities (Sussell, 2013; Kaplan, Spenkuch, and Sullivan, 2022; Martin and Webster, 2018; Brown et al., 2021). This separation is apparent not just across states and regions (Hopkins, 2017), but across urban-rural divides, and even across places and neighborhoods within the same larger areas (Brown and Enos, 2021) Political scientists have demonstrated the consequences of this geographic polarization for representation (Chen and Rodden, 2013), regional public policy (Nall, 2018; Trounstine, 2018), and growing social cleavages between polarized political parties (Cramer, 2016). But less is known about how living in political homogeneous communities influences voters, particularly how voters are influenced by their neighbors' politics.

Partisan neighborhood effects are worthy of study in part because the literature presents unclear theoretical expectations. Some scholars argue that neighborhoods and local communities play a diminished role in the political and social organization of American lives (Putnam, 2001), and voters are unlikely to be influenced by their neighbors or local partisan context (Abrams and Fiorina, 2012). Yet, researchers continue to find evidence of local influence, including the influence of lawn signs on vote choice, (Green et al., 2016), the flow of political information (Huckfeldt and Sprague, 1987), formation of racial attitudes (Enos, 2014), and a range of social and economic behaviors (Cialdini, Reno, and Kallgren, 1990; Case and Katz, 1991; Kling, Liebman, and Katz, 2007). On the influence of local partisanship specifically, recent research demonstrates that voters who move to more Democratic Zip codes become more likely to donate to Democratic candidates (Perez-Truglia, 2017), and even that exposure to partisan neighbors can influence voter's partisan registration (Brown, 2022). Other studies have demonstrated the capacity for state and county-level political con-

text to influence voter turnout (Cantoni and Pons, 2021), for homogeneous census blocks to increase in-group voting (Barber and Imai, 2014), and for childhood relocations to produce long-term increases in political participation (Chyn and Haggag, 2019) – but in these studies context is either broadly defined or the mechanisms driving participation are unclear.

In this study, I build on previous research to test how living near Democratic or Republican neighbors influences voters' political participation. I propose that exposure to politically like-minded neighbors increases political participation through *partisan activation*: voters are socialized into becoming more active political participants as a function of increased engagement with their community, greater comfort expressing their political affiliations, and in response to social cues from their local in-group. I theorize that this local partisan exposure should induce effects on voter turnout, but also make voters more active political participants by increasing their participation in other forms of *political engagement* - such as volunteering for political campaigns, participating in local political meetings, attending protests, and working to convince others to support their preferred candidates or causes - and by increasing their *partisan expression* - activities that publicly display their partisanship such as putting a political lawn sign in their yard, putting a political bumper sticker on their car, or sporting campaign clothing or apparel.

Testing how voters are influenced by their neighbors' politics is challenging. There are clear issues of sorting in that where people live is correlated with their political preferences, and there are measurement challenges due to studies generally being limited to aggregate summaries of geographic or behavioral data over relatively short time periods. To make progress against these challenges, I construct a panel of voters using administrative voting records from 2012 through 2021. These data catalogue nearly every registered voter for each year in the 30 states that record partisan registration.[1] With these data I connect changes

[1]Alaska, Arizona, California, Colorado, Connecticut, Delaware, Florida, Iowa, Idaho, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Maine, North Carolina, Nebraska, New Hampshire, New Jersey, New Mexico, Nevada, New York, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, West

in individual voting across election cycles to changes in exposure to Democrats and Republicans among voter's closest neighbors, using information on exactly where each voter lives and where all of their registered neighbors live. For identification, I focus on voters that do not change residences across election cycles, measuring the changing partisan demographics around each voter. I further employ a strategy that effectively exact matches voters on the Zip Code they live in, on starting levels of exposure to Democrats or Republicans, on demographic characteristics, and on recent voting history. With these data I measure the effect of changing partisan exposure on turnout. To gather additional data on political participation and underlying political attitudes, I conduct an original e-mail survey of over 45,000 voters, with responses linked to voterfiles, to test the effect of local exposure on political engagement, partisan expression, and how voters perceive and interact with partisans in their neighborhoods.

I find that Democrats become more likely to vote when they see increased exposure across time to Democratic neighbors, and that Republicans become more likely to turnout in response to local Republican exposure. These effects are present in presidential and midterm elections, and general and primary elections. From the survey data, I further find that in-group partisan exposure increases political engagement and partisan expression, with voters being more likely to report they engaged in a variety of political activities when they live around more neighbors of the same party as them. The survey data additionally support mechanisms of social influence, of voters responding directly to neighbors and becoming more comfortable and politically engaged with their community when they are in the local political majority. This evidence includes voters reporting accurately the partisanship of their neighbors, having more contact with Democrats or Republicans when they live closer to them, and even reporting discussing politics more frequently with same-party neighbors.

These results demonstrate that voters' political participation is influenced by where they

Virginia, and Wyoming

live and who they live around, particularly the extent to which their political affiliations match those of their neighbors. While there are many determinants of voter participation and political engagement, local partisan context exerts a consistent influence. In the context of increasing geographic polarization, these effects suggest that while partisan segregation may help political parties overcome collective action problems, it may also exacerbate political divides, making the most active partisan participants the ones with little to no exposure to the opposite party.

2 Local partisan influence on civic engagement

Many citizens consider voting a civic duty, and intrinsic desires to adhere to the norm of voting motivate many voters to habitually participate in politics (Downs, 1957). But voters have also been shown to be particularly susceptible to extrinsic social pressures when deciding whether or not to vote (Gerber, Green, and Larimer, 2008; Gerber et al., 2017). While extrinsic or contextual influence can come from a variety of social relations (Lazarsfeld, Berelson, and Gaudet, 1948), research has demonstrated the potential for local geography to form one of the contexts that might influence voters (Huckfeldt and Sprague, 1987; Wong, 2010; Hopkins, 2010; Hopkins and Williamson, 2010; Enos, 2016*a*; Anoll, 2018).

I argue that the socializing mechanisms that drive political engagement are strongest in politically homogeneous communities. Exposure to neighbors of the same party socializes voters into becoming more active political participants due to increased engagement with their community, greater comfort expressing partisan preferences, and due to social cues from their local in-group as to what are the norms of political participation in their local area. As voters experience increased exposure to in-group partisans, they become aware of shifting partisan norms in their local area and interact more with neighbors of their political party. Being in the political majority makes voters more comfortable with their own political identity relative to local norms (Klar, 2014), and makes more powerful social incentives and

pressures from local peers that drive political participation (Gerber, Green, and Larimer, 2008).

This process can operate through direct and indirect processes of socialization, and is not necessarily dependent on voters having frequent contact or strong interpersonal relationships with their neighbors – although recent survey evidence shows that 44% of adults communicate with neighbors weekly (Parker et al., 2018). This interaction, particularly the extent to which voters engage politically with their neighbors – discussing politics or participating in political social functions with neighbors – should be influenced by whether voters are similar to their neighbors in their political beliefs. Voters may be politically selective in who they develop relationships with (Huckfeldt and Sprague, 1987), or may avoid discussing politics with their opposite-party friends and neighbors (Krupnikov and Ryan, 2022). Thus voters may be most likely to be influenced by neighbors they feel similar to on multiple dimensions (i.e. geographic and political dimensions), and most likely to observe the political behaviors (and thus most likely to emulate said behaviors) of same-party neighbors (Asch, 1955; McPherson, Smith-Lovin, and Cook, 2001). Recent experimental research shows that asking volunteers to ask their co-partisan neighbors to vote successfully increases turnout, demonstrating the mobilizing effectiveness of local networks (Handan-Nader et al., 2021). Such mobilization will be most frequent when voters interact more frequently, and when they are more likely to discuss politics – both of which may be moderated by political homophily.

Even without frequent neighbor contact, voters have been shown to have an accurate sense of the partisan balance of their neighborhoods (Brown, 2022), building an information base about where they live and who they live around from which they infer partisanship. Inputs to this information base can include direct conversations with neighbors, or can be indirect: observing how neighbors talk about politics online or in some other forum, or inferences made about partisanship based off neighbor demographics (Titelman and Lauderdale, 2021) or consumer life-style choices (Lee, 2021).

For voters in the local political majority, this awareness of local partisan norms should make them more comfortable expressing their own political identity. This comfort may lower the perceived costs of political engagement, particularly for political activities that require revealing information about political preferences (i.e. canvassing, speaking at local meetings, etc.) (Verba, Schlozman, and Brady, 1995). Feeling politically similar to one's local community may also create a sense of shared interest, where political participation is a way of contributing to one's community (Wong, 2010; Anoll, 2018). Awareness that one's neighbors are political allies may also make voters more likely to emulate the political behaviors they see their neighbors engage in, as political commonality reinforces voter learning (Cho, 2003; Bond et al., 2012). Lastly, voters may derive expressive benefits from voting for the winning candidate (Fiorina, 1976), and when voters are in the political majority they are more likely to realize this satisfaction and thus more likely to vote. Research on partisan composition at the congressional district-level has demonstrated this pattern: partisan alignment increases in-group turnout (Fraga, Moskowitz, and Schneer, 2021).

