It's Not Just What You Have, but Who You Know

Networks, Social Proximity to Elites, and Voting in State and Local Elections*

MATTHEW T. PIETRYKA

Florida State University. Department of Political Science. mpietryka@fsu.edu

DONALD A. DEBATS

Flinders University. Department of American Studies. don.debats@flinders.edu.au

December 5, 2016

Individual-level studies of electoral turnout and vote choice have focused largely on personal attributes as explanatory variables. We argue that scholars should also consider the social network in which individuals are embedded, which may influence voting through variation in individuals' social proximity to elites. Our analysis rests on newly-discovered historical records revealing the individual votes of all electors in the 1859 statewide elections in Alexandria, Virginia and the 1874 municipal elections in Newport, Kentucky, paired with archival work identifying the social relations of the cities' populations. We also replicate our core findings using survey data from a modern municipal election. We show that individuals more socially proximate to elites turn out at a higher rate and individuals more socially proximate to a given political party's elites vote disproportionately for that party. These results suggest an overlooked social component of voting and provide a rare nineteenth-century test of modern voting theories.

*This manuscript has been accepted for publication in the *American Political Science Review.* We thank Sarah John, Wayne Lawrence, Sue Hesch, Anne Harrington, Beth Prior, and Leonie Hardcastle for invaluable help in creating the nineteenth century databases. We thank Daniel Maliniak, Patrick Miller, and Ron Rapoport for sharing their survey and supplemental data from the 2010 Williamsburg election. For thoughtful suggestions, we thank Quintin Beazer, Bill Berry, Bill Claggett, Erik Engstrom, Brad Gomez, Bob Huckfeldt, Dennis Langley, Oana Lup, Jessica Parsons, John Barry Ryan, Editor Martinez-Ebers and four anonymous reviewers. This research also benefited from feedback during presentations at Florida State University, the 2015 Political Networks Conference, and the 2014 Midwest Political Science Association Annual Meeting. This research was funded by grants from the National Endowment for the Humanities, the Virginia Foundation for the Humanities, Flinders University, and the Australian Research Council.

Citizens' personal attributes and attitudes have long been the dominant explanations of individual electoral turnout and vote choice. An innovative and growing body of work demonstrates, however, that many individual voting decisions arise not through the individual's own attributes, but rather through social influence—when one's political behavior depends on that of their associates. Our friends, family, and coworkers help us to learn about politics (Ahn et al., 2013; Eveland and Hively, 2009), influence whether we participate in politics (Klofstad, 2010; McClurg, 2006; Mutz, 2006; Nickerson, 2008; Rolfe, 2012), and help us decide how to vote (Richey, 2008; Ryan, 2011; Sinclair, 2012; Sokhey and McClurg, 2012).

People are connected to one another in a large social network, but most research on social influence in voting focuses on only a few close relationships. People often form hundreds of interpersonal relationships—friends, family, coworkers, neighbors—and are connected to even more individuals through a series of intermediaries—friends' families, coworkers' neighbors, and so on. Compelling theories suggest this extended social network exerts important influence on individual decisions (e.g., Siegel, 2009, 2013), but measurement challenges have impeded their empirical examination. Most observational work on the subject relies on survey batteries asking respondents to identify the three to five people with whom they talk most frequently. These batteries cannot possibly include all of the relevant associates with whom a respondent interacts, nor can they measure effects of associates' friends and other people they are connected to only through intermediaries. Thus, the extended social network's influence on voting has received little attention. Though our friends and family may indeed exert the strongest social influence in our lives, they comprise only a small subset our relationships—and we know little about whether and how these remaining relationships influence voting (Eulau, 1980).

We focus on one mechanism by which these relationships may influence voting, exploring the extent to which individualsâĂŹ turnout and vote choice depend on their *social proximity* *to elites*—the number of intermediaries in the social network between individuals and political elites such as candidates running for office. We rely on three datasets that allow us to measure this social proximity. The first two rest on newly-discovered historical records that reveal the individual votes of all electors in the 1859 statewide elections in Alexandria, Virginia and the 1874 local elections in Newport, Kentucky. Nineteenth century Virginia and Kentucky employed viva voce election law, requiring all votes to be cast by voice at assigned polling places. Every voter's preference for every office was thus recorded by election clerks. Alexandria and Newport are the only two cities under this voting law for which the complete poll books have been recovered. We have conducted archival work to pair these individual votes with detailed profiles for all known inhabitants of these mid-sized U.S. cities at the times of these elections. Our records reveal inhabitants' personal attributes such as age, wealth, place of birth and social attributes including religious affiliation, family structure, occupation, and place of residence. Our third dataset comes from a survey of students at the College of William & Mary prior to the 2010 municipal election in Williamsburg, Virginia. This modern election is useful because it shares with the nineteenth century datasets the ability to identify the network locations of potential voters *and* a candidate running for local elected office.

In each dataset, we show that people who are more proximate to elites in the social network are more likely to vote. When voting, people more proximate to elites from a particular party are more likely to support that party and less likely to support their opponents. Sensitivity analysis and a placebo test suggest these relationships are robust to confounds arising from the clustering of interests and environmental influences within the network. These results suggest that individuals' voting behavior in state and local elections depends not only on their personal attributes and attitudes, but also the vast social network in which they are embedded. This work contributes to the voting literature by specifying a mechanism through which not only individuals' close associates, but also their extended networks, influence individual voting behavior. It also contributes by providing a rare individual-level test of voting theories in an era predating scientific polling.

Social and Atomistic Explanations of Voting

At least since Paul Lazarsfeld and his colleagues from Columbia University surveyed residents of 1940 Erie County, Ohio and 1948 Elmira, New York, empirical studies of political behavior have explored social influence. The Columbia team's focus on individual communities, with respondents in close proximity to one another, emphasizes the interdependence in individual political behavior (Berelson, Lazarsfeld and McPhee, 1954; Lazarsfeld, 1948). The rise of the "Michigan model," focusing on nationally-representative samples rather than individual communities, obscured this interdependence. Social influence is difficult to observe when individuals under study are treated as atomistic actors, geographically distant and socially isolated from one another. Since *The American Voter* (Campbell et al., 1960), the nationally-representative sample has become the dominant paradigm in political behavior research. As a result, our understanding of social influence in voting has developed slowly, relative to the rapid progress made understanding the personal attributes that shape political behavior.

The literature on personal attributes suggests the best predictors of turnout in U.S. national elections are socioeconomic resources such as education, wealth, and occupational status (Wolfinger and Rosenstone, 1980; Leighley and Nagler, 1992; Verba, Schlozman and Brady, 1995) as well as characteristics including race and church membership (for a review of this literature, see Campbell, 2013). Resources also predict turnout in local elections, as do other attributes such as age and home ownership (Oliver and Ha, 2007). For candidate choice, the predominant explanations focus on political attitudes such as ideology and partisan identification (Bartels, 2000; Campbell et al., 1960; Campbell, Green and Layman, 2011). Models of candidate choice also frequently employ as explanatory variables the resources and demographics used to explain turnout (e.g., Miller and Shanks, 1996; Oliver and Ha, 2007). In modern U.S. national elections, economic resources are strongly associated with candidate support (Gelman et al., 2009) and this relationship appears to extend back to the nineteenth century (DeCanio, 2007). Citizens tend to be uninformed about local political issues, but those who show up to vote tend to be highly informed (McLeod, Scheufele and Moy, 1999). As a result, the predictors of candidate choice in high-information national elections also perform well in local elections (Oliver and Ha, 2007).

Over the last few decades, we have made progress understanding social influence by returning to the community-centered designs pioneered by the Columbia team. Huckfeldt, Sprague, and colleagues reinvigorated this literature with their studies of 1984 South Bend (Huckfeldt and Sprague, 1995) and 1996 Indianapolis and St. Louis (Huckfeldt, Johnson and Sprague, 2004). Their surveys include name-generator batteries, which ask respondents to name a handful of individuals with whom they discuss politics. The researchers then interview some of these discussants, allowing them to examine social influence arising between main respondents and their discussants. This methodology provides detailed measurement of a few close relationships, but also comes with a cost. By focusing attention on only a few immediate relationships, name generators obscure social influence arising between less socially-proximate relations.

Social influence is likely to extend well beyond the handful of individuals identified in a name generator. We are all connected in a vast network of relationships. You are connected to your neighbors by geography and your neighbors are connected to their coworkers by occupation. Your neighbors thus act as intermediaries, connecting you to their coworkers. Siegel (2009) develops a computational model of simulated voters to demonstrate the implications of this point. His model suggests that the influence of direct associates is inexorably intertwined with the extended pattern of relationships in the network. Whether two individuals influence each other depends not only on their dyadic relationship, but also on the pattern of relationships they each hold with others, the pattern of relationships that each of their associates hold with others, and so on. Siegel's model suggests we can improve our understanding of voting by developing theory that incorporates these extended network effects, combined with more comprehensive measurement of the social network in which individuals are embedded.

A Theory of Social-Proximity Voting

To move toward a better understanding of how networks influence turnout and candidate choice, we focus on the role of elites. Social ties to elites have long played a prominent role in theories of turnout, if not candidate support. People participate when asked and these requests for participation often come from elites' mobilization efforts (Rosenstone and Hansen, 1993; Verba, Schlozman and Brady, 1995). People are more likely to receive mobilization appeals when they are involved in a variety of civic organizations because these associations lead to more frequent interaction with community leaders and other elites (Verba, Schlozman and Brady, 1995). While this literature has focused on direct contact with these mobilizing elites, we should also expect influence to spread from individual to individual across the network. If you attend church with the county treasurer, she may encourage you to vote, and you may in turn encourage your neighbor to vote. Indeed, several recent studies suggest mobilization appeals influence not only recipients, but also their associates, though the effect dissipates as it spreads from person to person (Bond et al., 2012; Nickerson, 2008).

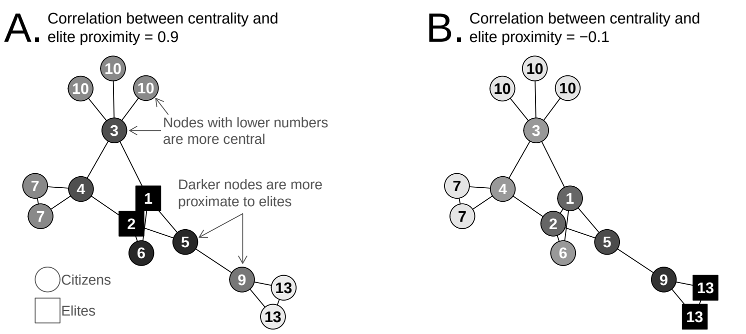
Thus, we should expect the influence of elites to extend beyond initial recipients, spreading through the network. This expectation is consistent with two prominent studies—Nie, Junn and Stehlik-Barry (1996) and Rolfe (2012)—each arguing that individuals' positions in the social network covary with their levels of personal resources, causing scholars who have focused only on the latter to overlook an important social component of voter turnout. Nie, Junn and Stehlik-Barry (1996) argue that socioeconomic resources influence participation, in part, by strengthening resource-rich citizens' social connections with elites. Drawing from the terminology of social network analysis, Nie, Junn and Stehlik-Barry conceive of individuals as nodes in a network, linked together by relationships formed on the basis of geography, occupation, hobbies, and a multitude of other domains. Educated individuals are more central in this network, where network centrality refers to how "well-connected" an individual is relative to others in the network. They argue,

> [E]ducational attainment has a profound effect on the positions of individuals by placing them in more- or less-central network positions. Those with higher levels of formal education are substantially more likely to be found closer to the central nodes of politically important social networks, while those with less education are much more likely to be found at the periphery. Citizens who are at the center of society also end up at the center of political networks [45].

In their view, better educated people participate more frequently because education increases individuals' centrality in society at large, which subsequently increases their social proximity to elites. Better-educated individuals are more central generally because they interact with broader sets of the community; they hold occupations with greater leadership and supervisory responsibilities, accumulate greater wealth, and participate in more voluntary organizations (see also Rosenstone and Hansen, 1993, 80-88). Nie, Junn and Stehlik-Barry (1996, 45) assume this interaction with diverse parts of the network leads to greater interaction with elites, but this assumption warrants testing.

Because people tend to interact with others of similar age, class, and background (McPherson, Smith-Lovin and Cook, 2001), elites and ordinary citizens are likely to occupy different social spheres. Given the paucity of elites relative to ordinary citizens, the most-connected citizens may still be distant socially from elites. Consider the two hypothetical networks displayed in Figure 1. In Part A, the elites (represented by squares) are the most central actors.[1] Consistent with Nie, Junn and Stehlik-Barry's expectations, ordinary citizens (circles) who are more central in this network are also more socially proximate to elites. Consider the third most central individual (Node number 3). She is highly central because she interacts with five people and several of these people also interact with many others. She is also proximate to the elites, interacting with one (Node 1) and only a single intermediary (Node 4) separating her from the other elite (Node 2). In Part B, the elites cluster in a separate part of the network. Here an individual's centrality provides little information about her proximity to elites. Node 3's centrality remains unchanged from Part A, but she is now less proximate to elites because she must pass between three intermediaries (Nodes 1, 5, & 9) before reaching either elite.

Figure 1: Centrality does not Necessarily Imply Social Proximity to Elites.



Note: The figure shows two hypothetical networks where circular nodes represent ordinary citizens, squares represent elites, and lines represent relationships between these individuals. The numbers rank the nodes by eigenvector centrality, with lower values indicating greater centrality. Darker nodes are more proximate, on average, to the elites in the network based on the number of intermediaries separating them.

If elites are not the most central actors, centrality and social proximity to elites may have distinct effects on voting. The effect of network centrality should depend on the

[1] Several common measures of centrality exist. Perhaps the most common measure, degree centrality, equals the number of relationships an individual has in the network. We use instead eigenvector centrality because it takes into account intermediaries, increasing as one forms relationships with more individuals and, unlike degree centrality, as the individuals one is connected to themselves form relationships with more individuals. Social influence studies commonly use eigenvector centrality instead of degree or alternatives such as closeness and betweenness because it imposes fewer assumptions about the paths that information travels through the network (Borgatti, 2005, 62).

voting behavior of the most central actors. Individual decisions on whether and how to vote tend to follow those of their social relations (Lazarsfeld, 1948; Huckfeldt and Sprague, 1995; Rolfe, 2012; Sinclair, 2012). When well-connected people abstain or when they vote Republican, they will encourage many others to abstain or vote Republican as well. Therefore, in elections where the most central actors do not vote, increasing any individual's centrality should decrease her likelihood of voting (Fowler and Smirnov, 2005).

In contrast, we expect social proximity to elites to consistently encourage voting. Social proximity increases people's access to political information, reducing the costs of voting; it magnifies their voice in the political system, strengthening their sense of political efficacy; and it increases social pressure to vote, which has a powerful effect on turnout (Gerber, Green and Larimer, 2008; Panagopoulos, 2010). Our first hypothesis follows from these mechanisms:

> **Elite Proximity-Turnout Hypothesis:** Individuals more socially proximate to a city's elites should be more likely to turnout to vote in elections.

While Nie, Junn and Stehlik-Barry (1996) and Rolfe (2012) focus only on the effect of social proximity on turnout, we argue social proximity to elites should also affect candidate support. Individuals with direct relationships with local candidates tend to feel favorably toward these candidates (Oliver and Ha, 2007, 404, footnote 15). These positive feelings should spread throughout the network through informational mechanisms and social pressure. In the informational route, social proximity to strong supporters of a particular party biases the stream of information an individual is likely to receive, producing more favorable messages about the party and less favorable messages about opposing parties (Downs, 1957; Huckfeldt, Pietryka and Reilly, 2014). Likewise, social pressure coupled with the desire to avoid cognitive dissonance (Festinger, 1957, 1964), should encourage conformity in voting patterns amongst associates (Huckfeldt, Johnson and Sprague, 2002, 2004; Sinclair, 2012). Both of these effects should be strongest for those closest to a party's elites and dissipate with social distance and proximity to elites from opposing parties:

> **Elite Proximity-Support Hypothesis I:** Individuals more socially proximate to elites from a focal political party should be more likely to support that party in elections.
>
> **Elite Proximity-Support Hypothesis II:** Individuals more socially proximate to elites from a political party opposing the focal party should be less likely to support the focal party in elections.

Research Design

To test our hypotheses, we need data identifying the elites and ordinary citizens within a community and relationships connecting these individuals. Previous work on the topic has lacked these data. Nie, Junn and Stehlik-Barry measure social proximity to elites using survey questions from a nationally representative sample, asking respondents whether they were personally acquainted with various elected representatives and media personnel. They show that people who report more acquaintances with these elites also report voting more frequently, even after controlling for personal resources. Rolfe uses survey data to demonstrate that more central people—measured as respondents who discuss politics with more people—tend to report voting at a higher rate, after controlling for personal resources and attitudes. Nie, Junn and Stehlik-Barry lack a measure of general centrality while Rolfe lacks elite proximity. Therefore neither study can separate the effect of centrality from that of elite proximity and, without more detailed network data, neither approach can study individuals connected to elites only through intermediaries.[2]

To better specify the relationships among individuals, we must draw from Huckfeldt and colleagues, focusing on small, well-defined communities. Much like the Columbia studies

[2] Without these data, Rolfe identifies several demographic characteristics to serve as proxies for position in the network, demonstrating their impact on turnout. She also shows that areas more geographically proximate to the homes of electoral candidates tend to have higher turnout rates (Rolfe, 2012, Chapter 8).

before them, Huckfeldt and colleagues make no claims that their samples are representative of the nation as a whole (Huckfeldt and Sprague, 1995, 25). Rather, they chose to sacrifice representativeness to better observe the interdependence among their respondents. Since then, studies in the lab (e.g., Ahn, Huckfeldt and Ryan, 2014; Carlson and Settle, 2016), the field (e.g., Nickerson, 2008; Sinclair, McConnell and Michelson, 2013), and computer simulations (e.g., Fowler and Smirnov, 2005; Siegel, 2013; Rolfe, 2012) have followed this model, contributing new insight into interdependence while eschewing nationally representative samples.

If we hope to make progress, we must accept that no single dataset is likely to provide both detailed measurement of social interaction and easily-generalizable results. Without representative samples, studies of social influence must demonstrate their generality through replication in new contexts. This replication process poses a challenge because social data are rarely gathered in the same way and the unique features of each context and measurement strategy may limit their comparability. Nonetheless, studies of social influence can bolster their generality by demonstrating that the same patterns of social influence arise in different contexts and under different measurement strategies.