For voters in the out-group, local homogeneity may reduce each of the above factors: make voters less likely to politically engage with their neighbors, less comfortable expressing their political identities, and weaken social incentives or pressures for civic engagement. Mutz (2002), for example, demonstrates that voters with heterogeneous political networks participate less frequently in politics, and that this demobilization can be attributed to cross-cutting networks making voters more ambivalent about their political views – and thus less like to get involved in politics – and to the partisan conflict making political participation less desirable because it threatens social relationships. This dynamic is reflective of a broader phenomenon in the United States and other national contexts where local diversity creates impediments to collective action, as group conflict makes residents less likely to engage in local cooperation or invest in public goods (Habyarimana et al., 2007; Putnam, 2007; Enos and Gidron, 2016, 2018).

There are alternative explanations for why exposure to neighbors of one's party may increase political participation. Campaigns may target voters based on low-level partisan composition, increasing turnout as neighborhoods grow more homogeneous (Hersh, 2015). The effectiveness of these mobilization strategies may be augmented by the behavioral processes described above, but this would constitute another political actor acting as a necessary mediator to produce contextual effects, rather than voters responding directly to neighbors.

There are also alternative theories that offer competing predictions. The research on the decline of American communities as centers of political organization suggests that voters are unlikely to be influenced by their neighbors or local partisan context in general (Putnam, 2001; Abrams and Fiorina, 2012). In this framework, neighbors likely have no discernable influence on voters' political participation. But other theories predict that neighborhood influence might produce opposite effects to those predicted by partisan activation. By the logic of collective action, voters living in homogeneous communities may have less incentive to turnout or participate in politics, since they are unlikely to influence the election, and voters in the majority are likely to achieve their desired electoral result absent their own participation (Olson, 1971). Relatedly, theories of group threat predict that voters are mobilized to action when presented with a sizable out-group that threatens their social, economic, or political hierarchy (Key, 1949; Bobo and Hutchings, 1996; Giles and Buckner, 1993; Quillian, 1995; Enos, 2015). Both of these frameworks would predict a U-shaped relationship between participation and local partisan composition, where turnout is highest in mixed partisan communities where groups are in political conflict.

2.1 Voting, political engagement, and partisan expression

In testing the effect of local partisan exposure on political participation, I distinguish between different forms of political participation: voting, political engagement, and partisan expression. While the decision to engage in different types of political activity may come

from common sources, different forms of civic engagement are analytically distinct. For example, Holbein and Rangel (2020) show that while voting in one election causally increases the likelihood voting in later elections, it does not increase participation in other political activities. Thus, theorizing as to how local political homogeneity may influence civic engagement must differentiate between types of political participation and consider how local partisan exposure may influence each differently.

Voters are susceptible to social pressures when deciding whether or not to vote, but voting still happens in relatively anonymity. Whether or not someone votes is public record, as turnout is reported on publicly-available state voter lists, but likely few if any voters are concerned that their neighbors will look them up to make sure they voted. Rather, local partisan exposure should influence voting through neighbor-to-neighbor mobilization, through voters emulating norms of participation among their like-minded neighbors, and by augmenting the internal utility that voters derive from participating in politics (Downs, 1957). To the extent that social pressure is a motivating force, it is an internal pressure that voters place on themselves, rather than an objective risk of censure.

Political engagement consists of a broader set of political activities, ones that, in comparison to voting, are more time-consuming, require social interaction, and are more public (Verba, Schlozman, and Brady, 1995). In the survey analysis I look at political engagement activities including volunteering for a political campaign, attending local political meetings, participating in protests, and trying to persuade others to support one's preferred candidate, party, or political causes. For these activities, many of the same mechanisms that drive voting may still exert influence, but the social and public nature of the activities – these are activities often done with peers, friend, and neighbors, and require expressing one's political preferences – suggest that local context will additionally influence these activities because the perception of social expectation or judgement will moderate whether a voter is willing to take part. For voters in the local majority, participation is less costly - there is less risk

of political judgement for opposing beliefs - and may even be way to derive social esteem. Experimental research by McClendon (2014) finds evidence in support of this influence, as the promise of social esteem motivates voters to participate in contentious political activities like protest. Voters who are political outliers in their community, however, may feel social pressure to suppress their political preferences and withdraw from political engagement.

I also examine the effect of local exposure on actions where voters publicly display their political affiliations. These include putting a political lawn sign in their yard, putting a political bumper sticker on their car, and wearing campaign clothing, buttons or stickers on their person. I characterize these actions as *partisan expression*, since the primary motivation of the action is to alert people one comes in contact with of one's partisan preferences. These actions are overtly for a local audience, and as voters consider the political context in which they live, they may be more or less willing to publicly display their partisanship depending on how it aligns with local partisan norms (Makse, Minkoff, and Sokhey, 2019). The decision to make one's political identity visible is a function of how local political exposure shapes voters' comfort in their neighborhoods and with their neighbors knowing their political affiliations.

3 Hypotheses

I offer the following testable hypothesis derived from the theory of partisan activation through local partisan influence. I test Hypothesis 1 using the panel data of voterfiles, and Hypotheses 2, 3, and 4 are tested using the survey data.

H1 Democrats and Republicans will become more likely to turnout in response to increased exposure to co-partisan neighbors.

H2 Neighborhood partisanship influences how voters perceive and interact with their neighbors. Living around more neighbors the same party as them will make voters more comfortable expressing their political affiliations and more political engaged with their

neighbors.

H3 Exposure to co-partisan neighbors increases political engagement.

H4 Exposure to co-partisan neighbors increases participation in public displays of partisanship.

4 Voter Data

Data for this study come from administrative lists of registered voters containing information on every registered voter in the United States for each year 2012-2021. These data were provided to the researcher by the vendor TargetSmart. Voter records list each registrant's name, residential address, partisan registration, age, gender, race, and vote history.

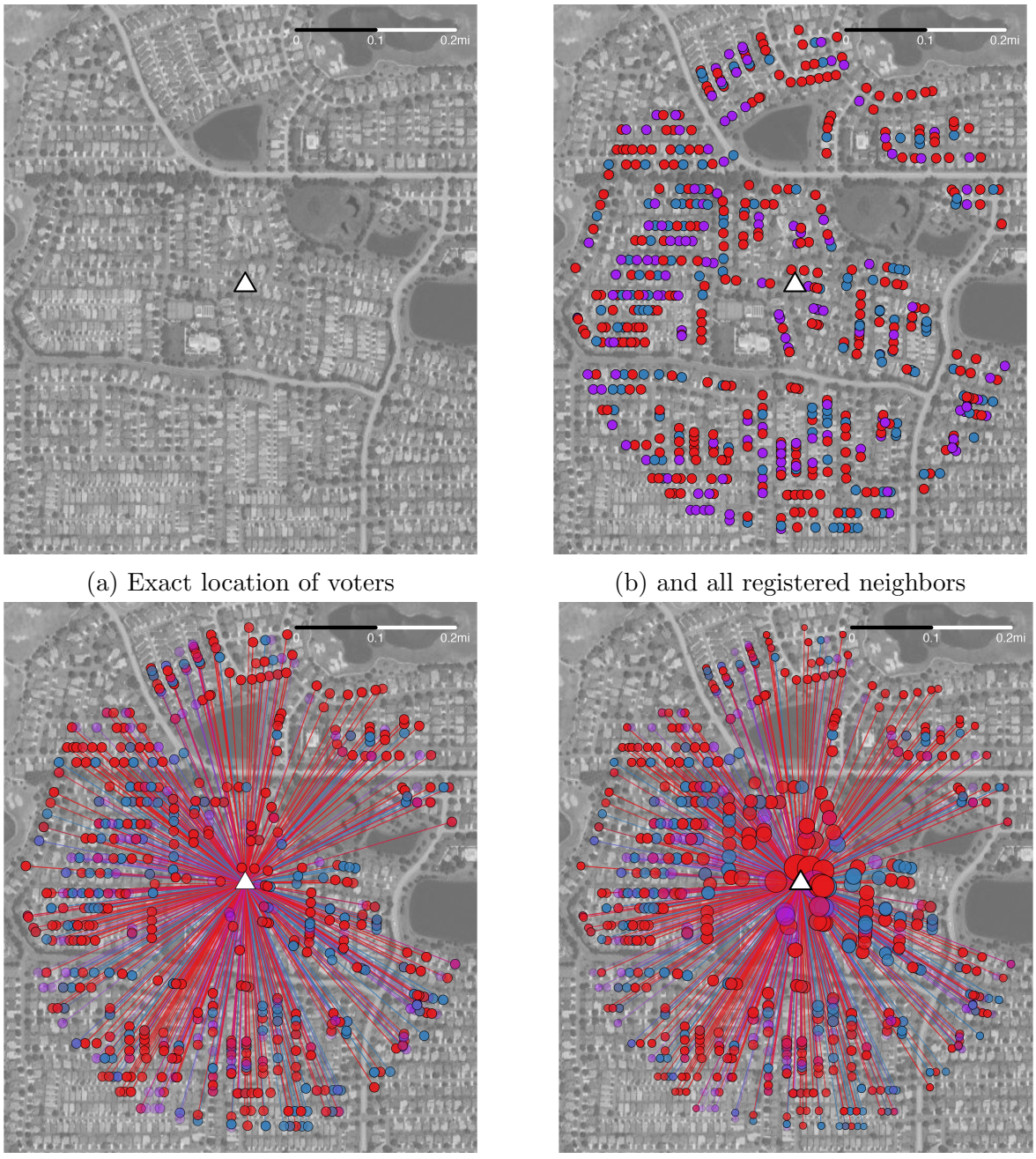
To construct the panel data, I link voters who do not change residences across 4-year election cycles, matching records from the file measuring turnout in the first election to file for the second election, using name, date of birth, and residential address to identify records corresponding to the same voter. I create linked samples of non-movers across 4 different election cycles: 2010-2014 , 2012-2016 , 2014-2018 , and 2016-2020. I do this for the 30 states that record partisan registration on their voter lists, since the analysis requires knowledge of voters' partisan registration.

States can take several months for their voter records to fully report election turnout. Therefore, in order to measure turnout in an election, I must use the voterfile that corresponds to the year after the election. So turnout and other variables in 2020 are measured using the 2021 voterfile, 2016 using the 2017 file, etc. Since the data only goes back to 2012, I use the 2012 file to measure 2010 variables. Thus, the 2010-2014 sample is created by linking the 2012 and 2015 files (51,545,297 voters), the 2012-2016 by linking 2013 to 2017 (49,056,785 voters), 2014-2018 by linking 2015-2019 (55,179,612 voters), and 2016-2020 by linking 2017-2021 (55,900,803 voters).

4.1 Measuring Partisan Exposure

Any study trying to measure exposure to groups in demographic space aims to capture what Massey and Denton (1993) refer to in their canonical study of segregation as "the degree of potential contact or possibility of interaction, between group members." Generally, researchers rely on aggregate summaries of where people live, selecting a geographic unit that constitutes a "neighborhood", and defining exposure to a group as the proportion of that group that lives in the same unit as the voter. Such traditional summaries, however, obscure local variation, making the hard assumption that every person within a unit has the same geographic context. Thus, classical approaches may miss the effect of micro-level contexts. For example, Dinesen and Sønderskov (2015) demonstrate that local ethnic diversity reduces social trust, but only when measured among residents most immediate neighborhoods.

In this study, the quantities of interest focus on the influence of neighbors that voters may be most likely to come into contact with or observe in their daily lives, and the best approach to measuring neighbor influence is to incorporate information on exactly where voters live in relation to Democrats and Republicans. Therefore, I use measures of partisan exposure developed in Brown and Enos (2021), leveraging information on each voter's residential address and the addresses of all their registered neighbors. Figure 1 illustrates this process. For each voter in each year, I identify the 1,000 registrants who live closest to them, calculate the distance they live in meters from each neighbor, and use these distances as proximity weights to calculate the weighted proportion of each voter's nearest neighbors who are registered as Democrats, and Republicans. Registrants in the same household as voters are not counted as neighbors. Voters without partisan registration are categorized as non-partisans. This measure situates each voter at the center of their "neighborhood", producing an exposure calculation that is unique to each voter and avoids issues common to aspatial aggregate measures (White, 1983; Reardon and O'Sullivan, 2004).



(a) Exact location of voters

(b) and all registered neighbors

(c) Calculate distance to each neighbor

(d) Weight by proximity

Figure 1: Illustration of partisan exposure calculation

Panels show the steps in partisan exposure calculation for a Florida voter in 2020 with 0.63 Republican exposure (0.18 Democratic exposure). Voter is indicated by a white triangle and registered neighbors are circles colored blue (Democrat), red (Republican), or purple (non-partisan) based on partisan registration. Panel (a) plots the voter alone. Panel (b) plots the voter with their registered neighbors. Panel (c) connects a line from the voter to each of their neighbors, signifying the distance calculation. Panel (d) increases the size of neighbor points proportional to their proximity to the voter.

Let $Y_{j,t}$ be the partisan registration of neighbor j in year t, $\mathcal{N}_{i,t}$ the set of 1,000 registrants who live closest to voter i in year t, and $D_{i,j,t}$ the distance[2] in meters between voter i and neighbor j in year t. Democratic and Republican exposure for voter i in year t, $DE_{i,t}$ and $RE_{i,t}$, are defined as:

$$DE_{i,t} = \frac{\sum_{j \in \mathcal{N}_{i,t}} \frac{1}{D_{i,j,t}} \mathbb{I}(Y_{j,t} = \text{Democrat})}{\sum_{j \in \mathcal{N}_{i,t}} \frac{1}{D_{i,j}}}$$

$$RE_{i,t} = \frac{\sum_{j \in \mathcal{N}_{i,t}} \frac{1}{D_{i,j,t}} \mathbb{I}(Y_{j} = \text{Republican})}{\sum_{j \in \mathcal{N}_{i,t}} \frac{1}{D_{i,j}}}$$

Table 1 reports the quantiles of the distribution of changes in Democratic and Republican exposure across the 4 time periods, both overall and separately for Democrats and Republicans. Exposure is measured on a 0 to 1 scale, so changes in exposure can range from -1 to 1. The distributions of changes in partisan exposure across years are centered around zero, meaning that both Democrats and Republicans in the sample on average see small changes in exposure to Democratic or Republican neighbors. But the standard deviation of the distribution ranges between 0.07 and 0.10, meaning that many voters are seeing sizable changes in the composition of their closest neighbors.

[2] $D_{i,j,t}$ is adjusted up 1 to avoid dividing by zero.

Table 1: Changes in Exposure Quantiles by Party and Years

Years	Party	N	Exposure Type	Mean	SD	1st	10th	25th	50th	75th	90th	99th
2010-2014	All voters	51,545,297	Exposure to Democrats	-0.01	0.08	-0.24	-0.08	-0.03	0.01	0.02	0.06	0.22
2010-2014	Democrat	21,703,971	Exposure to Democrats	-0.01	0.08	-0.25	-0.08	-0.04	0.01	0.02	0.06	0.22
2010-2014	Republican	16,977,359	Exposure to Democrats	-0.01	0.07	-0.24	-0.07	-0.03	0.01	0.01	0.05	0.21
2010-2014	All voters	51,545,297	Exposure to Republicans	-0.01	0.08	-0.24	-0.07	-0.03	0.01	0.01	0.05	0.29
2010-2014	Democrat	21,703,971	Exposure to Republicans	-0.01	0.07	-0.21	-0.06	-0.03	0.01	0.01	0.04	0.20
2010-2014	Republican	16,977,359	Exposure to Republicans	-0.01	0.08	-0.27	-0.08	-0.03	0.01	0.02	0.06	0.26
2012-2016	All voters	49,056,785	Exposure to Democrats	-0.01	0.09	-0.28	-0.09	-0.04	0.02	0.03	0.08	0.25
2012-2016	Democrat	20,500,712	Exposure to Democrats	-0.01	0.09	-0.29	-0.10	-0.05	0.02	0.03	0.08	0.25
2012-2016	Republican	15,849,975	Exposure to Democrats	-0.01	0.09	-0.28	-0.09	-0.04	0.02	0.02	0.07	0.24
2012-2016	All voters	49,056,785	Exposure to Republicans	0.00	0.09	-0.26	-0.08	-0.03	0.02	0.03	0.08	0.29
2012-2016	Democrat	20,500,712	Exposure to Republicans	0.00	0.08	-0.23	-0.07	-0.03	0.01	0.02	0.07	0.25
2012-2016	Republican	15,849,975	Exposure to Republicans	0.00	0.10	-0.29	-0.09	-0.04	0.02	0.03	0.09	0.32
2014-2018	All voters	55,179,612	Exposure to Democrats	0.00	0.09	-0.28	-0.10	-0.04	0.03	0.03	0.09	0.26
2014-2018	Democrat	22,665,884	Exposure to Democrats	-0.01	0.09	-0.29	-0.10	-0.05	0.02	0.03	0.09	0.26
2014-2018	Republican	17,280,502	Exposure to Democrats	-0.01	0.09	-0.28	-0.09	-0.04	0.02	0.03	0.08	0.25
2014-2018	All voters	55,179,612	Exposure to Republicans	0.00	0.09	-0.26	-0.08	-0.04	0.02	0.03	0.08	0.29
2014-2018	Democrat	22,665,884	Exposure to Republicans	0.00	0.08	-0.23	-0.07	-0.03	0.01	0.02	0.07	0.26
2014-2018	Republican	17,280,502	Exposure to Republicans	0.00	0.10	-0.30	-0.09	-0.04	0.02	0.03	0.09	0.33
2016-2020	All voters	55,900,803	Exposure to Democrats	0.00	0.09	-0.29	-0.10	-0.04	0.03	0.04	0.09	0.26
2016-2020	Democrat	22,912,407	Exposure to Democrats	-0.01	0.10	-0.30	-0.11	-0.05	0.02	0.03	0.09	0.26
2016-2020	Republican	17,517,913	Exposure to Democrats	0.00	0.09	-0.28	-0.09	-0.04	0.02	0.03	0.08	0.25
2016-2020	All voters	55,900,803	Exposure to Republicans	0.00	0.09	-0.26	-0.08	-0.04	0.02	0.03	0.08	0.30
2016-2020	Democrat	22,912,407	Exposure to Republicans	0.00	0.08	-0.23	-0.07	-0.03	0.01	0.02	0.07	0.26
2016-2020	Republican	17,517,913	Exposure to Republicans	0.00	0.10	-0.30	-0.10	-0.05	0.02	0.03	0.09	0.34

5 Panel analysis empirical strategy

To measure the effect of partisan exposure on turnout, I compare over-time changes in Democratic and Republican exposure to individual changes in voting. Measuring such an effect is challenging. As mentioned previously, where voters live is correlated with their political preferences and behaviors and measurement challenges arising from voters changing location across time. Further, any over-time trend influencing where Democrats or Republicans live and whether or not people vote, and any kind of localized shock or political event that might produce geographically concentrated changes in partisanship and turnout, may confound the effect of local exposure.