With these considerations in mind, we test our theory in three settings: the 1859 state elections in Alexandria, Virginia, the 1874 municipal elections in Newport, Kentucky, and the 2010 municipal election in Williamsburg, Virginia. The central commonality between these studies is they each identify ordinary citizens, elites, and relationships between them. The differences in time, place, and measurement make comparisons between these studies difficult, but allow us to test the robustness of our results across different contexts and specifications. Together, these three settings provide insight into the social logic of voting that no single dataset could accomplish on its own.

1859 Alexandria and 1874 Newport

Alexandria, Virginia rests across the Potomac River from Washington, DC. By 1859, it was a prosperous commercial city, relying heavily on slave labor. Roughly 1,400 of its 13,000 residents were slaves, while another 1,500 were free blacks. Alexandria otherwise featured relatively little ethnic diversity, with eight percent Irish-born, two percent German-born, two percent born elsewhere in Europe, and the remainder born in the United States. Through most of the 1850s, the voters of Alexandria favored the Whigs, but by 1859 with the Civil War approaching rapidly, the Whigs had disintegrated and the Democratic Party had become increasingly dominant in the state. Virginia's 1859 statewide elections therefore pitted the Democratic Party against the newly formed "Opposition Party," comprised largely by former Whig members.

Like Alexandria, Newport also sits on a river—the Ohio—across from a larger urban center—Cincinnati. Unlike Alexandria's mercantile economy, Newport was largely industrial. While similar in size to Alexandria, with almost 16,000 residents, fewer than one percent of 1874 Newport's residents were African American. Newport was nonetheless ethnically diverse, with Irish- and German-born residents comprising about eight and 18 percent of the city's population and another six percent born elsewhere in Europe. The city was in the midst of an economic depression, sparked by a financial panic, that came after years of sustained economic growth. By the 1874 municipal elections, the Democratic and Republican Parties had become the dominant electoral contestants.

With these and myriad other considerations in mind, voters in each city filed into their assigned polling places and each called out their votes for the various offices. These votes were all recorded and we use these records to construct the outcome variables in our analysis. To compliment these poll books, we have worked with a large interdisciplinary team to assemble public records about the cities' social networks at the time of the elections. Using census rolls, tax lists, plat maps, city directories, and other sources, we have identified the familial relations, street addresses, and occupations of each known resident in Alexandria and Newport. Lastly, we have culled church membership lists to link residents to the specific churches they attended.[3] In addition to these social data, the records tell us residents' age, gender, accumulated wealth, and if they own or are in the process of purchasing their home.

These nineteenth century elections are useful for understanding voting more generally because they provide unobtrusive and comprehensive measurement of all known citizens and local candidates in each city. In addition to official records listing attributes such as wealth and home ownership, these are the only data available that provide a census of who voted in an election *and* for whom each citizen voted. Only with unbiased measures of candidate choice can we test Elite Proximity-Support Hypotheses I & II. These data provide an opportunity to define the network using the same variables—family, neighbors, occupation, and church—that best predict relationships in modern political discussion networks (Huckfeldt et al., 1995, 1032). More generally, these measures predict many forms of human interaction across a range of regions and eras (for a review of this literature, see McPherson, Smith-Lovin and Cook, 2001) including nineteenth century U.S. cities (Tilly, 2007, 80). We have these measures for the entire city populations, providing a more detailed and comprehensive image of the cities' social networks than can be afforded with most survey samples.

Despite the advantages of these data, nineteenth century elections differ in many ways from those of today. Dramatic changes in social and political life have occurred since the nineteenth century, limiting their comparability to modern elections. These changes raise a question: are theories developed through the use of modern survey data relevant for understanding voting in this earlier period (Shortridge, 1980, 617)? We are aware of no individual-level analyses of turnout and few of vote choice that test modern theories of voting in the nineteenth century.[4] Thus, a secondary contribution of our analysis is to study

[3]We have a complete census of all 13 churches known to exist in Alexandria at the time of the elections, but our data includes only six of the 15 known churches in Newport.

[4]For earlier individual-level studies of nineteenth-century vote choice using poll books, see Bohmer (1977,

the extent to which resource-based models help us understand nineteenth-century voting.

We would also like to test our theory in a modern election, but the archival methods we use to collect the nineteenth century data cannot be replicated for recent elections. Without viva voce poll books, no archival work can provide a measure of vote choice. One could instead document public demonstrations of support such as displaying yard signs (e.g., Makse and Sokhey, 2012) and identify voters using state voter files. This approach will not disclose the identities of individuals who do not display a sign or register to vote, posing a significant selection problem for an individual-level study. One could pair these data with U.S. census records to enumerate an entire city population, but this path is precluded because individual census records remain closed for 72 years. The data we use to identify relationships between individuals would also be difficult to obtain. We rely on the census for occupational data, city tax records for neighbors, and a combination of the two for family. The city tax records are a historical artifact; nineteenth century cities taxed personal as well as real property, encouraging tax collectors to visit every household and enumerate all residents therein. Modern tax and property records may reveal the owner of a parcel, but provide no information about who resides there—impeding measures of family or neighbors. We identify religious membership from the archival records of the religious institutions, including member lists, baptisms, marriages, and deaths which have been deposited in public archives or which the institutions were willing to make available as historical documents. Religious institutions are unlikely to share such information about recent members.

For these reasons, we instead test our theory in a modern election using a survey of college students. College records overcome the challenge of enumerating all community members while a survey-based name generator, combined with housing records, map relationships

1978), Bourke and DeBats (1977, 1980, 1985, 1987), DeBats (2009), and Rozett (1977). For work using nineteenth-century county directory data to study the relationship between individuals' resources and self-reported partisanship, see Hammarberg (1977) and DeCanio (2007). For earlier individual-level work examining spatial, rather than social, distance in shaping nineteenth-century voting behavior and partisan preferences, see Bourke and DeBats (1995), DeBats (2004, 2008, 2011) and DeBats and Lethbridge (2005). For an assessment of the continuing divergence between the explanatory power of individual and aggregate political data, see Bourke, DeBats and Phelan (2001).

between these individuals. These data provide a more detailed map of the network than can be obtained through either modern archival work or larger-community studies including Huckfeldt & Sprague's innovative survey designs. To test our theory, we also require elites in the network, but few college students run for elected office. We leverage a rare exception in which a student ran for—and won—a city council seat.

2010 Williamsburg

The May 2010 Williamsburg municipal election occurred in the wake of several recent city council decisions affecting student life at the College of William & Mary, a liberal arts college located in the city. In particular, the council recently adopted a strict noise ordinance and banned more than three unrelated individuals from living together in a single dwelling. A central decision for voters in this election was whom to elect for city council. One of these candidates, Scott Foster, was concurrently a William & Mary student.

We rely on a survey fielded by Daniel Maliniak, Patrick Miller, and Ronald Rapoport during the election targeting all current William & Mary students (Miller et al., 2015). Most of our data are drawn from the preelection wave, which received responses from 2,740 students, representing just under 50% of the student body. We also draw some data from a postelection wave which received 992 valid responses constituting a sixth of the student body.[5] The social network we explore contains all students at the school, including Scott Foster, allowing us to measure each student's social proximity to this elite. We use two methods to identify relationships between students. First, the preelection survey asked respondents to identify their five closest friends at William & Mary. Second, we obtained

[5]The survey was administered online and all 5,726 students were invited via email to participate. Students who did not respond within the first two weeks were recontacted with an abridged version of the survey, including only key demographic items and the name generator. The AAPOR participation rate for non-probability internet panels is equal to the number of usable responses divided by the number of people invited to participate (The American Association for Public Opinion Research, 2015, 40). We define usable responses as the respondents who affirmed in the survey that they were 18 years or older and had at least one direct connection in the social network, yielding a preelection participation rate of $\frac{2{,}590}{5{,}726} = .45 = 45\%$ and a postelection participation rate of $\frac{992}{5{,}726} = .17 = 17\%$.

housing records for all 3,655 students living on campus, allowing us to identify relationships between roommates, even if they did not respond to the survey. These housing data add substantially to the network because 64% of students live on campus.

The Williamsburg data address several limitations of the nineteenth century studies. First, they allow us to test our theory in a modern municipal election because they provide measures of students, an elite, and the relationships connecting them. Second, by using a name generator and roommate records to identify the network, we obtain more concrete measures of relationships than those afforded by archival work—relationships are explicitly identified rather than imputed based on shared attributes. By relying on name generators, we test the robustness of our results using the typical measurement strategy of recent research on social influence in political behavior. Third, the survey measures attitudes including partisan identification and behaviors such as participating in previous elections, providing controls for established predictors of voting unavailable through archival work.

Limitations

Our three datasets share an ability to measure the attributes of everyday citizens, elites, and relationships connecting these groups. Like previous studies of social influence, the features of the data that make this measurement possible also limit their generality. The elites in all three datasets are candidates for local offices and elite proximity may have different effects in national elections, which feature broader, less-connected constituencies and larger mobilization efforts. Yet local elections are of great significance; due to the vast number of local governments, local elections occur in much greater number than national elections and locally-elected officials are responsible for implementing policy and allocating a large proportion of the nation's resources (Trounstine, 2009).

The college-age citizens in the Williamsburg data may be more susceptible to social influence than older citizens. The nineteenth century data overcome this problem, but the public nature of the vote may also amplify social influence. Worse, it may have facilitated patronage—the partisan use of public office to appoint individuals dedicated to the welfare of a political machine. If present in our data, patronage may increase elites' social influence relative to modern elections. But patronage systems typically arose in large cities which provided governing parties with many job openings to exchange for party loyalty. Nineteenth century Alexandria and Newport were too small and provided too few services to generate many such jobs. We have nonetheless searched for evidence of patronage in these cities, finding evidence that it occurred, but only rarely. The public vote also opens the possibility of vote buying and coercion, but like patronage we believe these behaviors were rare in these elections. See Online Appendix A for the evidence on which we base these conclusions.

The many differences between the nineteenth century data and the Williamsburg data limit our ability to draw connections between them. For instance, the nineteenth century networks feature many elites from different parties while the Williamsburg network features only a single elite. Citizens embedded in these different networks are likely to encounter different information and face different forms of social pressure. The network measures also differ with these two approaches. We assume in the nineteenth century networks that people from the same family, occupation, church, or block interact with one another. This assumption is often correct (Huckfeldt, 1983), but produces only a probabilistic measure of the network.[6] This network undoubtedly overlooks some important relationships while also imputing connections between people who do not know each other directly. The Williamsburg data avoid this problem, providing more certain measures of relationships. By focusing on close friends and roommates, these relationships are likely to be stronger and more personal than those captured in the nineteenth century data. The many differences between these studies provide a strong test of the robustness of our results, but they prevent us from identifying the specific mechanisms that generate these broad patterns. As we

[6] In this manner, these measures are analogous to aggregated relational data, which are obtained through survey items that probabilistically approximate the social distance between survey respondents and various subgroups of interest (Killworth et al., 1998; McCormick et al., 2013).

proceed, we therefore pay careful attention to the confounds that may lead us to ascribe social influence where none exists.

Perhaps the largest set of confounds we face are not limited only to our design, but pervade virtually all cross-sectional studies of social influence (Fowler et al., 2011). Regardless of how the network is measured, people who are socially proximate to one another inhabit similar environments and share similar interests. In our study, shared environments can confound our conclusions when people who are socially proximate to each other encounter the same external pressures to vote. A pair of neighbors or college roommates may each turn out to vote, not because one influenced the other, but because they were each canvassed by the same get-out-the-vote drive. Shared interests arise because people interact primarily with others who are similar to themselves (McPherson, Smith-Lovin and Cook, 2001). Those shared interests can confound our estimates if they lead socially proximate individuals to vote similarly to one another. In the nineteenth century data, people who attend the same church as an elite may share the elite's economic interests, beliefs, and values. These shared traits may also influence their political behavior. In the Williamsburg data, people may be friends because of their shared interest in politics and hence the similarity in their voting may be a cause of the friendship rather than the consequence. Our data allow us to control for some of these shared interests, but we cannot eliminate these confounds. We therefore subject our estimates to sensitivity analysis, originally developed by VanderWeele (2011), in order to assess the robustness of apparent social influence effects to these and other unobserved confounds.

Constructing the Nineteenth Century Networks

Our goal is to measure the social proximity of an individual, i, to a city's elites. We also must measure separately the social proximity of an individual to each party's elites. We define the social distance between individual i and a set of elites [to be denoted `Social`

`Distance to Elites`$_i$] as the average—across all members of the elite set—distance between individual i and elite j.

The distance between individual i and elite j, d_{ij}, is measured by first determining the social distance between every pair of individuals in the city. To measure this distance between any pair, we assume two individuals are more closely connected the more direct social connections between them. We therefore count the number of direct social connections between each pair using each of four possible means that can be observed in our data:

- whether they are in the same family (i.e., they share the same surname and live in the same residence),
- whether they are neighbors (i.e., they live on the same block and the same side of the street),
- whether they are confreres (i.e., they share an occupation), and
- whether they are affiliated with the same church.

We also allow for paths passing through intermediaries; if Tom and Dick attend the same church and Dick and Harry have the same occupation, then Tom and Harry are connected on a path passing through Dick. With these assumptions, we apply Dijkstra's shortest path algorithm, which finds the shortest path between any two individuals (For details, see Cormen et al., 2009, 658). The resulting social distance measure holds larger values for pairs of individuals with more intermediaries between them and fewer direct social relationships along the path. To arrive at d_{ij}, we then extract the distance between each individual i and elite j. Individuals not connected to an elite by any path length are coded as one plus the maximum path length to this elite.

In Alexandria, we define elites as the candidates who ran for city-wide office in the local elections held March 1, 1859.[7] These elections were held just three months before the May

[7]These positions were: Mayor, Auditor, Attorney, Superintendent of Gas, Superintendent of Police, Chief

29 statewide elections on which we base our outcome measures of turnout and vote choice. In total, 19 Opposition Party candidates, seven Democrats, and three candidates with no known party affiliation ran for these positions, including multiple candidates of the same party competing against each other for several positions.[8] In Newport, we define elites as the candidates running that year for one of the 11 city-wide elected offices[9]—the same elections on which we base our outcome measures of turnout and vote choice. Republicans fielded a candidate for each office, but Democrats did not field nominees for City Treasurer or City Engineer. We could not determine which of the six people named James Smith in our records was the Democratic candidate for Weights and Measures. We are hence left with eight Democratic and 11 Republican elites on whom we base our measures of elite proximity.

Tables B1 and B2 in Online Appendix B provide descriptive statistics for the social distance measures and all other variables used in the analyses. In Alexandria, the average social distance between an eligible voter and each candidate, regardless of party, is 9.9 (*Standard Deviation* = 2.15). Eligible voters average the same distance to each party as well, with an average distance of 9.9 ($SD = 2.14$) to each Opposition Party candidate and 9.8 to each Democratic candidate ($SD = 2.25$). In Newport, eligible voters average a social distance of 11.0 ($SD = 1.99$) to each elite, 11.2 to each Democratic candidate ($SD = 1.98$), and 10.8 to each Republican candidate ($SD = 1.99$).[10] For all analyses, we standardize these measures with $mean = 0$ and $SD = 1$. To aid in presentation, we then multiply these

---

Engineer of the Fire Department, Clerk of the Market, Measurer of Wood and Bark, Gauger, Surveyor, Measurers of Lumber (two positions), and Assessors (two positions).

[8]Since the states were not in control of a ballot, we identify party affiliation using either the party ticket or newspaper advertisements which listed the party affiliation of candidates. In the few cases where candidates' party affiliations were not listed in either source, we checked the votes of those candidates in the May state-wide elections. We found no cases in which a candidate voted in the May elections against their party, as identified with the party ticket or newspaper ad.

[9]These positions were: President of the Council, City Clerk, City Treasurer, City Attorney, City Jailor, City Engineer, City Physician, Market Master, Wharf Master, Weights and Measures, and Street Commissioner.

[10]These distances are inflated only slightly by individuals who are disconnected from all elites. In Alexandria, omitting the 43 disconnected individuals produces a mean elite distance of 9.7, Opposition distance of 9.7, and Democratic distance of 9.6. In Newport omitting the 32 disconnected individuals reduces the mean elite distance to 10.9, Democratic distance to 11.1, and Republican distance to 10.7.

distance measures by -1 so larger values indicate greater proximity to elites.

Constructing the Williamsburg 2010 Network

To measure `Social Distance to the Elite`$_i$ in Williamsburg, we rely on the name generator from the preelection survey, which asks respondents to identify "the first and last names of up to five of your closest friends who attend William & Mary." There is a direct connection from individual i to individual j, if i named j as one of her five closest friends. Using the on-campus housing records, we also code a pair of individuals as connected if they share a room. We restrict our analysis to the 2,590 respondents who had at least one direct connection in this network.

`Social Distance to the Elite`$_i$ equals 1 + the number of intermediaries on the directed shortest path running from individual i to Foster, the William & Mary student running for city council. For the 85 students who cannot reach Foster on a path of any length, their social distance measure equals 1 + the maximum distance in the sample ($Maximum = 11$).[11] Again, this approach yields a measure of distance between pairs of individuals where higher values indicate more intermediaries between the pair. Respondents were on average connected to Foster on a path length of 6.2 ($SD = 1.8$).[12] As with the nineteenth century data, we standardize this elite distance measure with $mean = 0$ and $SD = 1$ and then multiply by -1 so larger values indicate greater proximity to the elite.

Empirical Results

Using these measures, we first explore social proximity's relationship with turnout and vote choice in the nineteenth century. We then examine the 2010 election.

[11] We have replicated these analyses instead replacing students who cannot reach the candidate on a path of any length with the average distance to the candidate, yielding similar results.

[12] After removing the 85 students who are not connected to the candidate, the mean decreases from 6.2 to 6.0.

Turnout in the Nineteenth Century

Table 1 displays individual-level logistic regressions modeling turnout in Alexandria and Newport. For each city, Model 1 includes only personal attributes as explanatory variables. Model 2 introduces as an explanatory variable an individual's weighted eigenvector network centrality. Model 3 introduces our measures of elite proximity. The models are restricted to eligible voters.

The models control for several resource-based covariates, including wealth, occupational status, and home ownership. In Alexandria, where we have complete church records, we control for whether someone was on a church membership list (Campbell, 2013, 38). Recall that we use church attendance as a form of connection in the social network. We include this control to defend against the possibility that the relationships exhibited by the elite proximity measures are spurious, emerging instead due to differences between church members and nonmembers.[13] In Newport, where blacks had the right to vote, we control for race. In both cities, we also control for age. We expect wealth and age to have diminishing returns (see Rolfe, 2012, 140) and therefore also include the natural log of both variables (we set the minimum wealth to $1 before this transformation).

Predictors of turnout commonly used on modern data receive mixed support in these elections. Socioeconomic resources perform as expected in Alexandria. The models suggest, all else equal, people who have greater wealth, have higher-status occupations, and own homes are all more likely to vote.[14] In Newport, greater resources do not consistently distinguish voters from nonvoters. All else equal, wealthier individuals turnout at *lower*

[13]Tables C1 & C2 in Online Appendix C provide models with additional controls for religion and church membership.

[14]For instance, the results from Alexandria Model 3 suggest that someone with only a dollar of household wealth (the minimum) will have a .55 probability of voting compared to .60 for people with $1,000 of wealth, an increase of .05 (*First Difference* = .60 − .55 = .05; *95% Confidence Interval* [.01, .09]). People with $2,000 of wealth, however, are no more likely to vote than those with $1,000. These and all reported probabilities and confidence intervals are calculated using simulations from the posterior distribution while setting other explanatory variables to their medians.

Table 1: Estimates from a Model Predicting an Individual's Probability of Voting Using his Social Proximity to Elites and Other Variables (Based on the Statewide Election in 1859 Alexandria, VA and the Local Election in 1874 Newport, KY)

	Alexandria			Newport		
	(1)	(2)	(3)	(1)	(2)	(3)
Household wealth (thousands of dollars)	−0.011*	−0.010*	−0.010*	−0.001	−0.001	−0.002
	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
ln(Household wealth)	0.063*	0.041	0.043*	−0.072*	−0.066*	−0.067*
	(0.021)	(0.022)	(0.022)	(0.015)	(0.015)	(0.015)
Mid-status occupation	0.687*	0.417*	0.290*	0.145	0.333*	0.191
	(0.103)	(0.119)	(0.123)	(0.082)	(0.100)	(0.104)
High-status occupation	0.864*	0.633*	0.587*	0.247	0.435*	0.404*
	(0.186)	(0.193)	(0.194)	(0.189)	(0.198)	(0.200)
Owns home?	0.765*	0.802*	0.781*	1.641*	1.652*	1.578*
	(0.150)	(0.151)	(0.152)	(0.097)	(0.098)	(0.099)
Age (years)	−0.091*	−0.097*	−0.099*	−0.004	0.000	−0.007
	(0.020)	(0.020)	(0.021)	(0.015)	(0.015)	(0.015)
ln(Age)	4.378*	4.615*	4.738*	−0.141	−0.342	0.010
	(0.808)	(0.810)	(0.817)	(0.524)	(0.529)	(0.537)
Is church member?	0.881*	0.879*	0.582*	—	—	—
	(0.106)	(0.107)	(0.125)	—	—	—
Is African American?	—	—	—	1.440*	1.315*	1.298*
	—	—	—	(0.425)	(0.428)	(0.427)
Is U.S. born?	0.723*	0.606*	0.543*	0.129	0.171	0.211*
	(0.119)	(0.123)	(0.124)	(0.086)	(0.087)	(0.088)
Network centrality (Z score)	—	−0.162*	−0.235*	—	0.096*	−0.008
	—	(0.038)	(0.041)	—	(0.029)	(0.035)
Social proximity to elites (Z score)	—	—	0.557*	—	—	0.717*
	—	—	(0.125)	—	—	(0.136)
Intercept	−13.500*	−13.806*	−14.244*	−0.564	−0.213	−1.366
	(2.146)	(2.148)	(2.167)	(1.322)	(1.331)	(1.357)
N	2216	2216	2216	3416	3416	3416
Log Likelihood	−1338.754	−1329.364	−1317.761	−2121.453	−2115.955	−2098.883
AIC	2697.508	2680.728	2659.522	4262.907	4253.910	4221.766

$^{*}p < 0.05$

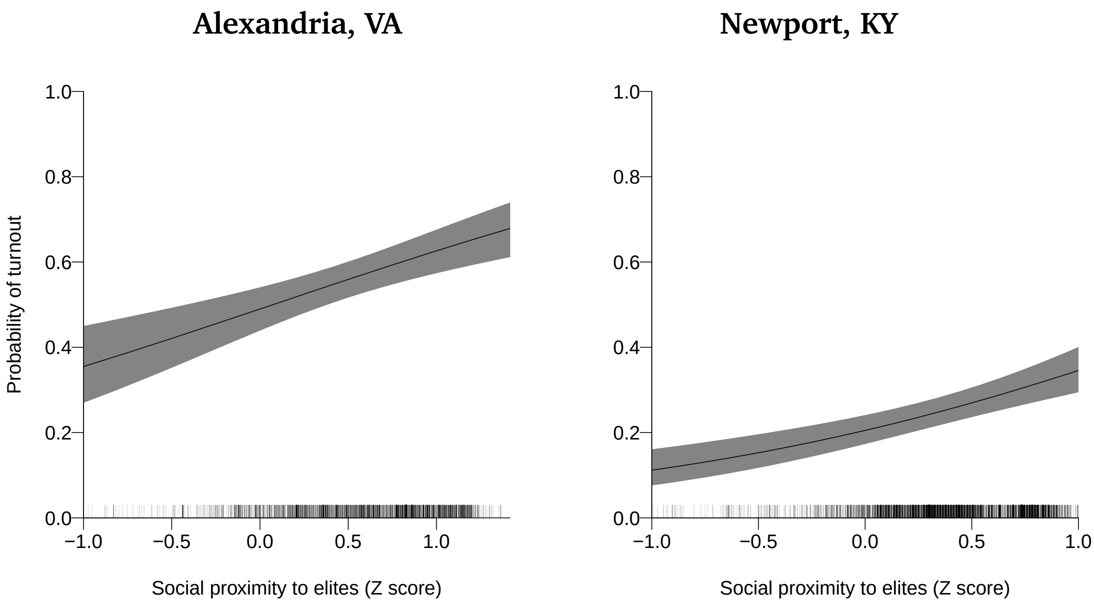
Note: Reported coefficients are from logistic regressions (with standard errors in parentheses). Models are restricted to eligible voters (In Alexandria, white males at least 21 years of age; in Newport, males at least 21 years of age). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. In each city, a likelihood ratio test suggests that Model 3—which includes the social network measures—provides a better fit than does Model 1 (In Alexandria, $\chi^2(DF = 2) = 42$; p $<$ .001. In Newport, $\chi^2(DF = 2) = 45.1$; p $<$ .001).

rates and the difference in turnout between people with mid- and low-status occupations is not statistically significant. People with high-status occupations do vote more frequently than people with low- or mid-status occupations and home owners vote more frequently than nonowners. Aside from these resources, the other covariates perform as expected, with voters in each city disproportionately comprised of older citizens, the U.S. born, and (in Alexandria) church members. In Newport's 1874 elections—only a few years after the Fifteenth Amendment extended the franchise to African Americans—blacks were significantly more likely to vote than were whites, all else equal.

Our Elite Proximity-Turnout Hypothesis receives support in both cities. In each, Model 3 shows a positive and statistically significant coefficient associated with elite proximity, suggesting people more proximate to elites vote at higher rates. Figure 2 plots individuals' predicted probabilities of turnout by their social proximity to elites. In Alexandria, the predicted probability of turnout is .36 for people one standard deviation below the mean in elite proximity, .49 for people at the mean (*First Difference* $= .49 - .36 = .13$; *95% Confidence Interval* $[.09, .18]$), and .63 for people a standard deviation above ($FD = .63 - .49 = .14$; *95% CI* $[.09, .18]$). In Newport, the corresponding probabilities are .11, .21, and .35 (and again the differences in these probabilities are each statistically significant). These differences are similar in magnitude to the differences in the turnout between people with high- and mid-status occupations. In Alexandria, people with high-status occupations have a .13 greater probability of turnout than otherwise similar people with mid-status occupations (*95% CI* $[.06, .19]$). In Newport, this difference is .09 (*95% CI* $[.02, .16]$).

These results also help disentangle the role of general centrality from that of proximity to elites. While both Nie, Junn and Stehlik-Barry (1996) and Rolfe (2012) assume a strong association between these two measures, they are only weakly related in our data; Pearson's $r = .21$ in Alexandria and .23 in Newport. In Alexandria, the Table 1 Models 2-3 coefficients associated with network centrality are negative and statistically significant; all else equal, more central citizens were less likely to vote than those more disconnected from the community. In Model 3, both centrality and social proximity exhibit a distinct relationship with turnout, but in opposite directions, and thus one cannot serve as a proxy for the other. We should not expect centrality to discourage participation in all elections,

Figure 2: An Individual's Predicted Probability of Voting Given his Social Proximity to Elites (Based on the Statewide Elections in 1859 Alexandria, VA and the Local Elections in 1874 Newport, KY).



Note: The lines indicate the predicted probabilities and the shaded regions show the 95% confidence intervals. All other covariates are set to their medians. Rug plots show the distribution of social proximity to elites, jittered to better show frequencies. Source: Table 1, Model 3.

however. The computational models of Fowler and Smirnov (2005) as well as Siegel (2009, 2013) suggest the effect of centrality will depend on the overall levels of participation in the election.

Vote Choice in the Nineteenth Century

While social proximity to elites has a strong relationship with turnout, how does it relate to voters' candidate choices? Table 2 models vote choice as a function of the same explanatory variables used to predict turnout.[15] In Alexandria, the outcome variable is equal to the proportion of votes an individual cast for the Opposition Party across the five races for national or state government: U.S. Congress, VA House of Delegates, VA Governor, VA Lieutenant Governor, and VA Attorney General. In Newport, the outcome variable is equal to the proportion of votes cast for the Democratic Party across the nine citywide positions contested by both parties.[16] We use OLS for these models.[17] As above, the first model for each city includes only personal attributes as explanatory variables, the second adds the centrality measure, and the third adds the social proximity measures.

Both elections were closely divided, with Opposition candidates securing 59% of votes in Alexandria and Democratic candidates securing 52% in Newport. Table 2 shows that, unlike modern elections (Gelman et al., 2009), resource-based measures were poor predictors of vote choice in these elections. Unsurprisingly in the wake of the Civil War, Model 3 in Newport suggests that, all else at its median, African Americans were 37 percentage points less supportive of Democratic candidates than were people of other races (*95% CI* $[-55, -19]$).

[15]We observe candidate preferences only for those who cast a vote, creating concern that our vote choice estimates may be biased (Heckman, 1979). We therefore present selection models addressing the same question in Table D1 of Online Appendix D. The substantive results are unchanged from those presented here.

[16]In both cities, we choose the party receiving the most votes as the focal party. The estimates change slightly when the other party is used as the focal party due to a few races that feature independents, but the substantive and statistical significance of the results remain unchanged.

[17]Table E1 in Online Appendix E replicates this analysis with ordered logistic regressions, yielding the same substantive conclusions.

Table 2: Estimates from a Model Predicting the Proportion of an Individual's Votes Cast for the Majority Party in the City (Based on the Statewide Election in 1859 Alexandria, VA and the Local Election in 1874 Newport, KY)

	Alexandria			Newport		
	(1)	(2)	(3)	(1)	(2)	(3)
Household wealth (thousands of dollars)	0.002	0.002	0.002	−0.003	−0.002	−0.003
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
ln(Household wealth)	0.001	−0.001	−0.004	−0.001	0.003	0.002
	(0.006)	(0.006)	(0.006)	(0.004)	(0.004)	(0.004)
Mid-status occupation	0.042	0.008	0.010	−0.075*	0.059*	0.041
	(0.031)	(0.034)	(0.035)	(0.022)	(0.027)	(0.027)
High-status occupation	0.028	−0.002	0.002	−0.035	0.093	0.085
	(0.045)	(0.047)	(0.047)	(0.050)	(0.051)	(0.050)
Owns home?	0.042	0.041	0.048	−0.055*	−0.048	−0.047
	(0.036)	(0.036)	(0.036)	(0.027)	(0.027)	(0.027)
Age (years)	0.003	0.002	0.003	0.005	0.007	0.008
	(0.006)	(0.006)	(0.006)	(0.004)	(0.004)	(0.004)
ln(Age)	−0.106	−0.070	−0.095	−0.178	−0.270	−0.278
	(0.243)	(0.243)	(0.241)	(0.158)	(0.154)	(0.153)
Is church member?	0.062*	0.063*	0.094*	—	—	—
	(0.027)	(0.027)	(0.034)	—	—	—
Is African American?	—	—	—	−0.275*	−0.369*	−0.370*
	—	—	—	(0.092)	(0.090)	(0.090)
Is U.S. born?	0.224*	0.204*	0.198*	−0.059*	−0.029	−0.030
	(0.036)	(0.037)	(0.038)	(0.024)	(0.023)	(0.023)
Network centrality (Z score)	—	−0.029*	−0.008	—	0.065*	0.056*
	—	(0.013)	(0.014)	—	(0.008)	(0.009)
Social proximity to majority party elites (Z score)	—	—	0.225*	—	—	0.297*
	—	—	(0.072)	—	—	(0.067)
Social proximity to minority party elites (Z score)	—	—	−0.304*	—	—	−0.204*
	—	—	(0.072)	—	—	(0.070)
Intercept	0.610	0.556	0.655	1.040*	1.144*	1.134*
	(0.651)	(0.650)	(0.647)	(0.402)	(0.392)	(0.391)
N	1128	1128	1128	1381	1381	1381
R^2	0.049	0.054	0.069	0.030	0.078	0.096
Adj. R^2	0.042	0.045	0.059	0.023	0.072	0.088
RMSE	0.432	0.431	0.428	0.368	0.358	0.355

$^*p < 0.05$

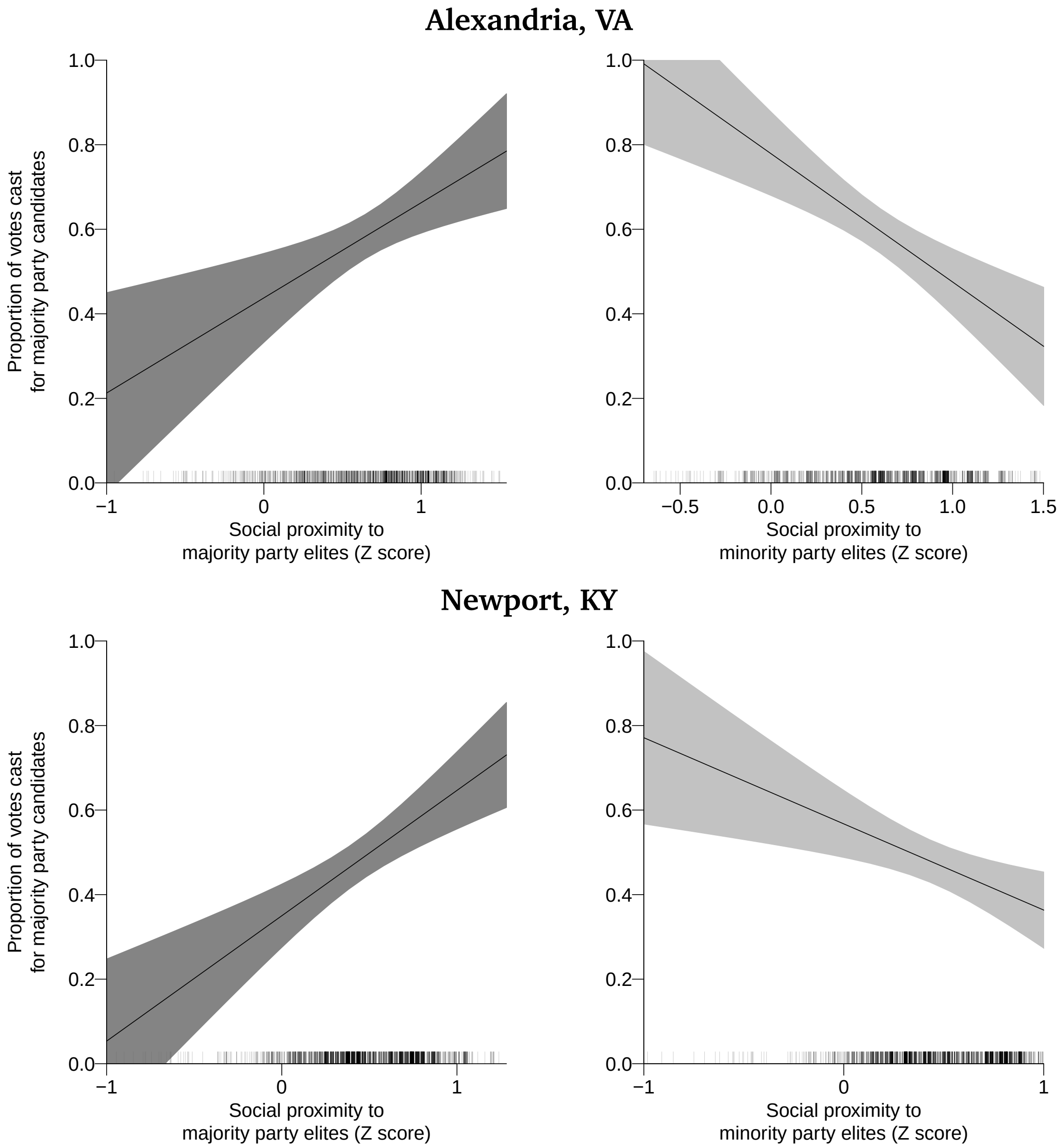
Note: Reported coefficients are from ordinary least squares regressions (with standard errors in parentheses). Models are restricted to voters. The outcome variable is equal to the proportion of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. In each city, an F-test suggests that Model 3—which includes the social network measures—provides a better fit than does Model 1 (In Alexandria, $F(DF = 3, 1115) = 7.7$; p $< .001$. In Newport, $F(DF = 3, 1368) = 33.2$; $p < .001$).