To address these challenges, I make several design decisions. First, as discussed previously, I limit the analysis to voters that do not change residences between elections, measuring the change in demographics around these voters. This stands in contrast to studies that employ mover designs, connecting changes in voter behavior before and after a move to differences between the origin and destination locations (i.e. Gay (2012); Chetty, Hendren, and Katz (2016); Perez-Truglia (2017); Chyn (2018); Cantoni and Pons (2021)). Such analyses are invaluable, but when someone moves from place to another many things may change beyond their exposure to new neighbor: they live in a different house, in a different residential market, are proximate to different employment centers, are represented by different politicians, are subject to different taxes, etc. As such, it is difficult to connect behavior changes to any specific geographic characteristic. Focusing on non-movers holds constant all time-invariant differences between places. While there are still many things changing around voters, this reduces the dimensionality of the problem, and I further account for time-varying characteristics of place by controlling for changing social, political, and economic demographics in the estimation.

Second, I employ an estimation strategy that exact matches voters based on the Zip

Code they live in, Congressional district, starting levels of partisan exposure, race, party, age group, gender, marital status, and recent vote history. Thus, I am comparing voters that have already made the decision to live in the same local area, are similar along a set of characteristics, but see different over-time changes in exposure to Democrats or Republicans among their closest neighbors. Figure 2 illustrates this strategy. Restricting the estimation to within-strata of groups of voters identical on these matched criteria limits confounding potential to trends or shocks operating within-Zip Code and independent of other matched characteristics. For example, many localized political shocks, such as local policies that motivate voters to vote and may influence partisan geography, are held constant between voters by this strategy. Additionally, ongoing trends in American politics influencing political geography operating through characteristics such as age or race – characteristics that also influence turnout – are accounted for in this design. Furthermore, by matching on pre-trends in the outcome, I can weaken the parallel trends assumption: that voters that see different changes in Democratic or Republican exposure during the treatment period were already becoming different from each other with respect to vote patterns (see Hall and Yoder (2021) for examples of panel designs matching on vote history pre-trends).

I estimate a series of first difference equations, with the treatment as the changes in Democratic or Republican exposure between four-year election cycles (separate models for 2010-2014, 2012-2016, 2014-2018, and 2016-2020), and the outcomes as changes in individual turnout from election 1 to election 2. I do this for both general and primary elections, using presidential primaries for presidential election year analyses. I also estimate the effect of 4-year changes in exposure on voting in later elections of the same type (i.e. midterm or presidential elections). I estimate separate models for voters that were registered as Democrats or Republicans in the first election, and estimate separate models for the effect of changing Democratic and Republican exposure.

The matching strategy is implemented by the inclusion of a strata fixed effect defined

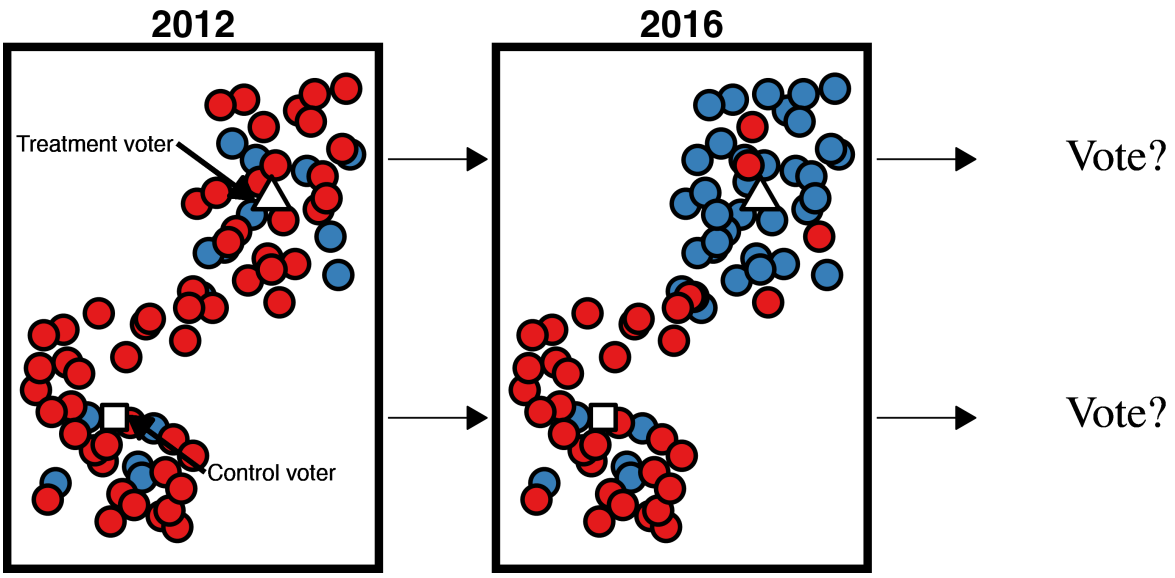


Figure 2: Identification strategy diagram

by the full interaction of the matching variables. Age is coarsened to groups defined by age decile. Starting partisan exposure is coarsened to exposure decile. Vote history variables include turnout in election 1, and the two most recent elections of the same type as elections 1 and 2. So, for example, in the models measuring the effect of changing exposure on changes in turnout from 2012-2016, voters are matched on whether or not they voted in 2004, 2008, and 2012. The models also include controls for Census Block Group changes in proportion White, median age, median household income, proportion college educated, proportion who drive to work, unemployment rate, median year housing was built, median house value, proportion registered, and proportion homeowner. I also control for individual-level changes in marital status across time periods. Standard errors are clustered at the county-level. I estimate models of the form[3]:

$$Vote_{i,t+1} - Vote_{i,t} = \alpha_M + \theta(DE_{i,t+1} - DE_{i,t}) + \boldsymbol{\beta}(\boldsymbol{X}_{i,t+1} - \boldsymbol{X}_{i,t}) + \epsilon_{i,c} \quad (1)$$

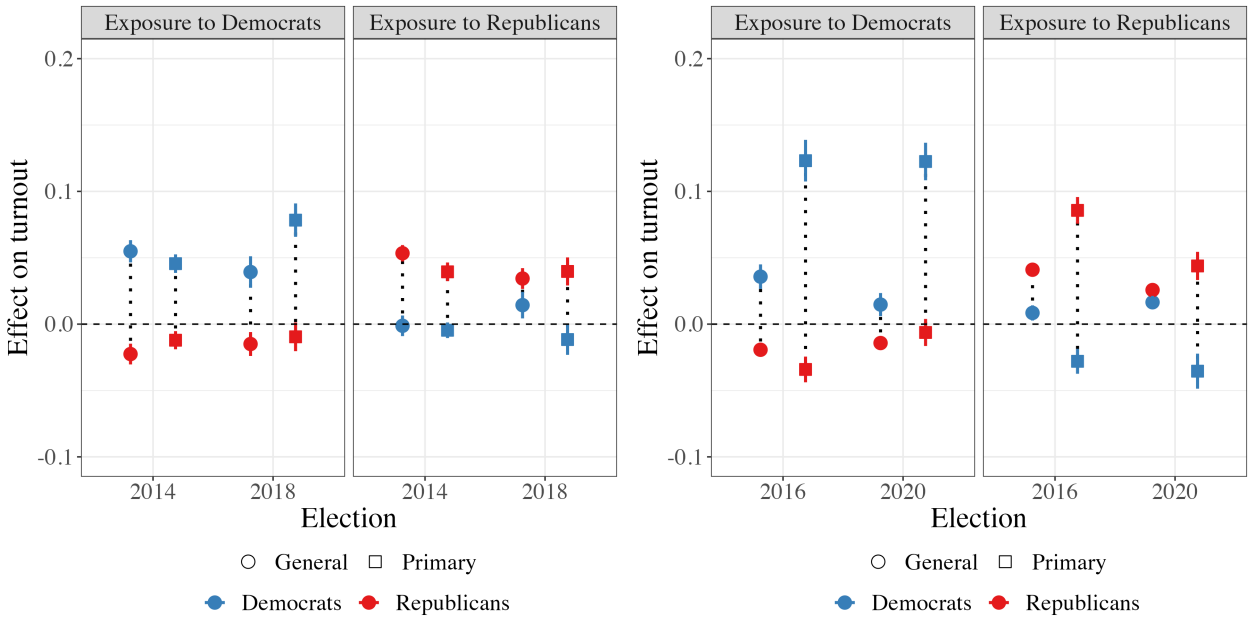
[3]For the future effects, the specification is the same as on the right-hand side, but the outcome is $Vote_{i,t+2} - Vote_{i,t}$.

where $Vote_{i,t+1} - Vote_{i,t}$ is the change in individual turnout from election 1 to election 2, $DE_{i,t+1} - DE_{i,t}$ is the change in Democratic exposure, α_M is the strata fixed effect, $\boldsymbol{X}_{i,t+1} - \boldsymbol{X}_{i,t}$ is the change in the covariates, and $\epsilon_{i,c}$ is the error term. θ is the parameter of interest, the effect of changing Democratic or Republican exposure on turnout.