In Model 3 from each city, the positive and statistically significant coefficient associated with proximity to the majority party provides support for Elite Proximity-Support Hypothesis

I. Likewise, the negative and statistically significant coefficient associated with proximity to the minority party provides support for Elite Proximity-Support Hypothesis II. Figure 3 plots the predictions from the models as the social proximity measures vary. The left panel of the figure shows the proportion of votes an individual is predicted to give to the majority party in the city as social proximity to this focal party increases. The right panel shows how this support decreases with increases in social proximity to the minority party. The figure shows that, all else equal, citizens closer socially to majority-party candidates cast a greater proportion of their votes for that party. Compared to people at the mean social proximity to the majority party, those one standard deviation above are predicted to have .23 greater support for the majority party in Alexandria (*95% CI* $[.09, .37]$) and .30 greater support in Newport (*95% CI* $[.16, .44]$). The right panel shows that voters closer to minority-party candidates are decreasingly likely to vote for the majority party. Compared to people at the mean social proximity to the minority party, those one standard deviation above are predicted to have .30 less support for the majority party in Alexandria (*95% CI* $[-.44, -.07]$) and .20 less support in Newport (*95% CI* $[-.34, -.06]$).

If social proximity encourages candidate support, local party organizations can profit by recruiting candidates with strong social connections to their communities. Alternatively, our results may arise if candidates in our elections ran *because* of their social proximity to their supporters (or because of unobserved factors that covary with social proximity). Our cross-sectional data cannot provide a conclusive test of these mechanisms. Though candidates may have emerged due to their social proximity to typical party supporters, we see little evidence that candidates emerged because they were socially proximate to citizens generally. If social proximity predicts candidate emergence, we should expect candidates to be particularly central in the network, which they were not. Candidates had an average weighted eigenvector centrality of .04 in Alexandria and .13 in Newport, slightly less than the .17 and .14 averages for eligible voters in each city. If elites were exceptionally central,

Figure 3: The Predicted Proportion of an Individual's Votes Cast for the Majority Party in the City Given his Social Proximity to Each Party's Elites (Based on the Statewide Elections in 1859 Alexandria, VA and the Local Elections in 1874 Newport, KY).



Note: The lines indicate the model predictions and the shaded regions show the 95% confidence intervals. All other covariates are set to their medians. Rug plots show the distribution of the variable on the X-axis, jittered to better show frequencies. Source: Table 2, Model 3.

the distinction between social proximity to elites and general centrality would be muted; the most central citizens would also be the most proximate to elites.

Turnout and Participation in 2010 Williamsburg

We next examine the 2010 Williamsburg election, where we model turnout and political participation in support of Foster's campaign as functions of social proximity to Foster. We focus on campaign participation rather than vote choice because we lack variation in respondents' vote choices; of the respondents casting a ballot, 96% report voting for Foster. Participation provides a useful alternative because it allows us to study other forms of candidate support and campaign engagement that are not available in the nineteenth century data.

To measure turnout, we obtained the Williamsburg voter file for the election. Our outcome variable equals one if the respondent's name was in the file and zero otherwise. By using this validated voting measure, we avoid the problem of overreporting turnout that is common to public opinion surveys (Clausen, 1968; Holbrook and Krosnick, 2010). In addition to the social proximity measure discussed above, we control for respondents' family income, race/ethnicity, gender, and place of residence. At the time of the election, Foster was a senior government major and hence his close social circle was likely to be older and more politically interested. We therefore control for academic year, past political participation (including voting in 2008 and an additive index of political participation in 2008 and the 2009 VA gubernatorial race),[18] and various political attitudes (interest in national politics, trust in government, and partisan extremity).[19] All controls are measured

[18]For each election, these participatory acts include the following: attempting to persuade someone to vote for a particular candidate, working on a campaign, attending meetings or rallies, displaying a political yard sign, bumper sticker, or wearing a campaign button, giving money to a candidate, writing on a blog or participating in an on-line forum or message board, writing a letter to a newspaper/magazine, or "other". These acts provide no age restrictions and thus were not limited to respondents who were voting age in these earlier elections. In contrast, some freshmen and sophomores may have wished to vote in 2008, but were not yet old enough and are thus coded as nonvoters on those measures.

[19]Some of these controls such as trust in government may themselves be influenced by proximity to the elite

using the preelection wave of the survey. Online Appendix B discusses measurement details and Table B3 displays summary statistics for these variables. King et al. (2001) argue that missing data pose a large problem for survey research, asserting that multiple imputation of missing values provides an improvement over listwise deletion. Our models, displayed in Table 3, therefore rely on multiple imputation via the Amelia package in R (Honaker et al., 2011). For details on the imputations, see Online Appendix F.[20]

The first three models of the table examine turnout. In Model 3, the coefficient associated with social proximity to the elite is positive and statistically significant, lending further support for our Elite Proximity-Turnout Hypothesis. The top-left panel of Figure 4 graphs this relationship. Consider individuals with five intermediaries between themselves and Foster, roughly corresponding to the mean social distance (Social proximity to the elite Z Score ≈ 0). With other variables at their medians, the model predicts they will have a .31 probability of voting. If these individuals made friends with someone separated from Foster by only two intermediaries, they would then be separated by only three intermediaries rather than five—roughly a standard deviation increase in social proximity (Social proximity to the elite Z Score ≈ 1). In this scenario, their predicted probability of turnout would increase to .41 ($FD = .41 - .31 = .10$; *95% CI* $[.06, .13]$). For comparison, the top-right panel graphs the relationship between previous campaign participation and turnout—one of the strongest turnout predictors (Brody and Sniderman, 1977; Gerber, Green and Shachar, 2003). Compared to an individual who completed the mean number of campaign activities in 2008 and 2009 ($Mean = 1.6$), someone who completed a standard deviation more activities ($SD = 2.2$) is predicted to have a .03 greater probability of voting ($FD = .35 - .32 = .03$;

and thus the estimated coefficient for proximity to the elite may be artificially deflated. We believe including these measures is preferable to omitting them because of the threats of shared environments and interests discussed above. In practice, omitting these controls does not alter the magnitude of the social proximity coefficient or its p-value.

[20]We have also run these models omitting respondents who were not registered to vote in Williamsburg. The substantive results are unchanged with this specification. We present the models that include respondents who were not registered because registration in Williamsburg may itself be influenced by social proximity to the elite.

Table 3: Estimates from Models Predicting an Individual's Probability of Electoral Turnout and Number of Campaign Activities Completed in Support of Foster (Based on the Local Election in 2010 Williamsburg, VA)

	Turnout			Number of Campaign Activities		
	(1)	(2)	(3)	(1)	(2)	(3)
Family income	0.048	0.045	0.037	0.116	0.119	0.131*
	(0.062)	(0.062)	(0.062)	(0.064)	(0.064)	(0.061)
Is Caucasian, non-Hispanic?	0.518*	0.522*	0.438*	0.241	0.242	0.175
	(0.145)	(0.146)	(0.147)	(0.142)	(0.142)	(0.137)
Is female?	−0.183	−0.171	−0.165	−0.163	−0.170	−0.126
	(0.105)	(0.106)	(0.107)	(0.105)	(0.106)	(0.107)
Is sophomore?	−0.409*	−0.423*	−0.478*	0.020	0.033	0.030
	(0.185)	(0.186)	(0.186)	(0.176)	(0.176)	(0.171)
Is junior?	−0.283	−0.287	−0.436*	0.281	0.284	0.244
	(0.189)	(0.190)	(0.191)	(0.176)	(0.176)	(0.176)
Is senior?	−1.022*	−1.035*	−1.260*	0.333	0.340	0.179
	(0.203)	(0.204)	(0.207)	(0.181)	(0.181)	(0.174)
Lives on campus?	0.507*	0.498*	0.436*	0.092	0.096	0.017
	(0.155)	(0.155)	(0.157)	(0.135)	(0.136)	(0.133)
Voted in 2008 primary	0.044	0.044	0.033	−0.008	−0.012	−0.038
	(0.130)	(0.130)	(0.131)	(0.124)	(0.124)	(0.121)
Voted in 2008 general election	0.581*	0.581*	0.578*	0.107	0.109	0.055
	(0.187)	(0.188)	(0.187)	(0.178)	(0.179)	(0.173)
Number of campaign activities, 2008-2009	0.092*	0.089*	0.072*	0.157*	0.159*	0.148*
	(0.025)	(0.025)	(0.025)	(0.018)	(0.018)	(0.018)
Interest in national politics	0.158	0.162*	0.148	0.196*	0.195*	0.192*
	(0.082)	(0.082)	(0.083)	(0.094)	(0.094)	(0.091)
Trust in government	−0.025	−0.026	−0.015	0.039	0.034	0.021
	(0.139)	(0.140)	(0.143)	(0.129)	(0.130)	(0.114)
Partisan strength	−0.067	−0.069	−0.055	−0.063	−0.063	−0.049
	(0.058)	(0.058)	(0.060)	(0.055)	(0.055)	(0.054)
Party ID	—	—	—	−0.071	−0.073	−0.082
	—	—	—	(0.058)	(0.058)	(0.057)
Ideology	—	—	—	0.094	0.096	0.095
	—	—	—	(0.065)	(0.065)	(0.062)
Network centrality (Z score)	—	0.049	0.035	—	−0.027	−0.044
	—	(0.035)	(0.035)	—	(0.025)	(0.030)
Social proximity to the elite (Z score)	—	—	0.418*	—	—	0.473*
	—	—	(0.070)	—	—	(0.075)
Intercept	−2.683*	−2.670*	−2.544*	−1.728*	−1.738*	−1.833*
	(0.371)	(0.373)	(0.376)	(0.384)	(0.385)	(0.355)
N	2590	2590	2590	992	992	992
Log Likelihood	−1213.311	−1212.316	−1192.726	−1172.282	−1171.963	−1148.435
AIC	2454.623	2454.631	2417.453	2378.565	2379.925	2334.870

*$p < 0.05$

Note: Reported coefficients are from logistic regressions for the Turnout models and negative binomial regressions for the Campaign Activities models (with standard errors in parentheses). All estimates are based on five imputations. The omitted reference category for academic year is freshman. For both outcome variables, a likelihood ratio test suggests that Model 3—which includes the social network measures—provides a better fit than does Model 1 (For Turnout, $\chi^2(DF = 2) = 41.2$; p < .001). For the Campaign Activities models, $\chi^2(DF = 2) = 47.7$; p < .001).

95% CI [.01, .06]). We are not arguing that the strength of the social proximity relationship exceeds that of previous participation; voting in the 2008 general election, a different measure of past participation, also predicts turnout.[21] Rather, we wish to emphasize the similarity between the results from this modern election to those from the nineteenth century. A strong relationship persists between turnout and social proximity to the elite despite the absence of viva voce voting, and even after controlling for past participation and political attitudes.

Our theory suggests that social proximity to the elite should encourage turnout in the 2010 municipal election, but it should have no effect on turnout in the 2008 election, which occurred two years before Foster ran for office and before many students arrived at William & Mary. Thus, turnout in 2008 provides a placebo test for our model (Sekhon, 2009). In the test, we model 2008 turnout as the outcome variable using as explanatory variables the remaining covariates from Table 3 Model 3. If the coefficient associated with social proximity remains large and statistically significant in this model, it contradicts our interpretation of the results, suggesting instead that people more proximate to Foster participate at higher rates due to shared interests or reasons other than social proximity. As Table G1 of Online Appendix G demonstrates, however, the coefficient is almost zero, lending support to our approach.

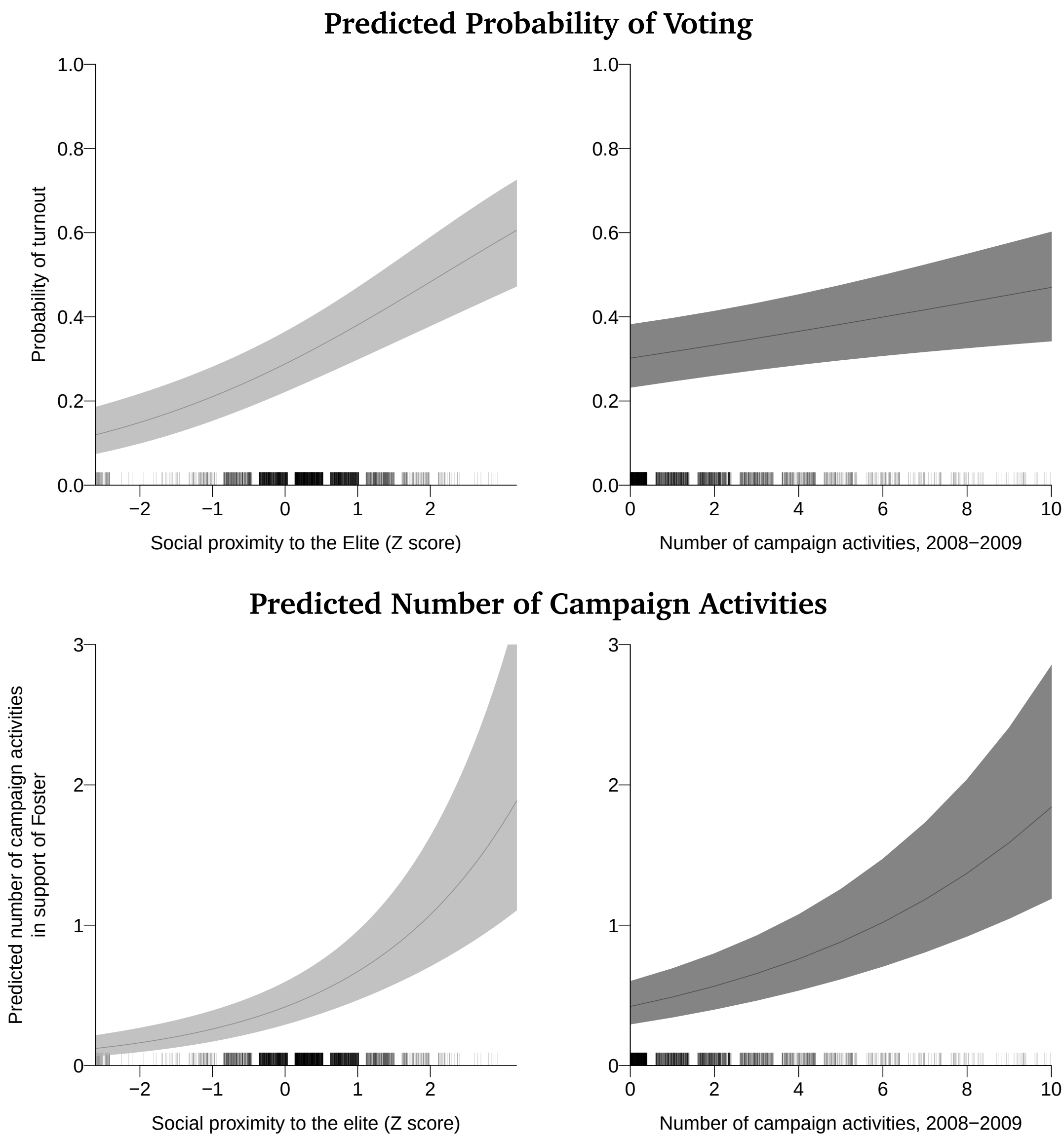
The last three models in Table 3 display the relationship between social proximity and participation in favor of Foster's campaign, providing a new test of our Elite Proximity-Support Hypothesis I. The models are estimates from negative binomial regressions[22] where the outcome variable is a count of the number of campaign activities in which the respondent engaged specifically in support of Foster, measured in the postelection wave.[23] In addition

[21] Compared to 2008 nonvoters, 2008 voters have a .11 greater probability of voting in 2010 ($FD = .32 - .21 = .11$; *95% CI* [.05, .18]).

[22] Likelihood ratio tests suggest these negative binomial regressions significantly outperform poisson models.

[23] These activities include the same type of acts measured in the 2008-2009 participation index as well as becoming a fan of Foster's Facebook page. These participation measures may suffer from an overreporting bias, but the survey's online administration may mitigate this problem because overreporting is less common

Figure 4: An Individual's Predicted Probability of Voting and Predicted Number of Campaign Activities in Support of Foster Given her Social Proximity to the Elite (Based on the 2010 Williamsburg Election).



Note: The lines indicate the predicted probabilities of turnout (top row) or number of campaign activities in support of Foster (bottom row). The shaded regions show the 95% confidence intervals. All other covariates are set to their medians. Rug plots show the distribution of the variable on the X-axis, jittered to better show frequencies. Source: Table 3, Turnout Model 3 (top row) and Campaign Activities Model 3 (bottom row).

to the controls from the turnout models, we control for party ID and ideology.

in online settings (Holbrook and Krosnick (2010); but see Ansolabehere and Hersh (2012)). This analysis is the only outcome on which we rely that is self-reported rather than objectively validated.

The positive and statistically significant coefficient associated with social proximity suggests, all else equal, more proximate respondents participated in more campaign activities in support of Foster. The bottom row of Figure 4 plots this relationship as well as that between the 2008-2009 participation index and participation in support of Foster. Someone at the mean of social proximity is predicted to perform 0.4 acts in support of Foster compared to 0.7 acts for someone one standard deviation above ($FD = 0.68 - 0.42 = 0.26$; *95% CI* $[0.15, 0.40]$). For campaign activism in 2008-2009, someone at the mean is predicted to perform 0.6 acts in support of Foster, compared to 0.8 acts for someone one standard deviation above ($FD = 0.76 - 0.55 = 0.21$; *95% CI* $[0.14, 0.32]$). Like the turnout model, this analysis suggests a strong relationship between social proximity to the elite and participation in support of the elite, even after controlling for individuals' past engagement in similar forms of participation.

In the analyses above, we show in three different settings that voting has a strong relationship with social proximity to elites, even after including a variety of controls. Nonetheless, these apparent social influence effects may instead arise due to unobserved confounds arising from associates' shared environments and interests. We therefore subject all of our estimates to sensitivity analysis, originally developed by VanderWeele (2011). In Tables H1–H6 of Online Appendix H, we show that all of our social influence estimates prove robust to large levels of bias from these or other confounds.

Conclusion

Most people do not know personally someone who has run for elected public office (Nie, Junn and Stehlik-Barry, 1996, 48), but many may know someone who knows such an elite. We are all connected to elites through this social network, some of us more closely than others. We have shown that people more closely connected to elites vote at higher rates and, when choosing among candidates, often choose members of the party they are closest to socially. This study was only possible because the three elections we examine share the ability to identify ordinary citizens, elites, and relationships between them. The attributes of these communities that allowed this measurement also make them unrepresentative in many ways. Indeed, recent work in social influence suggests these relationships will differ from context to context (e.g., Huckfeldt, Johnson and Sprague, 2004; Siegel, 2009). It is for this reason that we replicate our analysis in three different elections, which vary in time, place, and measurement strategy. The large differences between these studies—different age groups, different voting institutions, different candidate pools—demonstrate the robustness of our results, but also limit our ability to examine the specific mechanisms driving these patterns. To what extent do the patterns we observe emerge from social pressure, information diffusion, candidate emergence or asocial processes such as networks of shared interests? We must leave it to future work to answer these questions. Despite these limitations, we think these results contribute to our understanding of social influence in political behavior, local elections, and voting more generally.

Over the last three decades, work on social influence in political behavior has relied primarily on name-generator survey batteries, exploring social influence arising among people's closest friends and family. These few individuals comprise only a small fraction of the hundreds of people we interact with directly and the thousands we are linked to through intermediaries. Our theory presented here specifies *how* these remaining relationships influence individual voting decisions, with influence flowing from elites to their immediate associates and then spreading to less proximate individuals in the network. Our work suggests close associates can connect individuals to the broader climates of opinion within their community. As such, we bridge recent research on close relationships to earlier contextual studies focusing on the correlation of attitudes or behaviors of individuals within neighborhoods (e.g., Tingsten, 1963), religions (e.g., Langton and Rapoport, 1976), and social classes (e.g., Berelson, Lazarsfeld and McPhee, 1954). We demonstrate that individuals are not atoms disconnected from the broader context, nor are they social sponges, indiscriminately absorbing the prevailing political culture. They are tied to the broader context by specific and idiosyncratic networks of associations. By specifying this network we can better understand the ways individuals respond to the contexts in which they are embedded.

The elites we study are all candidates for local office and our work provides clarity into the social forces underlying these important, but understudied elections. Our work extends to local elections the logic of friends-and-neighbors voting—a phenomenon of interest to political scientists for over half a century (e.g., Gimpel et al., 2008; Stokes and Miller, 1962; Tatalovich, 1975). This theory, largely developed and tested in congressional districts and statewide electoral offices, suggests geographic proximity to a candidate encourages voters to "back the home-town boy" (Key, 1949, 41). Our Newport results suggest that in local elections, where all candidates are from the hometown, social proximity rather than geographic proximity alone may drive this relationship.[24] Our analysis of Virginia's state elections demonstrates that local social ties also help shape state-level elections, lending support to the claim that friends-and-neighbors voting occurs through the transmission of information (Bowler, Donovan and Snipp, 1993). While recent work on the topic suggests more salient races may influence down-ticket elections (Meredith, 2013), this result suggests less-salient races may also impact more salient ones. The electoral fate of geographically-distant statewide candidates is linked to the social network within voters' communities.

Finally, our analysis of two nineteenth century elections demonstrates both the usefulness and limitations of voting theories originally developed with modern data. Much like modern elections, people with more socioeconomic resources at stake are more likely to participate. Unlike more modern elections, socioeconomic resources provide little insight into the divisions between supporters of competing parties. In contrast, the social network measures

[24]In Online Appendix I, we show that our network measures add additional explanatory power over simple measures of geographic proximity.

we develop clearly separate voters from nonvoters and supporters of a party from supporters of another—suggesting we can better understand elections by considering not only what citizens have, but also who they know. Unfortunately, specifying the relationships between individuals proves difficult using the random samples that dominate the voting literature. The challenge for electoral scholars is to specify these relationships without abandoning the many advantages that come from random samples.

References

Ahn, T. K., Robert Huckfeldt, Alexander K. Mayer and John Barry Ryan. 2013. "Expertise and Bias in Political Communication Networks." *American Journal of Political Science* 57(2):357–373.

Ahn, T. K., Robert Huckfeldt and John Barry Ryan. 2014. *Experts, Activists, and Interdependent Citizens: Are Electorates Self-Educating?* Cambridge University Press.

Ansolabehere, Stephen and Eitan Hersh. 2012. "Validation: What Big Data Reveal About Survey Misreporting and the Real Electorate." *Political Analysis* 20(4):437–459.

Bartels, Larry M. 2000. "Partisanship and Voting Behavior, 1952-1996." *American Journal of Political Science* 44(1):35–50.

Berelson, Bernard R., Paul F. Lazarsfeld and William N. McPhee. 1954. *Voting: A Study of Opinion Formation in a Presidential Campaign*. Chicago: University of Chicago Press.

Bohmer, David. 1977. The Causes of Electoral Alignments: Some Considerations on How Partisan Behavior is Shaped. In *Law, Society, and Politics in Early Maryland: Proceedings of the First Conference on Maryland History*, ed. Aubrey C. Land, Lois Green Carr and Edward P. Papemfuse. Baltimore: John Hopkins University Press.

Bohmer, David. 1978. The Maryland Electorate and the Concept of a Party System in the Early National Period. In *The History of American Electoral Behavior*, ed. Joel H. Silbey and Allan G. Bogue. pp. 146–73.

Bond, Robert M., Christopher J. Fariss, Jason J. Jones, Adam D. I. Kramer, Cameron Marlow, Jaime E. Settle and James H. Fowler. 2012. "A 61-million-person experiment in social influence and political mobilization." *Nature* 489(7415):295–298.

Borgatti, Stephen P. 2005. "Centrality and Network Flow." *Social Networks* 27(1):55–71.

Bourke, Paul and Donald A. DeBats. 1995. *Washington County: Politics and Community in Antebellum America*. Baltimore: Johns Hopkins University Press.

Bourke, Paul, Donald DeBats and Thomas Phelan. 2001. "Comparing Individual-Level Returns with Aggregates a Historical Appraisal of the King Solution." *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 34(3):127–134.

Bourke, Paul F. and Donald A. DeBats. 1977. "Identifiable Voting in Nineteenth-Century America: Toward a Comparison of Britain and the United States Before the Secret Ballot." *Perspectives in American History* 11:259–88.

Bourke, Paul F. and Donald A. DeBats. 1980. "Individuals and Aggregates: A Note on Historical Data and Assumptions." *Social Science History* 4(2):229–250.

Bourke, Paul F. and Donald A. DeBats. 1985. "Restoring Politics to Political History." *The Journal of Interdisciplinary History* 15(3):459–466.

Bourke, Paul F. and Donald A. DeBats. 1987. "The Structures of Political Involvement in the Nineteenth Century: A Frontier Case." *Perspectives in American History* 3:207–238.

Bowler, Shaun, Todd Donovan and Joseph Snipp. 1993. "Local Sources of Information and Voter Choice in State Elections Microlevel Foundations of the "Friends and Neighbors" Effect." *American Politics Quarterly* 21(4):473–489.

Brody, Richard A. and Paul M. Sniderman. 1977. "From Life Space to Polling Place: The Relevance of Personal Concerns for Voting Behavior." *British Journal of Political Science* 7(03):337–360.

Campbell, Angus, Philip E. Converse, Warren E. Miller and Donald E. Stokes. 1960. *The American Voter*. New York: John Wiley and Sons.

Campbell, David E. 2013. "Social Networks and Political Participation." *Annual Review of Political Science* 16(1):33–48.

Campbell, David E., John C. Green and Geoffrey C. Layman. 2011. "The Party Faithful: Partisan Images, Candidate Religion, and the Electoral Impact of Party Identification." *American Journal of Political Science* 55(1):42–58.

Carlson, Taylor N. and Jaime E. Settle. 2016. "Political Chameleons: An Exploration of Conformity in Political Discussions." *Political Behavior* pp. 1–43.

Clausen, Aage R. 1968. "Response Validity: Vote Report." *Public Opinion Quarterly* 32(4):588–606.

Cormen, Thomas H., Charles E. Leiserson, Ronald L. Rivest and Clifford Stein. 2009. *Introduction to Algorithms*. MIT Press.

DeBats, Donald A. 2008. "A Tale of Two Cities: Using Tax Records to Develop GIS Files for Mapping and Understanding Nineteenth-Century U.S. Cities." *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 41(1):17–38.

DeBats, Donald A. 2009. "Using GIS and Individual-Level Data for Whole Communities A Path Toward the Reconciliation of Political and Social History." *Social Science Computer Review* 27(3):313–330.

DeBats, Donald A. 2011. "Political Consequences of Spatial Organization." *Social Science History* 35(4).

DeBats, Donald A. and Mark Lethbridge. 2005. "GIS and the City: Nineteenth-Century Residential Patterns." *Historical Geograph* 33:78–98.

DeBats, Donald Arthur. 2004. The Politics of German Americans: Three Case Studies from an Industrial Age. In *German-American Immigration and Ethnicity in Comparative*

Perspective, ed. W. Helbich and Walter D. Kamphoefner. Madison: MaxKade Institute for German-American Studies, University of Wisconsin Press.

DeCanio, Samuel. 2007. “Religion and Nineteenth-Century Voting Behavior: A New Look at Some Old Data.” *Journal of Politics* 69(2):339–350.

Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York: Harper and Row.

Eulau, Heinz. 1980. “The Columbia Studies of Personal Influence: Social Network Analysis.” *Social Science History* 4(2):207–228.

Eveland, William P and Myiah Hutchens Hively. 2009. “Political Discussion Frequency, Network Size, and âĂIJHeterogeneityâĂİ of Discussion as Predictors of Political Knowledge and Participation.” *Journal of Communication* 59(2):205–224.

Festinger, Leon. 1957. *A Theory of Cognitive Dissonance*. Stanford: Stanford University Press.

Festinger, Leon. 1964. *Conflict, Decision, and Dissonance*. Stanford: Stanford University Press.

Fowler, James H., Michael T. Heaney, David W. Nickerson, John F. Padgett and Betsy Sinclair. 2011. “Causality in Political Networks.” *American Politics Research* 39(2):437–480.

Fowler, JamesÂăH. and Oleg Smirnov. 2005. “Dynamic Parties and Social Turnout: An AgentâĂŘBased Model.” *American Journal of Sociology* 110(4):1070–1094.

Gelman, Andrew, David Park, Boris Shor and Jeronimo Cortina. 2009. *Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do (Expanded Edition)*. Princeton University Press.

Gerber, Alan S., Donald P. Green and Christopher W. Larimer. 2008. “Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment.” *American Political Science Review* 102(01):33–48.

Gerber, Alan S., Donald P. Green and Ron Shachar. 2003. "Voting May Be Habit-Forming: Evidence from a Randomized Field Experiment." *American Journal of Political Science* 47(3):540–550.

Gimpel, James G., Kimberly A. Karnes, John McTague and Shanna Pearson-Merkowitz. 2008. "Distance-decay in the political geography of friends-and-neighbors voting." *Political Geography* 27(2):231–252.

Hammarberg, Melvyn. 1977. *The Indiana Voter: The Historical Dynamics of Party Allegiance During the 1870s*. Chicago: University of Chicago Press.

Heckman, James A. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47(1):153–161.

Holbrook, Allyson L. and Jon A. Krosnick. 2010. "Social desirability bias in voter turnout reports Tests using the item count technique." *Public Opinion Quarterly* 74(1):37–67.

Honaker, James, Gary King, Matthew Blackwell and others. 2011. "Amelia II: A program for missing data." *Journal of Statistical Software* 45(7):1–47.

Huckfeldt, R., P. E Johnson and J. Sprague. 2002. "Political environments, political dynamics, and the survival of disagreement." *The Journal of Politics* 64(01):1–21.

Huckfeldt, R. Robert. 1983. "Social Contexts, Social Networks, and Urban Neighborhoods: Environmental Constraints on Friendship Choice." *American Journal of Sociology* 89(3):651–669.

Huckfeldt, R. Robert, Paul E. Johnson and John D. Sprague. 2004. *Political disagreement: the survival of diverse opinions within communication networks*. New York, NY: Cambridge University Press.

Huckfeldt, Robert and John Sprague. 1995. *Citizens, Politics, and Social Communication: Information and Influence in an Election Campaign*. New York: Cambridge University Press.

Huckfeldt, Robert, Matthew T. Pietryka and Jack Reilly. 2014. "Noise, bias, and expertise in political communication networks." *Social Networks* 36:110–121.

Huckfeldt, Robert, Paul Allen Beck, Russell J. Dalton and Jeffrey Levine. 1995. "Political Environments, Cohesive Social Groups, and the Communication of Public Opinion." *American Journal of Political Science* 39(4):1025–1054 %U http://www.jstor.org/stable/2111668.

Key, V. O. 1949. *Southern Politics in State and Nation*. New York: A. Knopf.

Killworth, Peter D., Eugene C. Johnsen, Christopher McCarty, Gene Ann Shelley and H. Russell Bernard. 1998. "A social network approach to estimating seroprevalence in the United States." *Social Networks* 20(1):23–50.

King, Gary, James Honaker, Anne Joseph and Kenneth Scheve. 2001. "Analyzing Incomplete Political Science Data: An Alternative Algorithm for Multiple Imputation." *American Political Science Review* null(01):49–69.

Klofstad, Casey. 2010. *Civic Talk: Peers, Politics, and the Future of Democracy*. Temple University Press.

Langton, Kenneth P. and Ronald Rapoport. 1976. "Religion and Leftist Mobilization in Chile." *Comparative Political Studies* 9(3):277–308.

Lazarsfeld, Paul F. 1948. *People's Choice: How the Voter Makes Up His Mind in a Presidential Campaign*. New York: Columbia University Press %7 2nd.

Leighley, Jan E. and Jonathan Nagler. 1992. "Individual and Systemic Influences on Turnout - Who Votes, 1984." *Journal of Politics* 54:718–740.

Makse, Todd and Anand E. Sokhey. 2012. "Yard Sign Displays and the Enthusiasm Gap in the 2008 and 2010 Elections." *PS: Political Science & Politics* 45(04):694–699.

McClurg, Scott D. 2006. "The Electoral Relevance of Political Talk: Examining Disagreement and Expertise Effects in Social Networks on Political Participation." *American Journal of Political Science* 50(3):737–754.

McCormick, Tyler H., Amal Moussa, Johannes Ruf, Thomas A. DiPrete, Andrew Gelman, Julien Teitler and Tian Zheng. 2013. "A Practical Guide to Measuring Social Structure Using Indirectly Observed Network Data." *Journal of Statistical Theory and Practice* 7(1):120–132.

McLeod, Jack M., Dietram A. Scheufele and Patricia Moy. 1999. "Community, Communication, and Participation: The Role of Mass Media and Interpersonal Discussion in Local Political Participation." *Political Communication* 16(3):315–336.

McPherson, Miller, Lynn Smith-Lovin and James M. Cook. 2001. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology* 27:415–444.

Meredith, Marc. 2013. "Exploiting Friends-and-Neighbors to Estimate Coattail Effects." *American Political Science Review* 107(04):742–765.

Miller, Patrick R., Piotr S. Bobkowski, Daniel Maliniak and Ronald B. Rapoport. 2015. "Talking Politics on Facebook Network Centrality and Political Discussion Practices in Social Media." *Political Research Quarterly* 68(2):377–391.

Miller, Warren E. and J. Merrill Shanks. 1996. *The New American Voter*. Cambridge, Mass.: Harvard University Press.

Mutz, Diana Carole. 2006. *Hearing the other side: deliberative versus participatory democracy*. Cambridge University Press.

Nickerson, David W. 2008. "Is Voting Contagious? Evidence from Two Field Experiments." *American Political Science Review* 102(01):49–57.

Nie, Norman H., Jane Junn and Kenneth Stehlik-Barry. 1996. *Education and Democratic Citizenship in America*. Chicago: University of Chicago Press.

Oliver, J. Eric and Shang E. Ha. 2007. "Vote Choice in Suburban Elections." *American Political Science Review* (03):393–408.

Panagopoulos, Costas. 2010. "Affect, Social Pressure and Prosocial Motivation: Field Experimental Evidence of the Mobilizing Effects of Pride, Shame and Publicizing Voting Behavior." *Political Behavior* 32(3):369–386.

Richey, Sean. 2008. "The Autoregressive Influence of Social Network Political Knowledge on Voting Behaviour." *British Journal of Political Science* 38(03):527–542.

Rolfe, Meredith. 2012. *Voter Turnout: A Social Theory of Political Participation*. New York, NY: Cambridge University Press.

Rosenstone, Steven J. and John Mark Hansen. 1993. *Mobilization, Participation and Democracy in America*. New York: Macmillan.

Rozett, John. 1977. The Social Base of Party Conflict in the Age of Jackson Ph.D. Dissertation Ann Arbor: The University of Michigan: .

Ryan, John Barry. 2011. "Social Networks as a Shortcut to Correct Voting." *American Journal of Political Science* 55(4):753–766.

Sekhon, Jasjeet S. 2009. "Opiates for the Matches: Matching Methods for Causal Inference." *Annual Review of Political Science* 12(1):487–508.

Shortridge, Ray M. 1980. "Voter Turnout in the Midwest, 1840âĂŤ1872." *Social Science Quarterly* 60(4):617–629.

Siegel, David A. 2009. "Social Networks and Collective Action." *American Journal of Political Science* 53(1):122–138.

Siegel, David A. 2013. "Social Networks and the Mass Media." *American Political Science Review* 107(04):786–805.

Sinclair, Betsy. 2012. *The Social Citizen: Peer Networks and Political Behavior*. Chicago, IL: University of Chicago Press.

Sinclair, Betsy, Margaret McConnell and Melissa R. Michelson. 2013. "Local Canvassing: The Efficacy of Grassroots Voter Mobilization." *Political Communication* 30(1):42–57.

Sokhey, Anand Edward and Scott D. McClurg. 2012. "Social Networks and Correct Voting." *The Journal of Politics* 74(03):751–764.

Stokes, Donald E. and Warren E. Miller. 1962. "Party Government and the Saliency of Congress." *Public Opinion Quarterly* 77:945–956.

Tatalovich, Raymond. 1975. ""Friends and Neighbors" Voting: Mississippi, 1943âĂŞ73." *The Journal of Politics* 37(03):807–814.

The American Association for Public Opinion Research. 2015. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*. 8th ed. AAPOR.

Tilly, Charles. 2007. *Democracy*. Cambridge University Press.

Tingsten, Herbert. 1963. *Political Behavior: Studies in Election Statistics*. Totowa, NJ: Bedminster Press. Originally published in 1937.

Trounstine, Jessica. 2009. *Political Monopolies in American Cities: The Rise and Fall of Bosses and Reformers*. University of Chicago Press.

VanderWeele, Tyler J. 2011. "Sensitivity Analysis for Contagion Effects in Social Networks." *Sociological Methods & Research* 40(2):240–255.

Verba, Sidney, Kay Lehman Schlozman and Henry E. Brady. 1995. *Voice and Equality: civic voluntarism in American Politics*. Cambridge: Harvard University Press.