6 Panel Results

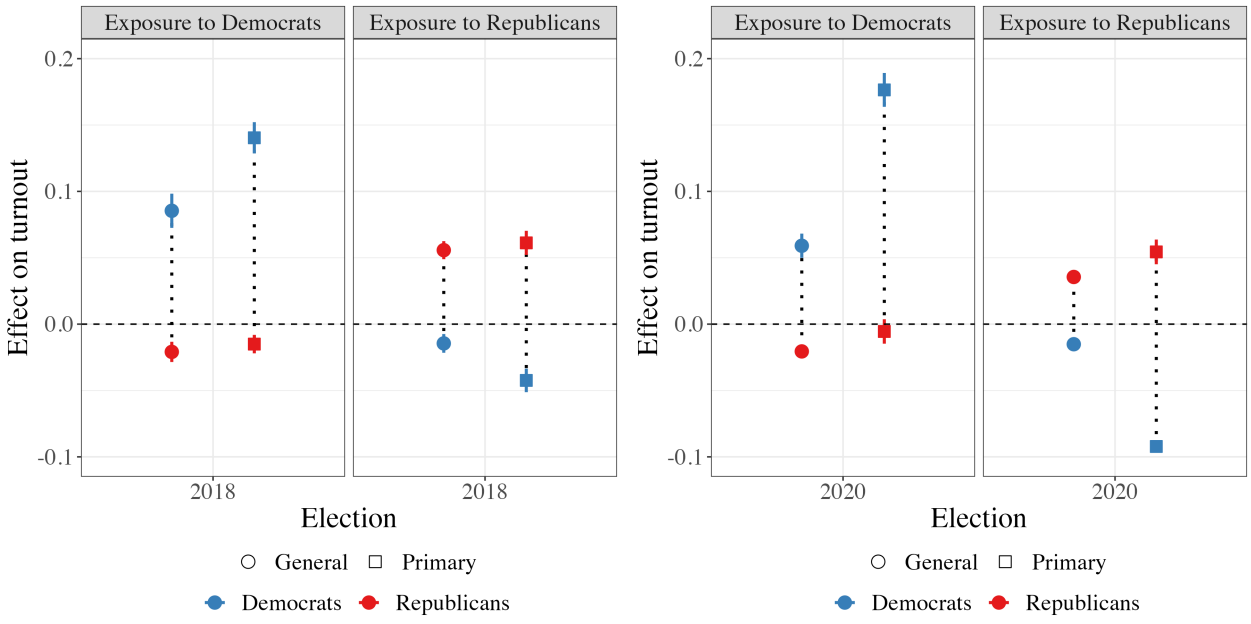
Here I present the results from the models estimating the effect of partisan exposure on political participation in general and primary elections. Figure 3 plots the coefficients on Democratic and Republican exposure from the first difference models, plotted separately by election type (general or primary) and by political party (Democrat or Republican). Panel (a) shows the effect of increases in partisan exposure between 2010 and 2014 on voting in the 2014 and 2018 midterm elections. Panel (b) shows the effects from 2012-2016 on 2016 and 2020 voting. Panels (c) and (d) show the effects of exposure changes from 2014-2018 and 2016-2020 on voting in 2018 and 2020, respectively. Across election cycles, Democrats become more likely to vote in both general and primary elections when they see increased exposure to Democratic neighbors, while Republicans become less likely to participate when their Democratic exposure increases. Conversely, Republicans become more likely to participate in response to increased Republican exposure, and Democrats generally become less likely to participate when their exposure to Republicans increases. In the few cases where Republican exposure seems to increase Democratic turnout, it does so at a rate much smaller than the increase seen for Republicans.

In general, the effect of Democratic exposure on Democratic voting is larger than the effect of Republican exposure on Republican voting, although this disparity is most evident in primary elections, where Democrats in particular see the largest exposure effects. The coefficients in Figure 3 correspond to 100 percentage point change in exposure (i.e. going from 0 to 1), but a more intuitive interpretation is that a Democrat who saw a ten percentage



(a) 2010-2014

(b) 2012-2016



(c) 2014-2018

(d) 2016-2020

Figure 3: Effects of partisan exposure on voting

Points plot the effect of a 1 unit (100 percentage point) increased in Democratic and Republican exposure on turnout. Panel (a) plots the effects for 2010-2014, panel (b) for 2012-2016, panel (c) 2014-2018, and panel (d) for 2016-2020. Effects for Democrats are colored blue, effects for Republicans red. Circular points are the effects for general election voting, square points for primary voting. X-axis indicates the year of the outcome election, which for panels (a) and (b) include the current effect (i.e. effect of 2010-2014 exposure increase on 2014 voting), and the future effects (the effect on 2018 voting).

point increase (approximately a one standard deviation change) in Democratic exposure from 2016-2020 became 0.6 percentage points more likely to vote in the 2020 general election and 1.8 percentage points more likely to vote in the 2020 primary. A Republican who saw a commensurate increase in Republican exposure became 0.4 percentage points more likely to vote in the general and 0.6 percentage points more likely to vote in the primary. Across election years, the effect of a 10 percentage point increase in Democratic exposure on general election participation ranges from 0.2-0.9 percentage points (0.4-0.9 for midterms, 0.2-0.6 for presidential elections), and the effects for primary election participation range from 0.5-1.8 (0.5-1.4 for midterms, 1.3-1.8 for presidential elections). For Republican exposure's effect on Republicans, effect sizes for general elections range from 0.3-0.6 percentage points (0.4-0.6 for midterms, 0.3-0.4 for presidential elections), and 0.4-0.9 for primary elections (0.4-0.6 for midterms, 0.9-1.7 for presidential elections). In general, future effects (i.e. the effect of 2012-2016 increase in exposure on voting in 2020) are similar in magnitude to the current effects (effect of 2012-2016 increase on 2016 voting).

These effects can be compared to effect estimates from other studies that test the mobilizing effect of different political variables. For example, Gerber and Green (2000) analyze Get-Out-the-Vote experiments to show that door-to-door canvassing can increase the likelihood of an individual voting by 9-10 percentage points, while direct mailings produce an 0.5-0.6 percentage point effect. In comparison to face-to-face mobilization, the effect of local partisan context is modest but comparable to less direct forms of mobilization such as mailers. The effect magnitudes are more comparable, however, to other studies that focus on turnout responses to political context and geography. For example, Democrats and Republicans become 0.4-1.7 percentage points more likely to vote when assigned to a district controlled by their party (Fraga, Moskowitz, and Schneer, 2021). In similar studies, Black voters become on average 0.84 percentage points more likely to vote when assigned to a congressional district with a Black incumbent (Fraga, 2016). There are also instances of shocks

to geographic exposure producing more dramatic changes in turnout than the average levels in this study. The demolition of public housing (and the removal of over 25,000 Black residents) in Chicago, for one, produced a 10 percentage point decrease in White turnout (Enos, 2016*b*). In another example, heightened density of homeless and drug-using populations in Boston increased turnout in affected neighborhoods by 9 percentage points, although only in local elections (Brown and Zoorob, 2020). These studies document how acute changes to geographic context can provoke large political responses, while the results in this study represent the average influence of shifting partisan geography across millions and millions of voters.

7 Survey data

The panel data provide evidence of a causal relationship between neighbors' partisanship and political participation, particularly that voters become more likely to vote in response to increased exposure to co-partisan neighbors. To better understand these results, and to test additional hypotheses about how voters' political engagement is influenced by their neighbors' partisanship, I conducted an original survey of 45,139 voters, collecting information on how voters perceive the partisanship of their neighbors, their interactions with Democratic and Republican neighbors, and their participation in political activities including attending local meetings, volunteering or working for campaigns, attending a protest, attempting to persuade people to vote for their preferred candidate, and a public expressing their partisanship through a bumper sticker, lawn sign, or article of clothing.

With these data, I test Hypothesis 2 (neighborhood partisanship influences how voter perceive and interact with their neighbors) by measuring whether voters accurately report the partisanship of their neighbors, whether they interact more with Democratic or Republican neighbors when they live close to them, and even discuss politics with their neighbors. I further examine how local exposure moderates how confident voters are they know the

party of their neighbors, how likely they think it is that their neighbors know their political party, and how comfortable they would be if that were the case. These tests illustrate one potential causal sequence by which increased exposure to co-partisans may mobilize voters: voters experience increased co-partisan exposure, they perceive their neighborhood as containing more in-group members, feel more comfortable and more accepting of their neighbors knowing their political identity, and this comfort spurs contact and even political discussion with co-partisan neighbors. This sequence would thus be consistent with local partisanship changing how voters perceive and interact with their neighbors, potentially activating socializing forces that may spur political participation.

I also use the survey data to test whether exposure to like-partisans increases Democratic and Republican participation in other political activities beyond voting. I group these into two categories: *political engagement* and *partisan expression*. *Political engagement* consists of political activities that require greater involvement, cooperation, and interaction than anonymous activities like voting . I specifically ask about attendance at local political meetings, volunteering for campaigns, attending a protest or rally, and trying to persuade others to support one's preferred candidate. Consistent with Hypothesis 3, I anticipate that Democrats will increase their political engagement when they live around more Democrats, while Republicans will engage in these activities more when they live around more Republicans. *Partisan expression* includes actions that publicly display one's partisanship: putting out a political lawn sign, sporting political clothing, or putting a political bumper sticker on one's car. As stated in Hypothesis 4, I predict that voters will be most comfortable engaging in such actions when they are surrounded by like-minded partisan neighbors.