Wolfinger, Raymond E. and Steven J. Rosenstone. 1980. *Who Votes?* New Haven: Yale University Press.

Online Supplementary Materials

It's Not Just What You Have, but Who You Know: Networks, Social Proximity to Elites, and Voting in State and Local Elections

A Patronage and Vote Buying in Nineteenth Century US Elections

A.1 Electoral Fraud

Anecdotes about vote buying and electoral fraud, particularly in the mid to late nineteenth century, are an inescapable and colorful part of American political history. As Howard W. Allen and Kate Warren Allen long ago noted:

> Stories of fraudulent election practices color the political history of the United States, and anecdotes about vote buying, the dishonesty of election officials, and the like suggesting the widespread prevalence of election fraud in the American past are an integral part of the lore of American politics. (Allen and Allen, 1981, 153)

The academic literature on vote-buying moved quickly from localized stories to considerations of aggregate systemic effects and speculation about their implications for US politics. One important vehicle for this transformation is an interpretation of US politics advanced by Walter Dean Burnham in an article published 50 years ago. "The Changing Shape of the American Political Universe," put the focus not on corruption, but on the vast number of Americans participating in the elections from the 1840s to the 1890s (Burnham, 1965). Burnham's argument was premised on the authenticity of those votes, not their tainted and corrupt status: this was America's political "golden age," its "Camelot." In Burnham's interpretation those votes were the sum of the very high levels of political participation by an enlightened electorate motivated by issues and engaged by a strong party organization.[25]

[25] Turnout was the most important of the five distinguishing features which Burnham identified in mid-nineteenth century mass politics, the others being split-ticket voting, roll-off (ballot fatigue within an election for multiple offices and referenda), drop off (lower levels of participation in Congressional and other elections which do not coincide with presidential contests), and extent of partisan swing between elections. Burnham's

This was, as Burnham recently wrote in an article celebrating the success of his interpretation,

> a strange lost world of democratic politics in the United States . . . [that] had come into being in the 1830's, vigorously survived across the whole of the nineteenth century, and then came to an abrupt end in the first decades of the twentieth century[:] . . . a preexisting democracy . . . sacrificed on the altar of a triumphant industrial-financial capitalism. (Burnham, 2007, 505)

The world of nineteenth century voting that Burnham described was a world in which voting was a public act, not a private one, a world in which the secret ballot did not exist and in which all voting was accomplished either by depositing a party ticket or, as in the case of Alexandria and Newport, by calling out candidate names (See `sociallogic.iath.virginia.edu`, Bourke and DeBats (1995, 1977, 1987)).

Critics were quick to point out the wide variety of structural reforms introduced into US electoral law beginning in the 1890s. These included registration systems, the Australian secret ballot, and women's suffrage, and they could all serve as explanatory variables for the proportionate decline in participation rates of the twentieth century.

It was inevitable that these alternative explanations for the decline in participation would mine the irresistible richness of that anecdotal evidence of voter corruption in order to deflate the legitimacy of high levels of voting prior to reform. In this fashion Lionel Fredman presented the case for the secret ballot in terms of an earlier history of electoral corruption; by the 1850s, he wrote, "it was obvious to many Americans that manipulation of the ballot [sic] had made voting a meaningless procedure" (Fredman, 1968, ix). Philip Converse was one of the first to attack Burnham's thesis, using investigations by late nineteenth century reformers to suggest that in dense and transient city cores the level of fraud votes was vast and ranged from 30 to 60 to even 75 percent of the total vote, with perhaps 40 percent

point was that those other four indicators were low when turnout was high and rose as turnout fell and the system lost traction with the voters.

fraud rates the most likely figure (Converse, 1972, 289-92). So great was this alleged level of fraud that it was quite possible, as Howard Allen and Kay Allen put it, that the decline in turnout Burnham discerned, "merely reflected the decline of fraud brought about by the reforms in the election procedures" (Allen and Allen, 1981, 155).

That theme continues in Glenn Altschuler and Stuart Blumin's 2001 book *Rude Republic* which targets Burnham's image of "the last six decades of the nineteenth century as an era of unprecedented and subsequently unequaled popular interest and participation in partisan political life" (Holt, 2001, 164). Voting in this era was instead, they argue, devoid of meaning and was but a function of the floss and corruption that surrounded nineteenth century elections. Richard Bensel's 2004 study of electoral impropriety in 48 contested Congressional elections, largely in Missouri, Pennsylvania, and Kentucky between 1851 and 1868 presents a picture of almost unrelieved drunkenness, voter intimidation, and voters being marched by party organizers to the polls devoid of any understanding of their acts. This view of America's past elections is the near-antithesis of Burnham's:

> [t]he American polling place was thus a kind of sorcerer's workshop in which the minions of opposing parties turned money into whiskey and whiskey into votes. This alchemy transformed the great political interests of the nation, commanded by those with money, into the prevailing currency of the democratic masses. Whiskey, it seems, bought as many, and perhaps far more, votes than the planks in party platforms. (Bensel, 2004, 295)

However, as Joel Silbey 1994 reminds us, charges of vote-buying, corruption, and stolen elections are, and were, almost always self-serving. As is the case today, those who make the charge of vote fraud are often seeking to change the electoral rules and those who seek to change the rules often allege voter fraud. Silbey quotes a young Abraham Lincoln, defending viva voce election returns in the Illinois legislature in 1840, asserting that he "had every reason to believe that all this hue and cry about frauds was entirely groundless, and raised for other than honest reasons" (Silbey, 1994, 148).

Silbey notes too that "[t]here were also some strong built-in checks in the nineteenth century system. Party workers were constantly on guard against the depredations of the other side and never hesitant about challenging potential voters on residence and other grounds" (Silbey, 1994, 148). Burnham, in answering Converse, built upon Richard Jensen's close work on mid-century elections, reasoning that, "traceable corruption, being a dangerous enterprise for practitioners, was at most a marginal phenomenon" (Burnham, 1974). The fact that all of Bensel's evidence arises entirely from contested election cases, cases that are by their very nature highly exceptional, is in fact grist to Burnham's and Sibley's mill that voter fraud was a risky business and that real cases of it would be and were contested by interested parties.

Let us also note that almost all those cases arose in states using the ticket system of voting, a system seldom more secret than oral voting and equally open to vote purchase. Indeed, the very public nature of viva voce voting, used in Alexandria and Newport, as well as Lincoln's Illinois, may have even more effectively militated against bribery than did the ticket system.[26]

Of the anecdotal evidence of voter fraud, Howard Allen and Kay Allen conclude, "[t]he unsystematic, undocumented, partisan, and emotional nature of most of the literature indicates that the charges of vote fraud were probably gross exaggerations" (Allen and Allen, 1981, 179). Insofar as vote purchases may have occurred, they find the most likely cases were in poor urban populations, especially those where machine politics prevailed (Allen and Allen, 1981, 180-1).[27] This is not the world of either Alexandria or Newport. In these two places ward-level poll books recorded 614 as the maximum number of voters appearing over a day of polling: a small number susceptible to close scrutiny by neighbors and party and candidate representatives. And finally, no charges or allegations of electoral

[26]For evidence of vote buying in an oral voting system in a different political culture with weak rather than strong parties, see Emery (2012, 142-4, 170).

[27]And even here the meaning of "purchase" would be contestable.

bribery appeared in newspapers or court papers in the aftermath of the Alexandria or Newport elections considered in this project. Until there is evidence to the contrary, the most appropriate adjudication to the charge of vote buying in these two case studies would seem to be that wise Scottish verdict of "not proven."

A.2 Patronage

Even if we dismiss the likelihood of widespread voter fraud in the nineteenth century data, we must also consider whether patronage was prevalent in these elections. The literature on patronage politics—the partisan use of public office to appoint individuals dedicated to the welfare of a political machine—also tends to focus on large cities in the mid- and late-nineteenth century. New York City's Tammany Society became Tammany Hall and grew into the Tweed machine by mid-century; twentieth century variations included the Hague machine in New Jersey, the Pendergast machine in Kansas City, and the Daley machine in Chicago. Political appointees became the institutionalized and protected base from which lower-level ward heelers fanned out to bring in the vote to ensure the machine of its continued political monopoly.

Did patronage systems exist in smaller cities such as Alexandria, Virginia and Newport, Kentucky?

Alexandria and Newport in the mid-nineteenth century were small cities of fewer than 20,000 residents, with limited sources of revenue for personnel budgets. Most municipal officials were elected. Both cities were also closely contested, ensuring a wider knowledge of potential for the partisan misuse of authority. Neither city was characterized as being controlled by a political monopoly. While patronage networks can and did develop in almost any context, Alexandria and Newport were not promising places for the development of a partisan hierarchy capable of awarding jobs in exchange for votes (see e.g., Lessoff and Connolly, 2013).

There were nevertheless potential patronage networks in both cities. We identified 53 non-elected occupations, reported in the relevant federal census and city directories, which could conceivably have been awarded on partisan grounds. These occupations are all in the public sector, the base upon which we would expect a patronage system to develop. The 105 men in these positions were only a small fraction of the employed in either city (1.9 percent in Alexandria; 1.2 percent in Newport); employment in these two cities was overwhelmingly in the private sector.

One measure of whether they could be considered political appointees is their own record as voters in the elections under consideration in this project: the 1859 state election in Alexandria and the 1874 municipal election in Newport. Men in these positions did not turnout to vote at levels we would expect to find in patronage-based systems. In Alexandria, 45 of 60 (75%) men in these positions voted, compared to 45% for all other eligible voters. In Newport, 15 of 45 (39%) men in these positions voted compared to 34% of the other eligible voters. Even in Alexandria, these participation rates are much lower than we would expect for segments of the labor force whose jobs depended on voter mobilization.

The absence of patronage-related positions in city government does not preclude the possibility of top-down efforts to deliver citizens' votes by other means. The preservation of a daily newspaper in Alexandria (*The Alexandria Gazette*) allows us to locate charges of patronage-type behavior in both the private and public sectors and to evaluate those charges with some precision. Three such charges appeared in the *Gazette* in 1859. The first two were allegations of local businesses using their employment power to deliver the vote of employees: demanding that employees vote in a particular way or punishing them for not doing so.

On May 28, two days after the election, George H. Richards, a city grocer and holder of a license to operate as a carter, a transporter of goods throughout the city, inserted a notice in the *Gazette* to refute a charge that he has fired James Macfarlan and seven others, “because they would not vote the Whig ticket.” Richards denied the allegation, saying only Macfarlane had been fired and that was, “. . . for drunkenness, and worthlessness, and for that alone. No one else was discharged.”

A more serious charge appeared earlier, before the election, also related to the use of private power over employment to influence the vote of employees. The Democratic Party was split over the nominee for the Congressional seat to be filled at the election, divided between Thomas Shackleford, who was on the Board of Directors of the Orange and Alexandria Railroad, and William Smith. The charge came in a letter to the *Gazette* on May 6 addressed to the President and Directors of the Orange and Alexandria Railroad Company. In the letter, a “Stockholder” wrote to ask for comment on a published allegation that, “EVERY MEANS is, *doubtless*, used, to urge, or if possible to constrain, men, connected with the road, to vote for Mr. Shackelford, who is a director.” The charge was, “that you permit *constraint* to be used upon your employees to vote for Mr. Shackleford – that you employ your official authority, or suffer others to do it, to interfere with the ‘freedom of elections.’”

This charge was never answered, but we can provide a partial test of the allegation by examining the votes of the 66 railroad employees who lived in Alexandria, employed as baggage masters (N = 8), brakemen (8), conductors (12), contractors (4), construction supervisor (1), engineers (15), firemen (14), and superintendents (4). The 1860 industrial census indicated that the Orange and Alexandria employed 60 hands in the city and we cannot be certain that all 66 men listed with railroad occupations were employed by the Orange and Alexandria line though it is likely that the great majority were. Once again there is little evidence that the suasive power of employment affected these votes. Of those 66 railroad men only 19 voted (29%) and they split in their vote eleven for the Opposition party and eight for the Democrats. Only one of the Democrats, conductor William Pauler, voted for Shackleford.

The one case of patronage politics which was discussed in the August 10 *Gazette* and does appear valid concerned not Alexandria-based efforts in the public or private sector to influence political outcomes, but the evidently much better organized and effective political machine of the national Democratic Party. William Smith won Virginia's seventh Congressional seat in the May of 1859. Beginning in June, letters began appearing in the *Gazette* from John T. Johnston who had worked in the US Customs House in Alexandria and claimed he had been dismissed from office because, while a strong Democrat, and something of the core of the party in Alexandria, he had consistently opposed William Smith for office. James Fossett, also of Alexandria, had also been dismissed from the local Federal Customs office. Both Johnson and Fossett voted Democratic in the 1859 election, but in the Congressional contest, choosing Shackleford rather than Smith.[28]

The US Customs office in Alexandria does stand out as a home of patronage positions. The three remaining employees (Isaac Wood, S. King Shay, and John W. Campbell) voted Democratic and for Smith for Congress in 1859 and so did the Collector, Edward S. Hough. There is no evidence any of these men were dismissed.

Patronage politics did exist in Alexandria, but, the evidence we have suggests that is was rare and it arose more from outside the city as a virulent power within the US federal government rather than as an integral part of city politics.

If people in these positions, however rare, were more easily monitored by party elites, patronage may confound our estimates of social influence. We address this concern for studying turnout in Table A1.[29] The table replicates the turnout models from Table 1 of the main text, but adds variables to control for patronage. The first model from each city includes as an explanatory variable a dummy indicating whether the citizen holds a position that may have been allocated through patronage. This single dummy may overlook heterogeneity in the extent to which each occupation was actually filled though patronage. Perhaps a

[28]See also the June 29, July 1, July 4, and August 8, 1859 editions of the *Gazette*.
[29]Many of the tables in the appendices were typeset in LaTeX using the texreg package (Leifeld, 2013).

patronage system in Alexandria filled most of the postal positions, but few of the police positions. To control for such possibilities, the second model in each city includes fixed effects for each occupation with the potential to be filled by patronage. In other words, the fixed effects models include a dummy for each unique occupation that may have been filled through patronage, indicating whether the individual holds that occupation.

All else equal, the first model in each city suggests people who held potential patronage positions were more likely to turnout, though the relationship is only statistically significant in Alexandria. The social proximity results from the main text are robust to these new specifications. The Table A1 coefficients associated with social proximity are almost identical to those in Table 1 of the main text. Table A2 adds the same controls to the vote choice models from Table 2 of the main text. Again, the social proximity estimates are largely unchanged from the main text estimates in both magnitude and statistical significance.

In summary, the tables in this section provide several means to control for the role of patronage. The controls are nonetheless imprecise. We cannot be sure which positions were truly allocated through patronage. And we cannot control for individuals who did not yet hold patronage positions, but had been promised them. Given the small role of patronage in these cities we do not believe these concerns present a large threat to the internal or external validity of our results. Controlling for potential patronage positions does not change our estimates associated with social proximity. While the role of networks may be magnified in cities with strong patronage systems, the apparent absence of a widespread patronage system in these cities suggests that this aspect of nineteenth century politics poses little threat to the external validity of our study.

Table A1: Reestimating the Table 1 Models while Controlling for Individuals With Potential Patronage Positions

Outcome Variable: Did citizen turnout to vote?	Alexandria		Newport	
	(1)	(2)	(1)	(2)
Household wealth (thousands of dollars)	−0.010*	−0.010*	−0.002	−0.002
	(0.004)	(0.004)	(0.003)	(0.003)
ln(Household wealth)	0.040	0.042	−0.067*	−0.069*
	(0.022)	(0.022)	(0.015)	(0.015)
Mid-status occupation	0.268*	0.286*	0.182	0.164
	(0.124)	(0.125)	(0.104)	(0.104)
High-status occupation	0.571*	0.581*	0.379	0.335
	(0.195)	(0.196)	(0.201)	(0.205)
Owns home?	0.800*	0.792*	1.579*	1.575*
	(0.152)	(0.153)	(0.099)	(0.099)
Age (years)	−0.098*	−0.098*	−0.008	−0.010
	(0.021)	(0.021)	(0.015)	(0.015)
ln(Age)	4.677*	4.638*	0.025	0.109
	(0.818)	(0.820)	(0.537)	(0.541)
Is church member?	0.549*	0.567*	—	—
	(0.125)	(0.127)	—	—
Is African American?	—	—	1.302*	1.308*
	—	—	(0.427)	(0.427)
Is U.S. born?	0.527*	0.530*	0.203*	0.200*
	(0.124)	(0.125)	(0.088)	(0.088)
Holds potential patronage position?	1.093*	—	0.699	—
	(0.377)	—	(0.416)	—
Network centrality (Z score)	−0.240*	−0.232*	−0.011	−0.028
	(0.041)	(0.042)	(0.035)	(0.035)
Social proximity to elites (Z score)	0.606*	0.561*	0.736*	0.855*
	(0.126)	(0.131)	(0.136)	(0.144)
Intercept	−14.082*	−13.952*	−1.395	−1.645
	(2.169)	(2.176)	(1.358)	(1.367)
Patronage Position Fixed Effects	*No*	*Yes*	*No*	*Yes*
N	2216	2216	3416	3416
Log Likelihood	−1312.938	−1305.588	−2097.470	−2080.748
AIC	2651.877	2701.176	4220.939	4227.496

$^{*}p < 0.05$

Note: Reported coefficients are from ordinary least squares regressions (with standard errors in parentheses). Models are restricted to voters. The outcome variable is equal to the proportion of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. To conserve space, the table omits the coefficients associated with patronage position fixed effects.

Table A2: Reestimating the Table 2 Models while Controlling for Individuals With Potential Patronage Positions

Outcome Variable: Proportion of votes for the majority party	Alexandria		Newport	
	(1)	(2)	(1)	(2)
Household wealth (thousands of dollars)	0.002	0.002	−0.002	−0.002
	(0.001)	(0.001)	(0.002)	(0.002)
ln(Household wealth)	−0.004	−0.003	0.002	0.002
	(0.006)	(0.006)	(0.004)	(0.004)
Mid-status occupation	0.012	0.029	0.038	0.035
	(0.035)	(0.035)	(0.027)	(0.027)
High-status occupation	0.004	0.003	0.075	0.077
	(0.047)	(0.048)	(0.051)	(0.052)
Owns home?	0.046	0.055	−0.046	−0.045
	(0.036)	(0.036)	(0.027)	(0.027)
Age (years)	0.002	0.001	0.008	0.008
	(0.006)	(0.006)	(0.004)	(0.004)
ln(Age)	−0.080	−0.063	−0.277	−0.281
	(0.242)	(0.241)	(0.153)	(0.154)
Is church member?	0.097*	0.109*	—	—
	(0.034)	(0.034)	—	—
Is African American?	—	—	−0.368*	−0.368*
	—	—	(0.090)	(0.089)
Is U.S. born?	0.200*	0.208*	−0.033	−0.030
	(0.038)	(0.037)	(0.023)	(0.023)
Holds potential patronage position?	−0.065	—	0.153	—
	(0.067)	—	(0.096)	—
Network centrality (Z score)	−0.008	−0.000	0.055*	0.052*
	(0.014)	(0.014)	(0.009)	(0.009)
Social proximity to majority party elites (Z score)	0.223*	0.218*	0.308*	0.308*
	(0.072)	(0.071)	(0.068)	(0.068)
Social proximity to minority party elites (Z score)	−0.305*	−0.338*	−0.207*	−0.181*
	(0.072)	(0.073)	(0.070)	(0.070)
Intercept	0.614	0.587	1.131*	1.128*
	(0.648)	(0.646)	(0.391)	(0.392)
Patronage Position Fixed Effects	*No*	*Yes*	*No*	*Yes*
N	1128	1128	1381	1381
R^2	0.070	0.112	0.097	0.106
Adj. R^2	0.059	0.080	0.089	0.091
RMSE	0.428	0.423	0.355	0.355

*$p < 0.05$

Note: Reported coefficients are from ordinary least squares regressions (with standard errors in parentheses). Models are restricted to voters. The outcome variable is equal to the proportion of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. To conserve space, the table omits the coefficients associated with patronage position fixed effects.

B Measurement

This appendix describes the source and provides summary statistics for all measures used in the analyses.

B.1 Alexandria Measures

Variables used in Alexandria Analysis

`Cast vote?`: Collected from the May 1859 poll books. Equals 1 if the citizen's name appeared in the poll books and 0 otherwise.

`Proportion of votes for the Opposition`: Collected from the May 1859 poll books. Equal to the number of votes cast for Opposition Party candidates divided by the total number of votes cast across the five races for national or state government: U.S. Congress, VA House of Delegates, VA Governor, VA Lieutenant Governor, and VA Attorney General.

`Household wealth (thousands of dollars)`: Maximum personal assessed wealth (including income, real estate, and all other taxable assets) within an individual's household, obtained from the 1859 City Tax List. Before finding the maximum, we replace people absent from the tax list (n = 381) with their self-reported wealth from the 1860 census. For those lacking records on residence (n = 284) we use their personal wealth rather than the maximum in their household.

`Mid-status occupation`: Based on occupation, see below. Equals 1 if the individual holds a mid-status occupation and 0 otherwise. To classify status, we began by assigning each of the 573 occupations into an 18-part status hierarchy based on our assessment of skill required for the occupation, manual labor involved in the occupation, and autonomy associated with the occupation. Slave was lowest; professional was highest. Then we grouped those 18 hierarchic positions into three occupational statuses: High, Mid, and Low.

`High-status occupation`: Based on occupation, see below. Equals 1 if the individual holds a high-status occupation and 0 otherwise.

`Owns home?`: Defined in the real estate section of the municipal tax lists. Equals 1 if the individual owns or is in the process of purchasing his home and 0 otherwise.

`Age (years)`: Measured using the 1860 census. Equal to years old at time of election.

`Is church member?`: Based on Church membership, see below. Equals 1 if the individual is on a church's membership list and 0 otherwise.

`Is U.S. born?`: Measured using the 1860 census. Equals 1 if the individual was born in the United States and 0 otherwise.

`Network centrality`: Weighted eigenvector centrality in the network. Scaled to hold a maximum score of 1.

`Network centrality (Z score)`: The `network centrality` measure standardized with mean = 0 and SD = 1.

`Social distance to elites`: Discussed in detail in section entitled, "Constructing the Nineteenth Century Networks," and based on the affiliations described below. For this calculation, we first use the observable affiliations to create an $n \times n$ matrix in which cell entries represent the number of shared connections between pairs of individuals. Dijkstra's algorithm searches for the shortest non-zero path and thus stronger ties must have lower values in the matrix than weaker ties, while non-existent ties are represented by zeros. Thus, pairs of individuals with no shared affiliations receive a score of 0; pairs with the maximum number of shared affiliations (Maximum = 4) receive a score of 1; pairs with 3,2, and 1 shared connections receive scores of 2,3, and 4. We apply Dijkstra's algorithm to this matrix, which calculates the sum of the path weights along the shortest path connecting each pair of individuals. `Social distance to elites` equals the average shortest path between an individual and each candidate running for local office. As an alternative to this weighted network, we have also replicated all analyses using a binary network where a direct link exists between a pair of individuals if they share one or more social connections. We then measure distances using a power matrix approach (Wasserman and Faust, 1994, 161). This alternative approach leads to the same substantive conclusions as those we present in the main text.

`Social proximity to elites (Z score):` A transformation of the `social distance to elites` measure. The measure is first standardized with mean $= 0$ and SD $= 1$. It is then multiplied by -1 so that larger values indicate greater proximity to elites.

`Social distance to focal party elites:` Discussed in detail in section entitled, "Constructing the Nineteenth Century Networks," and based on the affiliations described below. Equal to the average weighted social distance between an individual and each Opposition Party candidate running for local office.

`Social proximity to focal party elites (Z score):` A transformation of the `social distance to focal party elites` measure. The measure is first standardized with mean $= 0$ and SD $= 1$. It is then multiplied by -1 so that larger values indicate greater proximity to Opposition elites.

`Social distance to opposing party elites:` Discussed in detail in section entitled, "Constructing the Nineteenth Century Networks," and based on the affiliations described below. Equal to the average weighted social distance between an individual and each Democratic Party candidate running for local office.

`Social proximity to opposing party elites (Z score):` A transformation of the `social distance to opposing party elites` measure. The measure is first standardized with mean $= 0$ and SD $= 1$. It is then multiplied by -1 so that larger values indicate greater proximity to Democratic elites.

Affiliations used to Construct Alexandria Network

Family members: Pairs of individuals sharing the same surname and living in the same residence. Residence was determined using historical analysis of the following sources: Corporation of Alexandria 1859 Tax Lists by ward, Corporation of Alexandria 1859 Tax Ledgers by ward, Corporation of Alexandria 1855 & 1862 Tax Assessments by Ward, US Bureau of the Census 1860 Census of Free Residents of Alexandria, and C. M. Hopkins' 1877 City Atlas of Alexandria. For a detailed description of this process see DeBats (2008).

Neighbors: Pairs of individuals who live on the same subblock and on the same side of the street. Subblocks are units within a block defined by alleys and their intersections.

Confreres: Pairs of individuals with the same occupation. Occupation was determined using historical analysis of the 1860 US Bureau of the Census, Census of Free Residents of Alexandria, and the 1860 Boyd's Washington and Georgetown Directory (Alexandria Section). Our occupational codes were influenced by the work of Katz (1975) and Thernstrom (2009). To develop these codes, we sought a procedure that would apply to both a commercial town (Alexandria) and an industrial town (Newport), directing us toward comparability rather than historic specificity (see Hauser, 1982). We ultimately derived 573 specific occupations, private and public, reported by residents in 1) the 1860 (Alexandria) and 1870 (Newport) censuses; 2) the 1859 City of Alexandria License Tax and the City of Newport 1874 City Tax Lists; 3) the 1860 Boyd's Washington and Georgetown Directory; and 4) the William's Newport Directory for 1872-73. For a detailed description of this analysis see DeBats and Lethbridge (2005).

Co-church members: Pairs of individuals affiliated with the same church. Church membership was identified using historical analysis of each church's archived records of births, marriages, deaths, confirmations, baptisms, membership lists, cemetery records, graveyard inscriptions, and church registers.

Table B1: Descriptive statistics - Alexandria

Statistic	N	Mean	St. Dev.	Min	Max
Cast vote?	2,590	0.46	0.50	0	1
Proportion of votes for the Opposition	1,190	0.61	0.44	0.00	1.00
Household wealth (thousands of dollars)	2,216	3.69	14.05	0.00	204.45
ln(Household wealth)	2,216	−1.42	2.80	−6.91	5.32
Mid-status occupation	2,590	0.53	0.50	0	1
High-status occupation	2,590	0.08	0.28	0	1
Owns home?	2,590	0.16	0.36	0	1
Age (years)	2,590	37.56	13.20	21	98
ln(Age)	2,590	3.57	0.33	3.04	4.58
Is church member?	2,590	0.28	0.45	0	1
Is U.S. born?	2,590	0.77	0.42	0	1
Network centrality	2,590	0.17	0.35	0.00	1.00
Network centrality (Z score)	2,590	0.70	1.88	−0.24	5.13
Social distance to elites	2,590	9.92	2.15	6.86	22.62
Social proximity to elites (Z score)	2,590	0.54	0.68	−3.48	1.51
Social distance to focal party elites	2,590	9.93	2.14	6.58	22.47
Social proximity to focal party elites (Z score)	2,590	0.53	0.68	−3.46	1.60
Social distance to opposing party elites	2,590	9.80	2.25	6.57	22.86
Social proximity to opposing elites (Z score)	2,590	0.54	0.70	−3.50	1.54

Summary statistics are restricted to eligible voters (males over age 21), but Z scores are calculated on the full sample so the means and standard deviations are not exactly 0 and 1.

B.2 Newport Measures

Variables used in Newport Analysis

`Cast vote?`: Collected from the March 1874 poll books. Equals 1 if the citizen's name appeared in the poll books and 0 otherwise.

`Proportion of votes for Democrats`: Collected from the March 1874 poll books. Equal to the number of votes cast for Democratic Party candidates divided by the total number of votes cast across the the nine citywide positions contested by both parties: President of the Council, City Clerk, City Attorney, City Jailor, City Physician, Market Master, Wharf Master, Weights and Measures, and Street Commissioner.

`Household wealth (thousands of dollars)`: Maximum personal assessed wealth (including income, real estate, and all other taxable assets) within an individual's household, obtained from the 1874 City Tax List. Before finding the maximum, we replace people absent from the tax list (n = 953) with their self-reported wealth from the 1870 census. For those lacking records on residence (n = 1,499) we use their personal wealth rather than the maximum in their household.

`Mid-status occupation`: Based on occupation, see below. Equals 1 if the individual holds a mid-status occupation and 0 otherwise. For more details on classifying occupational status, see the discussion in the previous section.

`High-status occupation`: Based on occupation, see below. Equals 1 if the individual holds a high-status occupation and 0 otherwise.

`Owns home?`: Defined in the real estate section of the municipal tax lists. Equals 1 if the individual owns or is in the process of purchasing his home and 0 otherwise.

`Age (years)`: Measured using the 1870 census. Equal to years old at time of election.

`Is African American?`: Information on race comes from census lists, municipal tax lists, and poll books. Equals 1 if the individual is an African American and 0 otherwise.

`Is U.S. born?`: Measured using the 1870 census. Equals 1 if the individual was born in the United States and 0 otherwise.

`Social distance to elites`: Discussed in detail in section entitled, "Constructing the Nineteenth Century Networks," and based on the affiliations described below. See also the discussion in Section B.1 of the Online Appendix. Equal to the average weighted social distance between an individual and each candidate running for local office.

`Social proximity to elites (Z score)`: A transformation of the `social distance to elites` measure. The measure is first standardized with mean = 0 and SD = 1. It is then multiplied by −1 so that larger values indicate greater proximity to elites.

`Social distance to focal party elites`: Discussed in detail in section entitled, "Constructing the Nineteenth Century Networks," and based on the affiliations described below. Equal to the average weighted social distance between an individual and each Democratic Party candidate running for local office.

`Social proximity to focal party elites (Z score)`: A transformation of the `social distance to focal party elites` measure. The measure is first standardized with mean = 0 and SD = 1. It is then multiplied by −1 so that larger values indicate greater proximity to Democratic elites.

`Social distance to opposing party elites`: Discussed in detail in section entitled, "Constructing the Nineteenth Century Networks," and based on the affiliations described below. Equal to the average weighted social distance between an individual and each Republican Party candidate running for local office.

`Social proximity to opposing party elites (Z score)`: A transformation of the `social distance to opposing party elites` measure. The measure is first standardized with mean = 0 and SD = 1. It is then multiplied by −1 so that larger values indicate greater proximity to Republican elites.

`Network centrality`: Weighted eigenvector centrality in the network. Scaled to hold a maximum score of 1.

`Network centrality (Z score)`: The `network centrality` measure standardized with mean = 0 and SD = 1.

Affiliations used to Construct Newport Network

Family members: Pairs of individuals sharing the same surname and living in the same residence. Residence was determined using historical analysis of the following sources: City of Newport 1870 City Plat Map, US Bureau of the Census 1870 Census of Newport, Kentucky, Williams' Cincinnati Directory (Newport Section) for 1869, Williams' Newport Directory for 1873, Campbell County 1874 Tax Lists by Ward, and the 1886 Sanborn Fire Insurance Map. For a detailed description of this process see DeBats (2008).

Neighbors: Pairs of individuals who live on the same block and on the same side of the street. We use blocks to define neighbors rather than the subblocks we use in Alexandria because alleys were much rarer in Newport. Moreover, our work suggests Newport lacked the alley residential patterns seen in Alexandria; 14% of Alexandria residents lived in alleys compared to $< 1\%$ in Newport; Unlike Alexandria, Newport alleys seem to have been, by and large, alleys and not spaces in which separate residences unconnected to a street face developed.

Confreres: Pairs of individuals with the same occupation. Occupation was determined using historical analysis of the US Bureau of the Census 1870 Census of Newport, Kentucky, the Williams' 1869 Cincinnati Directory (Newport Section), and the 1873 Williams' Newport Directory. For more information, see the previous section and for a detailed description of this process see DeBats and Lethbridge (2005).

Co-church members: Pairs of individuals affiliated with the same church. Church membership was identified using historical analysis of each church's archived records of births, marriages, deaths, confirmations, baptisms, membership lists, cemetery records, graveyard inscriptions, and church registers.

Table B2: Descriptive statistics - Newport

Statistic	N	Mean	St. Dev.	Min	Max
Cast vote?	4,213	0.34	0.47	0	1
Proportion of votes for Democrats	1,418	0.49	0.37	0.00	1.00
Household wealth (thousands of dollars)	3,416	2.48	13.09	0.00	361.51
ln(Household wealth)	3,416	−1.18	2.90	−6.91	5.89
Mid-status occupation	4,213	0.53	0.50	0	1
High-status occupation	4,213	0.04	0.19	0	1
Owns home?	4,213	0.27	0.45	0	1
Age (years)	4,213	34.51	13.14	16	87
ln(Age)	4,213	3.47	0.38	2.77	4.47
Is African American?	4,213	0.01	0.09	0	1
Is U.S. born?	4,213	0.45	0.50	0	1
Network centrality	4,213	0.14	0.30	0.00	1.00
Network centrality (Z score)	4,213	0.48	1.61	−0.29	5.17
Social distance to elites	4,213	10.98	1.99	7.68	26.53
Social proximity to elites (Z score)	4,213	0.40	0.48	−3.36	1.19
Social distance to focal party elites	4,213	11.17	1.98	7.38	26.38
Social proximity to focal party elites (Z score)	4,213	0.40	0.48	−3.32	1.32
Social distance to opposing party elites	4,213	10.84	2.04	7.40	26.60
Social proximity to opposing elites (Z score)	4,213	0.39	0.49	−3.37	1.22

Summary statistics are restricted to eligible voters (white males over age 21), but Z scores are calculated on the full sample so the means and standard deviations are not exactly 0 and 1.

B.3 Williamsburg Measures

Variables used in Williamsburg analysis

`Voted in 2010`: From the Williamsburg 2010 municipal election voter file. Equals 1 if the respondent's name was in the file and 0 otherwise.

`Number of campaign activities in support of Foster`: From the question on the postelection wave of the survey asking, "Whether or not you voted, did you do any of the following for Scott Foster's campaign in the week before the election?". The available options were:

- Tried to persuade someone to vote for him
- Worked with the campaign
- Attended meetings, events, or election rallies
- Wore a campaign button or put up a political yard sign or bumper sticker
- Gave money
- Wrote on a blog/participated in on-line forum or message board
- Became a fan of his Facebook page
- Wrote letter to newspaper/magazine
- Other

The measure equals the number of the above options the respondent chose.

`Family income`: From the question on the preelection wave of the survey, asking "How would you describe your family's economic status?". The variable is coded 0 = "Working class", 1 = "Lower middle class", 2 = "Middle class", 3 = "Upper middle class", and 4 =

"Upper class".

`Is Caucasian, non-Hispanic?`: From the question on the preelection wave of the survey, asking "What term best describes your race?". The available options were Asian Black/African, American Latino/Hispanic, Native American, White, and Other. The variable equals 1 if the respondent chose White and did not choose Hispanic and 0 if he or she chose any other option.

`Is female?`: From the question on the preelection wave of the survey, asking "Are you male or female?". The variable equals 1 if the respondent chose female and 0 if he chose male.

`Is sophomore?`: From the question on the preelection wave of the survey, asking "When do you expect to graduate from William & Mary?". The available options were May 2010, December 2010, May 2011, May 2012, May 2013, May 2014, and Other. Respondents who chose Other were then given a followup prompt, "If you have chosen 'other', please specify:". The variable equals 1 if the respondent chose a 2012 graduation date in either response and 0 if he or she chose any other option.

`Is junior?`: From the question on the preelection wave of the survey, asking "When do you expect to graduate from William & Mary?". The available options were May 2010, December 2010, May 2011, May 2012, May 2013, May 2014, and Other. Respondents who chose Other were then given a followup prompt, "If you have chosen 'other', please specify:". The variable equals 1 if the respondent chose a 2011 graduation date in either response and 0 if he or she chose any other option.

`Is senior?`: From the question on the preelection wave of the survey, asking "When do you expect to graduate from William & Mary?". The available options were May 2010, December 2010, May 2011, May 2012, May 2013, May 2014, and Other. Respondents who chose Other were then given a followup prompt, "If you have chosen 'other', please specify:". The variable equals 1 if the respondent chose a 2010 graduation date in either response and

0 if he or she chose any other option.