The survey was administered via email and conducted online, in the field from June 29, 2020 to August 28, 2020. Potential respondents were randomly drawn from e-mail lists connected to voterfile data by TargetSmart. The response rate for the survey was 1.57%. Analysis is limited to the 45,139 respondents who live in states that record partisanship and

verified their identity as matching their linked voter record. Besides the outcomes of interest, the survey also contains questions on demographics, partisanship, strength of partisanship, and ideology.

Table 2 lists the survey outcomes and their respective scales. Voters' perceptions of neighbors' partisanship were measured by asking whether their neighbors are 'All Republicans, nearly all Republicans, more Republicans than Democrats, evenly Democrats and Republicans, more Democrats than Republicans, nearly all Democrats, or all Democrats." Contact with Democrats and Republican neighbors is measured by asking the extent to which respondents have personal contact with neighbors from each party (separate questions). Respondents were further asked how confident they are that they know their neighbors party, on an 4-point scale from "Not confident" to "Very confident". These questions measure how voters perceive and experience their local partisan environment, and test underlying conditions (whether voters know they live around Democrats or Republicans and whether they actually have more contact with party members when their partisan exposure is higher) that would need to exist for neighbors' partisanship to influence voters' political participation.

Table 2: Survey Outcomes

	Survey Outcome	Scale
Partisan context	More Democrat or Republican neighbors	All Rep. – All Dem. (1 - 7)
	Confident I know neighbors' party	Not confident – Very confident (1 - 4)
	Contact with Democrat neighbors	None – A great deal (1 - 7)
	Contact with Republican neighbors	None – A great deal (1 - 7)
	Likely neighbors know my party	Very unlikely – Very likely (1 - 7)
	Share PID with neighbors	Very uncomfortable – Very comfortable (1 - 5)
	Discuss politics with neighbors	Close to never – Nearly every day (1 - 5)
Political engagement	Worked or volunteered for campaign	No – Yes (0 - 1)
	Tried to persuade others to support party	No – Yes (0 - 1)
	Attended local political meeting	No – Yes (0 - 1)
	Attended a protest or rally	No – Yes (0 - 1)
Partisan expression	Put campaign sign in yard	No – Yes (0 - 1)
	Put campaign bumper sticker on car	No – Yes (0 - 1)
	Wore campaign apparel	No – Yes (0 - 1)

The survey also asked several questions designed to measure the extent to which voters may interact politically with their neighbors, and how comfortable they are doing so in response to their neighbors' partisanship. These include a question about how likely voters think it is that their neighbors know their party, on a 7-point scale from "Very unlikely" to "Very likely", and how comfortable they would be if their neighbors knew their partisanship, with options "Very uncomfortable, somewhat uncomfortable, neutral, somewhat comfortable, very comfortable". Voters were also asked how frequently they discuss politics with their neighbors, with options "Never or close to never", "Just a few times a year", "About once a month", "About once a week, but not every day", and "Nearly every day".

For these questions, I anticipate that Democrats and Republicans will have opposite reactions to Democratic or Republican exposure, with Democrats thinking it is more likely their neighbors know their party, being more comfortable with that possibility, and discussing politics more with their neighbors when they live around more Democrats – whereas Republicans' responses to these questions should be negatively correlated with Democratic exposure. Republican exposure should increase Republicans' responses, and produce a negative effect for Democrats. These patterns would indicate that voters are sensitive to local partisan norms when interacting politically with their neighbors, evidencing attitudes that would cause in-group members to feel freer to express themselves politically and thus participate in politics, while out-group members suppress their political identities.

Respondents are also asked to report whether or not they have participated in the following political activities in the past year: volunteered or worked for a campaign, attended a local meeting, tried to persuade others to support a political candidate, attended a local political meeting, and participated in a protest. The survey was run the summer leading up the 2020 election, so electoral campaigns were active in the months leading up to the survey. These outcomes catalogue more intensive and social (relative to voting) political activities that make up political engagement, and voters may be more likely to take part in these activities if they are surrounded by like-minded neighbors. In addition, respondents were asked whether in the past year they had put a political lawn sign in their yard, put a political bumper sticker on their car, or worn a piece of political clothing, button, or sticker on their person. These political activities constitute public displays of partisanship, activities that voters should be more willing to engage in when they are displaying a partisan preference shared by their neighbors. As such, for both political engagement and partisan expression activities, I anticipate that in-group exposure will increase these activities for Democrats and Republicans, while out-group exposure will decrease they activities.

Figure 4 plots the binned scatter plots of the relationship between 2020 Democratic and

Republican exposure and voters' perception of neighbor politics, confidence in their perceptions, level of contact with Democratic or Republican neighbors, predicted likelihood neighbors know their party, level of comfort with neighbors knowing their party, and frequency of political discussion with neighbors. Binned scatter plots are plotted separately for self-reported Democrats and Republicans. Both Democrats and Republicans who live around more Democrats will report that more of their neighbors are Democrats, with a similar relationship for Republican exposure and reporting living around more Republicans. Confidence in this prediction seems to be a function of homogeneity, as there is a U-shaped relationship between partisan composition and confidence in knowing neighbors' partisanship for both Democratic and Republican respondents. With respect to actual contact with Democratic or Republican neighbors, both Democrats and Republicans report more contact with Democratic or Republican neighbors when they in fact live around more neighbors of that party. For the survey questions about likelihood of neighbors knowing one's party, comfort sharing partisanship with neighbors, and political discussion with neighbors, Democrats and Republicans have opposite responses to partisan exposure, with Democrats increasing in these outcomes with Democratic exposure, and Republicans increasing with Republican exposure.

The raw correlations between political engagement, partisan expression and partisan exposure are shown in Figure 5, which generally shows that Democrats that live around more Democrats report higher levels of participation in each political activity, while Republicans are less likely to participate when they have higher Democratic exposure. This relationship is reversed for Republican exposure, which is increasing with Republican participation and decreasing with Democratic participation.

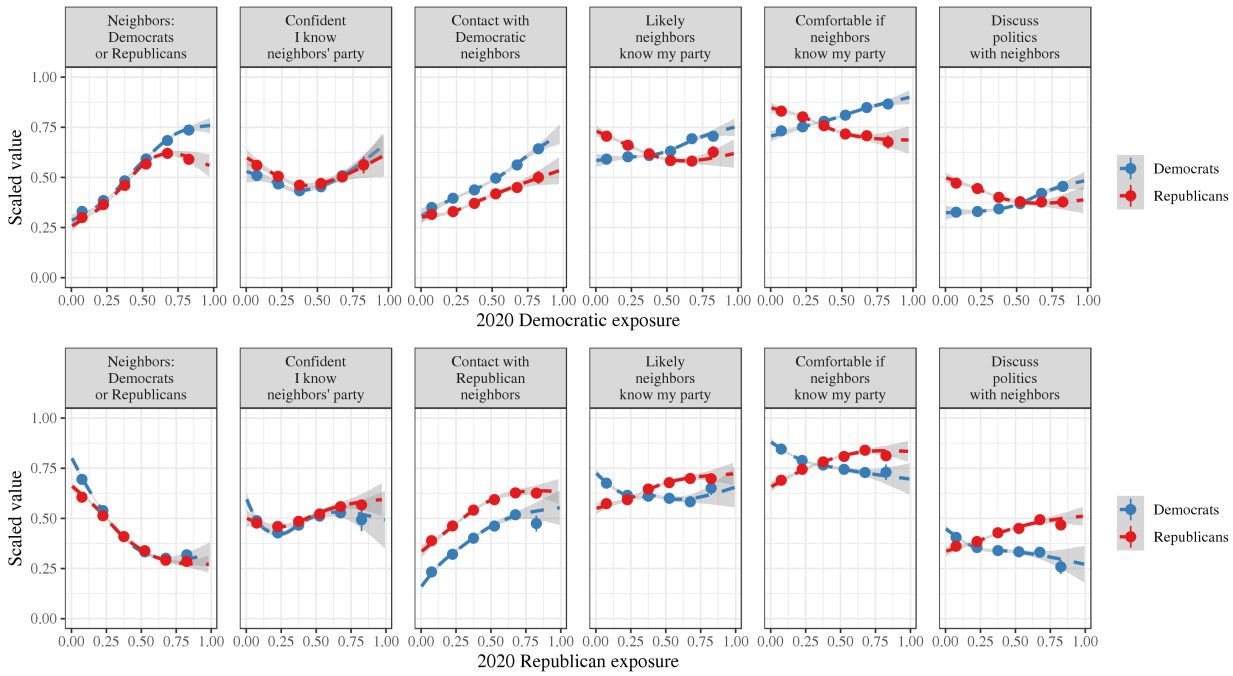


Figure 4: Local partisan perceptions and interactions by Democratic and Republican exposure

Panels plot the binned scatter plots of the relationship between survey outcomes and 2020 Democratic exposure (top row) and 2020 Republican exposure (bottom row). Results are plotted separately for Democrats (blue) and Republicans). Y-axis is scaled values of each outcome to scale them to be between 0 and 1.

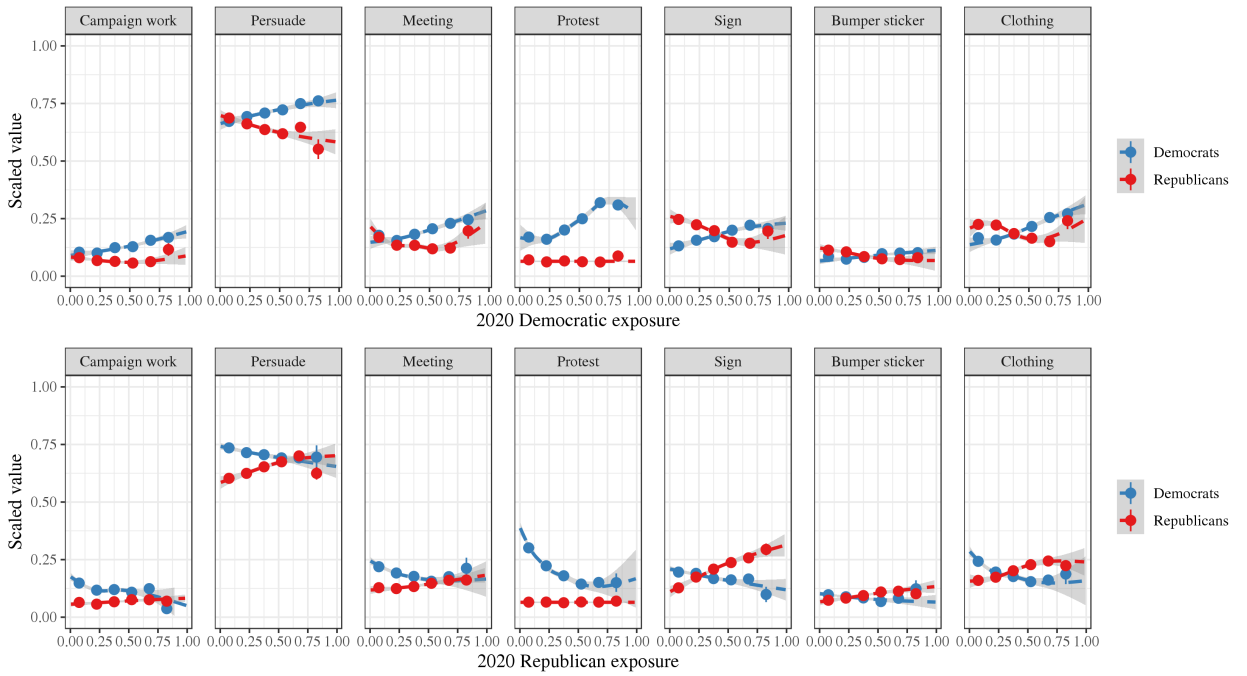


Figure 5: Political engagement and partisan expression by Democratic and Republican exposure

Panels plot the binned scatter plots of the relationship between survey outcomes and 2020 Democratic exposure (top row) and 2020 Republican exposure (bottom row). Results are plotted separately for Democrats (blue) and Republicans). Y-axis is scaled values of each outcome to scale them to be between 0 and 1.

8 Survey empirical strategy

To more rigorously test the relationship between partisan exposure and these survey outcomes, I estimate weighted least squares models, weighted by survey weights to make the sample look more like the full electorate. The models predict each survey outcome as function of Democratic or Republican exposure (separate models for each exposure type), controlling for respondent race, age, gender, educational attainment, homeownership, length of residence, political party, ideology, and marital status. I also control for aggregate Census Block Group characteristics including proportion White, median age, unemployment rate, median household income, proportion college educated, proportion drive to work, median year housing built, median house value, and proportion registered. I further use Zip Code fixed effects to restrict estimation to comparing voters living in the same Zip code, accounting for any unobserved differences across Zip Codes. In order to compare Democratic and Republican responses, I interact each predictor with voter party. In this restrictive comparison, I test whether partisan exposure has an enduring effect on voter attitudes and participation, and whether Democrats and Republicans respond differently to exposure. All models cluster standard errors at the county level. I estimate regression of the form:

$$Y_i = \theta \text{DE}_i + \boldsymbol{\lambda} \boldsymbol{P}_i + \boldsymbol{\tau}(\boldsymbol{P}_i \times \text{DE}_i) + \boldsymbol{\beta}(\boldsymbol{P}_i \times \boldsymbol{X}_i) + \gamma_z + \epsilon_{i,c} \tag{2}$$

where DE_i is 2020 Democratic exposure for voter i, $\boldsymbol{P}_i$ is voter i's self-reported partisanshp, Y_i is the outcome variable, $\boldsymbol{X}_i$ is the vector of covariates, and γ_z is the Zip Code fixed effect. Models for Republican exposure are the same but replace DE_i with RE_i. θ is the effect of a 1 unit (100 percentage point) increase in Democratic (Republican) exposure for Democrats (the omitted category in $\boldsymbol{P}_i$), and $\boldsymbol{\tau}$ is the vector of coefficients for the interaction

of Republican and Non-Partisan with Democratic (Republican) exposure.

9 Survey results

I estimate separate models for each survey outcome. For the main results, I create a *political engagement* index that is the sum of the binary (0,1) variables for volunteering or working for a campaign, persuading others to support a party or candidate, attending a local political meeting, and participating in a protest. I also create a *partisan expression* index that is the sum of the binary variables for sporting a political lawn sign, bumper sticker or apparel. In the regression tables in Tables 3 and 5 I report the results of these indices, but I also report the results separately by political activity in Figure 6.

Table 3 reports the Democratic exposure coefficients and the party-exposure interaction coefficients for the survey outcomes, and Table 5 reports the coefficients from the Republican exposure models. Model 1 shows an enduring relationship between objective partisan context and perceive partisan context, with both all voters reporting that they live around more Democrats or Republicans when they have more exposure to that party. From model 2, Democrats appear modestly more confident they know their neighbors party when exposed to more Democrats, while the interaction coefficient for Republican and Republican exposure is negative and of a magnitude large enough so that the effect for Republicans of Democratic exposure on confidence is negative. In model 2 in the Republican exposure models, however, there is no evidence of a relationship between partisan exposure and confidence for either party. Contact with Democratic or Republican neighbors (model 3) is increasing for all voters with Democratic or Republican exposure, although the effects for Democrats are larger, meaning that Democrats become more likely to come into contact with neighbors of a given political party when they have more neighbors from that party. Taken together, the results in models 1-3 demonstrate that local partisan context changes how voters perceive the partisanship around them and their rates of interaction with neighbors of each party.

Table 3: Effect of Democratic exposure on perceptions of neighbors' partisanship, contact with neighbors, and political engagement.

	Neighbors: Democrats or Republicans	Confident I know my neighbors' party	Contact with Democratic neighbors	Likely neighbors know my party	Comfortable if neighbors know my party	Discuss politics with neighbors	Political engagement index	Partisan expression index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democratic Exposure	1.25	0.39	1.37	0.85	0.56	0.30	0.42	0.32
	(0.14)	(0.20)	(0.28)	(0.25)	(0.15)	(0.12)	(0.11)	(0.09)
Democratic Exposure * Republican	-0.16	-0.51	-0.87	-1.44	-0.99	-0.45	-0.42	-0.34
	(0.18)	(0.24)	(0.31)	(0.32)	(0.22)	(0.15)	(0.14)	(0.12)
Democratic Exposure * Non-Partisan	-0.37	-0.51	-0.31	-1.24	-0.69	-0.39	-0.50	-0.33
	(0.31)	(0.47)	(0.68)	(0.57)	(0.46)	(0.43)	(0.24)	(0.18)
Mean Outcome	3.81	2.41	3.40	4.66	4.07	4.32	1.00	0.42
Num. Obs.	33,973	21,118	32,487	26,299	26,436	37,695	35,598	35,649
R^2	0.631	0.513	0.446	0.489	0.489	0.480	0.438	0.409
R^2 Adj.	0.527	0.304	0.284	0.306	0.307	0.347	0.286	0.249
Covariates	✓	✓	✓	✓	✓	✓	✓	✓
Fixed Effects: Zip Code	✓	✓	✓	✓	✓	✓	✓	✓

Table reports the regression coefficients from the models predicting the effect of Democratic exposure on survey outcomes. The Democratic exposure coefficient is the effect for Democrats, as that is the omitted category in the political party variable. Cluster-robust standard errors, clustered at the county level, are reported in parentheses.

Table 5: Effect of Republican exposure on perceptions of neighbors' partisanship, contact with neighbors, and political engagement.

	Neighbors: Democrats or Republicans	Confident I know my neighbors' party	Contact with Republican neighbors	Likely neighbors know my party	Comfortable if neighbors know my party	Discuss politics with neighbors	Political engagement index	Partisan expression index
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Republican Exposure	-1.53	0.31	1.61	-0.24	-0.40	-0.19	-0.30	-0.17
	(0.15)	(0.22)	(0.28)	(0.28)	(0.17)	(0.14)	(0.12)	(0.12)
Republican Exposure * Republican	0.54	0.07	-0.20	1.23	0.82	0.37	0.38	0.35
	(0.15)	(0.22)	(0.32)	(0.34)	(0.19)	(0.16)	(0.14)	(0.13)
Republican Exposure * Non-Partisan	1.09	-0.16	-0.82	0.00	0.39	0.22	0.35	0.20
	(0.31)	(0.47)	(0.54)	(0.61)	(0.38)	(0.41)	(0.24)	(0.16)
Mean Outcome	3.81	2.41	3.40	4.66	4.07	4.32	1.00	0.42
Num.Obs.	33,973	21,118	32,490	26,299	26,436	37,695	35,598	35,649
R^2	0.631	0.513	0.501	0.489	0.488	0.480	0.437	0.409
R^2 Adj.	0.527	0.304	0.355	0.306	0.306	0.347	0.285	0.249
Covariates	✓	✓	✓	✓	✓	✓	✓	✓
Fixed Effects: Zip Code	✓	✓	✓	✓	✓	✓	✓	✓

Table reports the regression coefficients from the models predicting the effect of Democratic exposure on survey outcomes. The Democratic exposure coefficient is the effect for Democrats, as that is the omitted category in the political party variable. Cluster-robust standard errors, clustered at the county level, are reported in parentheses.

Models 4-6 report the effects of Democratic and Republican exposure on how likely voters think it is that their neighbors know their partisanship, their comfort with such a possibility, and how often they discuss politics with neighbors. Here, in response to both Democratic and Republican exposure, a differential pattern by partisanship emerges. Democrats who live around more Democrats think it is more likely their neighbors know their party, while Republicans become less likely to think this when they live around more Democrats. Republican exposure has no discernible effect on Democrats' perceptions of likelihood, but Republicans are much more likely to think their neighbors know they are Republican when they live around more Republican neighbors. This pattern is reflected in model 5, with Democrats and Republicans becoming more comfortable sharing their partisanship with neighbors when they are in the in-group. This comfort seems to manifest into actual political engagement, as model 6 shows that Democratic exposure increases Democrats rates of political discussion with neighbors and reduces Republican political discussion. Exposure to Republican neighbors has the opposite effect, with a significant positive difference between the effect of Republican exposure on neighbor political discussion for Republicans compared to Democrats. Collectively, these findings suggest the voters respond to in-group exposure by becoming more comfortable expressing themselves politically in their neighborhoods, and by becoming more likely to politically engage with neighbors – evidence of the activating effect of in-group partisan exposure.

The survey analysis further shows that, even in this restrictive comparison, partisan exposure influences political engagement and partisan expression. The coefficient on Democratic exposure in model 7 is 0.42, meaning that an 100 percentage point increase in Democratic exposure increases the number of political engagement activities a voter participates in by 0.42. Put more intuitively, this estimate means that a 10 percent increase in exposure increases the probability of participating in an additional activity by 4.2 percentage points. The coefficient on the interaction of Democratic exposure and Republican partisanship is

-0.42, so the overall effect of Democratic exposure on Republican political engagement is 0. Republican exposure produces a negative effect for Democrats, and a significantly (in terms of the interaction coefficient) more positive response from Republicans (although one that nets out to a small positive effect not statistically distinguishable from zero). So Democrats appear responsive to local partisan context in their political engagement, while Republicans are less so. With respect to partisan expression (model 8), both Democrats and Republicans are are more likely to have sported a bumper sticker, a lawn sign, or political apparel when they live around more co-partisan neighbors. Thus, these models provide strong evidence in support of Hypotheses 3 and 4, that more intensive and more social forms of political participation than voting are also increased by exposure to in-group neighbors, and voters further become more likely to publicly express their partisanship when they are in the local majority.

Figure 6 provides more detail on the participation results, plotting the effect of Democratic and Republican exposure for each survey participation question separately, rather than in an index. Results are plotted separately for Democrats and Republicans. The direction of the patterns seen in the regression tables is largely mirrored in this breakdown, with Democratic exposure increasing Democratic participation in every political activity, with most estimates statistically distinguishable from zero at conventional thresholds, and Republicans generally experiencing no effect from Democratic exposure. Republican exposure generally increases Republican participation and decreases Democratic participation across outcomes, although the pattern is less distinct than for Democratic exposure.

10 Conclusion

As the United States grows more geographically polarized, it is increasingly important to understand the consequences of political segregation for how voters interact with the political process. The work here builds on previous work demonstrating the influence of neighbors'

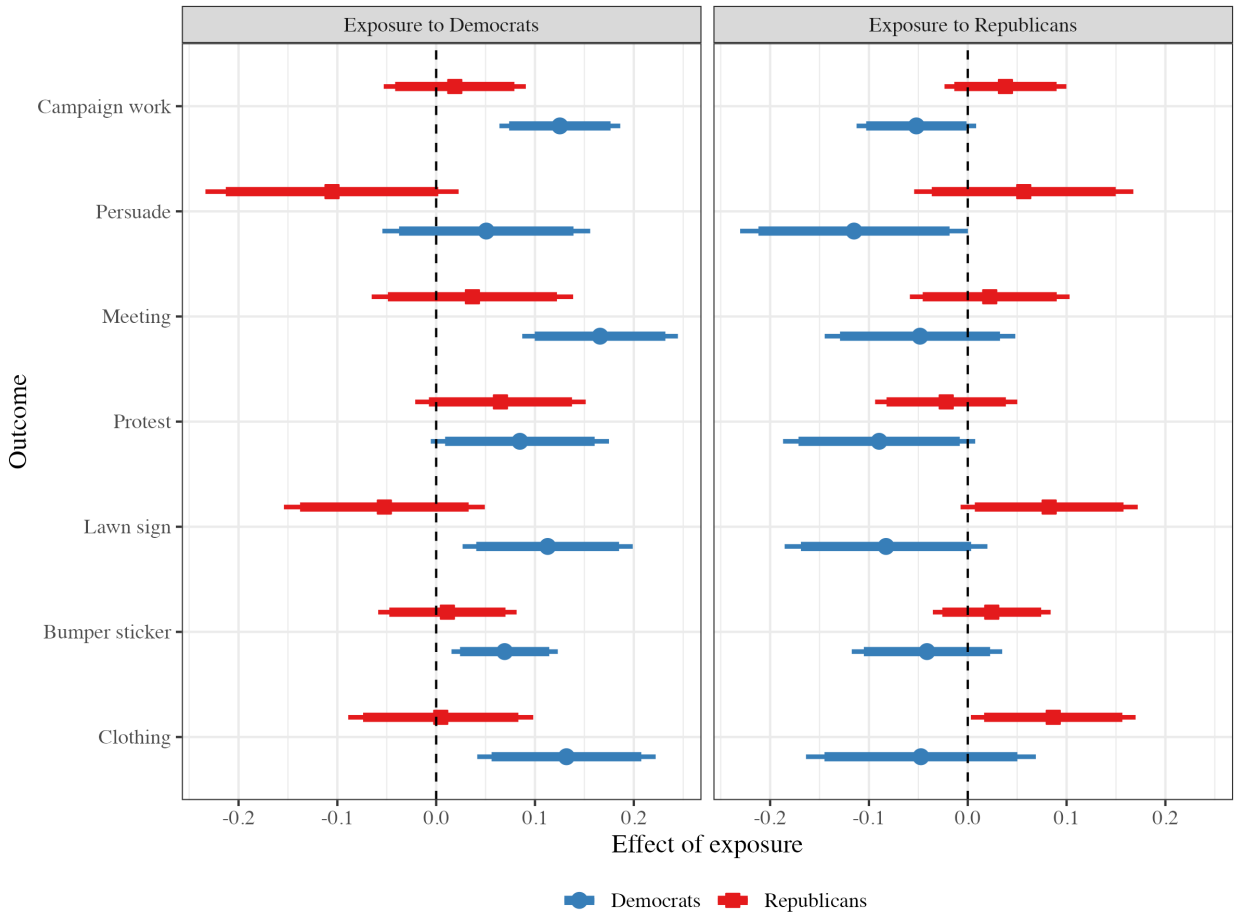


Figure 6: Effects of partisan exposure on political activities

politics on voter partisanship and political attitudes (Brown, 2022) to show a new dimension by which homogeneous political communities are influencing voters. Living surrounded by like-minded partisans has a catalyzing effect on political participation, increasing voting, political engagement, and partisan expression. Furthermore, the effects appear to be the result of voters responding directly to neighbors, internalizing the political norms in their local area and changing their behavior in response.

Just as important as what has been learned in this study is also how it has been learned, with a focus on data sources that connect voter outcomes to their exact residential location. The advent of such micro-level geographic data, particularly information on exactly where voters live in relation to other voters, offers opportunities to better test how voters influence each other in their geographic environments. Both the panel data and the survey data benefit from this approach, and are collected at a scale large enough to make precise comparisons and take causality seriously.

There are limitations to this study upon which future research may improve. The measurement of partisan exposure relies on partisan registration, which while a highly related to partisan preference is not a perfect substitute. Additionally, many voters not explicitly registered to a political party still have a clear partisan preference, and they may influence like-minded voters (Keith et al., 1992). Thus, the results in this study may understate the level of influence to which voters are exposed. Additionally, while the survey data support social influence mechanisms, there are several behavioral models within this umbrella of "social influence" they may drive the effects. It is likely that several of these models are operating in tandem as many outcomes in social science are over-determined. More focused experimental or observational work, however, may be able to disentangle mechanisms.

While high levels of political engagement may be a normative good, this heightened participation comes with a tradeoff: voters are more active, but more active precisely because they are less exposed to competing political ideas. Thus, while these effects demonstrate

the transmission of political participation through geographic networks, they may serve to deepen political divides as voters increasingly live in political enclaves. Furthermore, to the extent that living without exposure to the opposite party makes voters more partisan, or more negatively affective towards the opposite party, then the impact of geography will be to make the most active partisans also the most polarized.

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