`Lives on campus?`: From the question on the preelection wave of the survey, asking "Where are you living this semester at William & Mary?". The variable equals 1 if the respondent chose an on-campus location and 0 if he or she chose an off-campus option.

`Voted in 2008 primary`: From the question on the preelection wave of the survey, asking "Did you vote in a presidential primary in 2008?". The variable equals 1 if the respondent chose "Yes" and 0 if he or she chose "No".

`Voted in 2008 general election`: From the question on the preelection wave of the survey, asking "Did you vote in the 2008 presidential election?". The variable equals 1 if the respondent chose "Yes" and 0 if he or she chose "No".

`Number of campaign activities, 2008-2009`: From two questions on the preelection wave of the survey asking, "Did you do any of the following activities during the 2008 presidential election (including the primaries and caucuses)?" and "Did you do any of the following activities for one of the 2009 gubernatorial candidates (either during primary or general election campaigns)?". For each question, the available options were:

- Tried to persuade someone to vote for a particular candidate
- Worked on a campaign
- Attended meetings or election rallies
- Put up a political yard sign or bumper sticker or wore a campaign button
- Gave money to a candidate
- Wrote on a blog/participated in on-line forum or message board
- Wrote letter to newspaper/magazine
- Other

The measure equals the number of the above options the respondent chose across both questions.

`Interest in national politics`: From the question on the preelection wave of the survey, asking "In general how interested are you in national politics?". The variable is coded 0 = "Not interested at all", 1 = "Not very interested", 2 = "Somewhat interested", and 3 = "Very interested".

`Trust in government`: From the question on the preelection wave of the survey, asking "How much of the time do you think you can trust the government in Washington to do what is right?". The variable is coded 0 = "Just about always", 1 = "Most of the time", 2 = "Only some of the time", and 3 = "Never".

`Party ID`: From the question on the preelection wave of the survey, asking "How would you describe your party affiliation?". The variable is coded -3 = "Strong Democrat", -2 = "Democrat, not so strong", -1 = "Independent, closer to Democrats", 0 = "Independent", 1 = "Independent, closer to Republicans", 2 = "Republican, not so strong", and 3 = "Strong Republican." Respondents choosing "other" were coded as missing to allow the multiple imputation procedure to classify their partisanship.

`Partisan strength`: A transformation of the `party ID` variable, above. The variable takes the absolute value of `party ID` and thus larger values indicate greater attachment to a political party.

`Ideology`: From the question on the preelection wave of the survey, asking "How would you rate yourself on a scale of 1 to 7, where 1 is very liberal and 7 is very conservative?". Respondents rate themselves on three dimensions: Overall, Economic issues, and Social issues. We use the respondent's Overall placement. We center the variable on 0 and thus the variable ranges from -3 to $+3$ with larger values indicating greater conservatism.

`Network centrality`: Eigenvector centrality in the network. Scaled to hold a maximum score of 1.

`Network centrality (Z score)`: The `network centrality` measure standardized with mean = 0 and SD = 1.

`Social distance to the elite`: Discussed in detail in section entitled,"Constructing the Williamsburg 2010 Network." Equal to the social distance between an individual and Foster, the student running for city council.

`Social proximity to the elite (Z score)`: A transformation of the `social distance to the Elite` measure. The measure is first standardized with mean = 0 and SD = 1. It is then multiplied by −1 so that larger values indicate greater proximity to the elite.

Table B3: Descriptive statistics - Williamsburg

Statistic	N	Mean	St. Dev.	Min	Max
Voted in 2010	2,590	0.19	0.40	0	1
Number of campaign activities in support of Foster	1,004	0.80	1.33	0	9
Family income	2,298	2.49	0.86	0	4
Is Caucasian, non-Hispanic?	2,292	0.79	0.41	0	1
Is female?	2,558	0.60	0.49	0	1
Is sophomore?	2,560	0.26	0.44	0	1
Is junior?	2,560	0.24	0.42	0	1
Is senior?	2,560	0.25	0.43	0	1
Lives on campus?	2,565	0.81	0.39	0	1
Voted in 2008 primary	2,357	0.39	0.49	0	1
Voted in 2008 general election	2,363	0.71	0.45	0	1
Number of campaign activities, 2008-2009	2,590	1.60	2.22	0	14
Interest in national politics	2,357	2.14	0.77	0	3
Trust in government	1,725	1.15	0.56	0	3
Partisan strength	2,136	1.70	0.97	0	3
Party ID	2,136	−0.70	1.83	−3	3
Ideology	2,153	−0.62	1.53	−3	3
Network centrality	2,590	0.003	0.04	0.00	1.00
Network centrality (Z score)	2,590	0.03	1.22	−0.07	28.43
Social distance to the elite	2,590	6.18	1.78	0	12
Social proximity to the elite (Z score)	2,590	0.24	0.87	−2.61	3.27

Summary statistics do not include imputed data and are thus restricted to survey respondents age 18 years or older with at least one direct connection in the social network. The Z scores are calculated on all students in the data which also include non-respondents named as friends by a respondent and non-respondents sharing a room with a respondent. Thus the Z scores do not have means and standard deviations of exactly 0 and 1.

C Additional Religion Controls

By identifying social networks in the nineteenth century data, in part, based on church membership, we leave open the possibility that the relationship between social proximity and turnout is actually due to citizens preferring to support members of their religion or their church. The relationship between social proximity and vote choice may also arise due to mobilization efforts organized at the church level. To address these concerns, in this appendix we reestimate our models from the nineteenth century data with the addition of fixed effects for religious affiliation or church membership. The religious affiliation fixed effects models include a dummy for each of the denominations in the data, grouping together members of different churches from the same denomination. This approach allows us to control for the tendency of members of certain religions to turnout and support specific parties. If Episcopalians citizens prefer to vote for Episcopalian candidates, these models will control for this tendency. The church membership fixed effects models include a dummy for each church, in case citizens only prefer candidates from their own church rather than their religion more broadly.[30] With these new controls, the coefficients associated with the social proximity measures represent the remaining relationship between social proximity and turnout/vote choice after controlling for heterogeneity associated with church members, but also controlling for any influence arising from sharing religions or church membership with elites.

Table C1 presents the fixed effects models with turnout as the outcome variable. The results are largely unchanged from those presented in Table 1 of the main text. Compared to the Table 1 estimates, here the coefficients associated with social proximity are slightly larger

[30] In Alexandria, the religious affiliation fixed effects include indicators of affiliation with each of the following groups: Baptist, Catholic, Episcopal, Jewish (Beth El Synagogue), Methodist, Presbyterian, and Quaker. In Newport, where the church membership data are limited, we have data only on affiliation with Catholics and Methodists. Both sets of fixed effects models account for all church members and we therefore no longer include as a separate explanatory variable the indicator of whether the citizen was a church member.

in the Alexandria models and slightly smaller in the Newport models. These differences are small substantively and the coefficients remain statistically significant. The table omits the coefficients associated with the religion and church fixed effects to save space, but the results are available from the authors on request.

Table C2 presents the fixed effects models with vote choice as the outcome variable. The Alexandria coefficients associated with social proximity to majority party elites are no longer statistically significant, but the coefficients associated with social proximity to minority party elites remain statistically significant under the one-tailed test implied by our hypothesis. The relationships between vote choice in Newport and social proximity remain strong and statistically significant with these additional controls.

Table C1: Reestimating the Table 1 Models with Fixed Effects for Individuals' Religion or Church

Outcome Variable:	Did citizen turnout to vote?			
	Alexandria		Newport	
	(1)	(2)	(1)	(2)
Household wealth (thousands of dollars)	−0.011*	−0.011*	−0.002	−0.002
	(0.004)	(0.004)	(0.003)	(0.003)
ln(Household wealth)	0.042	0.043	−0.068*	−0.067*
	(0.022)	(0.022)	(0.015)	(0.015)
Mid-status occupation	0.231	0.224	0.181	0.201
	(0.124)	(0.124)	(0.104)	(0.104)
High-status occupation	0.527*	0.524*	0.373	0.391
	(0.197)	(0.198)	(0.201)	(0.201)
Owns home?	0.768*	0.770*	1.583*	1.591*
	(0.153)	(0.153)	(0.099)	(0.099)
Age (years)	−0.099*	−0.099*	−0.006	−0.004
	(0.021)	(0.021)	(0.015)	(0.015)
ln(Age)	4.728*	4.704*	0.011	−0.038
	(0.820)	(0.821)	(0.537)	(0.540)
Is African American?	—	—	1.328*	1.334*
	—	—	(0.428)	(0.429)
Is U.S. born?	0.516*	0.524*	0.238*	0.230*
	(0.128)	(0.129)	(0.089)	(0.089)
Network centrality (Z score)	−0.259*	−0.262*	−0.004	0.002
	(0.041)	(0.041)	(0.034)	(0.034)
Social proximity to elites (Z score)	0.749*	0.766*	0.546*	0.510*
	(0.125)	(0.126)	(0.137)	(0.136)
Intercept	−14.196*	−14.147*	−1.399	−1.279
	(2.173)	(2.177)	(1.359)	(1.365)
Religion Fixed Effects	*Yes*	*No*	*Yes*	*No*
Church Fixed Effects	*No*	*Yes*	*No*	*Yes*
N	2216	2216	3416	3416
Log Likelihood	−1315.481	−1313.134	−2091.360	−2084.584
AIC	2666.961	2672.269	4210.721	4207.168

*$p < 0.05$

Note: Reported coefficients are from ordinary least squares regressions (with standard errors in parentheses). Models are restricted to voters. The outcome variable is equal to the proportion of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. To conserve space, the table omits the coefficients associated with religion and church fixed effects.

Table C2: Reestimating the Table 2 Models with Fixed Effects for Individuals' Religion or Church

Outcome Variable:	Support for majority party			
	Alexandria		Newport	
	(1)	(2)	(1)	(2)
Household wealth (thousands of dollars)	0.002	0.002	−0.002	−0.002
	(0.001)	(0.001)	(0.002)	(0.002)
ln(Household wealth)	−0.004	−0.004	0.000	0.001
	(0.006)	(0.006)	(0.004)	(0.004)
Mid-status occupation	0.003	0.002	0.036	0.036
	(0.035)	(0.035)	(0.026)	(0.026)
High-status occupation	−0.013	−0.013	0.057	0.056
	(0.047)	(0.047)	(0.049)	(0.048)
Owns home?	0.045	0.045	−0.048	−0.049
	(0.036)	(0.036)	(0.026)	(0.026)
Age (years)	0.003	0.002	0.009*	0.010*
	(0.006)	(0.006)	(0.004)	(0.004)
ln(Age)	−0.101	−0.089	−0.298*	−0.317*
	(0.240)	(0.240)	(0.148)	(0.148)
Is African American?	—	—	−0.308*	−0.286*
	—	—	(0.087)	(0.087)
Is U.S. born?	0.163*	0.164*	−0.007	−0.010
	(0.039)	(0.039)	(0.023)	(0.023)
Network centrality (Z score)	−0.016	−0.016	0.053*	0.052*
	(0.014)	(0.014)	(0.008)	(0.008)
Social proximity to majority party elites (Z score)	0.119	0.119	0.323*	0.279*
	(0.078)	(0.079)	(0.065)	(0.066)
Social proximity to minority party elites (Z score)	−0.153	−0.149	−0.330*	−0.298*
	(0.080)	(0.082)	(0.068)	(0.069)
Intercept	0.703	0.668	1.144*	1.202*
	(0.642)	(0.644)	(0.378)	(0.377)
Religion Fixed Effects	*Yes*	*No*	*Yes*	*No*
Church Fixed Effects	*No*	*Yes*	*No*	*Yes*
N	1128	1128	1381	1381
R^2	0.084	0.087	0.157	0.171
Adj. R^2	0.069	0.068	0.148	0.159
RMSE	0.426	0.426	0.343	0.341

$^*p < 0.05$

Note: Reported coefficients are from ordinary least squares regressions (with standard errors in parentheses). Models are restricted to voters. The outcome variable is equal to the proportion of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. To conserve space, the table omits the coefficients associated with religion and church fixed effects.

D Selection Models of Vote Choice

Table D1 in this appendix displays selection models (Heckman, 1979) for Alexandria and Newport, estimated with maximum likelihood. To identify the models, we must omit some variables from the second equation (vote choice) that have explanatory power in the first equation (turnout). We thus omit the occupational status and home ownership indicators, which are statistically significant predictors in the turnout models (Table 1), but not the vote choice models in the main text (Table 2). Likelihood ratio tests for each set of equations fail to reject the null of no sample selection. We thus relegate the selection models to this appendix.

Table D1: Estimates from a Heckman Selection Model Predicting the Proportion of an Individual's Votes Cast for the Majority Party in the City (Based on the Statewide Election in 1859 Alexandria, VA and the Local Election in 1874 Newport, KY)

	Alexandria	Newport
Turnout Equation		
Household wealth (thousands of dollars)	-0.006 (0.002)*	-0.001 (0.002)
ln(Household wealth)	0.027 (0.013)*	-0.040 (0.009)*
Mid-status occupation	0.179 (0.075)*	0.120 (0.062)
High-status occupation	0.356 (0.116)*	0.230 (0.123)
Owns home?	0.465 (0.090)*	0.978 (0.059)*
Age (years)	-0.059 (0.013)*	-0.003 (0.009)
ln(Age)	2.841 (0.497)*	-0.027 (0.325)
Is church member?	0.350 (0.076)*	
Is African American?		0.806 (0.262)*
Is U.S. born?	0.326 (0.075)*	0.127 (0.053)*
Network centrality (Z score)	-0.141 (0.024)*	0.002 (0.020)
Social proximity to elites (Z score)	0.335 (0.074)*	0.379 (0.070)*
Intercept	-8.555 (1.314)*	-0.732 (0.821)
Vote Choice Equation		
Household wealth (thousands of dollars)	0.002 (0.001)	-0.002 (0.002)
ln(Household wealth)	-0.002 (0.008)	0.001 (0.004)
Age (years)	0.004 (0.008)	0.006 (0.004)
ln(Age)	-0.155 (0.366)	-0.222 (0.153)
Is church member?	0.083 (0.042)*	
Is African American?		-0.343 (0.092)*
Is U.S. born?	0.184 (0.043)*	-0.019 (0.023)
Network centrality (Z score)	-0.004 (0.021)	0.048 (0.007)*
Social proximity to majority party elites (Z score)	0.220 (0.073)*	0.314 (0.067)*
Social proximity to minority party elites (Z score)	-0.305 (0.073)*	-0.197 (0.070)*
Intercept	0.888 (1.126)	0.920 (0.412)*
Error Terms		
σ	0.427 (0.013)*	0.359 (0.009)*
ρ	-0.118 (0.330)	0.204 (0.116)
N - Turnout equation	2216	3414
N - Did Not Vote	1088	2033
N - Vote choice equation	1128	1381
Log Likelihood	-1955.493	-2623.780
AIC	3958.986	5295.560

$^{*}p < 0.05$

Note: For the turnout equation, reported estimates are probit coefficients (with standard errors in parentheses). For the vote choice equation, reported estimates are linear model coefficients. Models are restricted to eligible voters (In Alexandria, white males at least 21 years of age; in Newport, males at least 21 years of age). The outcome variable in the vote choice equations is equal to the proportion of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data.

E Ordered Logistic Regressions of Vote Choice

This appendix reestimates the models from Table 2 using ordered logistic regression to account for the limited number of categories in the outcome variables. For these analyses, the outcome variable is the number of votes an individual casts for the majority party in the city (The Opposition Party in Alexandria and The Democratic Party in Newport). Consistent with the Elite Proximity-Support Hypothesis I, the coefficient associated with proximity to the majority party is positive and statistically significant in each city. Likewise, the coefficient associated with proximity to the minority party is negative and statistically significant in each city, lending support to the Elite Proximity-Support Hypothesis II.

Table E1: Estimates from a Model Predicting the Number of an Individual's Votes Cast for the Majority Party in the City (Based on the Statewide Election in 1859 Alexandria, VA and the Local Election in 1874 Newport, KY)

	Alexandria			Newport		
	(1)	(2)	(3)	(1)	(2)	(3)
Explanatory Variables						
Household wealth (thousands of dollars)	0.006	0.006	0.006	−0.012	−0.011	−0.012
	(0.006)	(0.006)	(0.006)	(0.008)	(0.008)	(0.008)
ln(Household wealth)	0.002	−0.009	−0.019	−0.010	0.011	0.011
	(0.028)	(0.028)	(0.029)	(0.020)	(0.020)	(0.020)
Mid-status occupation	0.227	0.041	0.035	−0.325*	0.252*	0.159
	(0.135)	(0.152)	(0.155)	(0.107)	(0.128)	(0.132)
High-status occupation	−0.041	−0.204	−0.192	−0.219	0.338	0.360
	(0.192)	(0.202)	(0.203)	(0.234)	(0.244)	(0.243)
Owns home?	0.150	0.145	0.171	−0.286*	−0.277*	−0.279*
	(0.156)	(0.156)	(0.157)	(0.133)	(0.134)	(0.134)
Age (years)	0.010	0.004	0.006	0.026	0.036	0.036
	(0.026)	(0.026)	(0.026)	(0.020)	(0.020)	(0.020)
ln(Age)	−0.381	−0.145	−0.251	−0.882	−1.252	−1.214
	(1.063)	(1.064)	(1.068)	(0.739)	(0.745)	(0.751)
Is church member?	0.215	0.225	0.304*			
	(0.119)	(0.120)	(0.147)			
Is African American?				−1.337*	−1.888*	−1.907*
				(0.389)	(0.404)	(0.404)
Is U.S. born?	0.909*	0.807*	0.792*	−0.262*	−0.124	−0.121
	(0.152)	(0.156)	(0.158)	(0.112)	(0.114)	(0.115)
Network centrality (Z score)		−0.155*	−0.080		0.308*	0.259*
		(0.056)	(0.062)		(0.038)	(0.045)
Social proximity to majority party elites (Z score)			0.956*			1.284*
			(0.313)			(0.324)
Social proximity to minority party elites (Z score)			−1.193*			−0.779*
			(0.319)			(0.338)
Thresholds						
τ_1	−1.136	−0.738	−1.132	−4.469*	−4.870*	−4.618*
	(2.852)	(2.851)	(2.864)	(1.882)	(1.894)	(1.917)
τ_2	−0.347	0.057	−0.329	−3.612	−4.003*	−3.745
	(2.852)	(2.852)	(2.864)	(1.880)	(1.892)	(1.915)
τ_3	−0.266	0.138	−0.246	−2.994	−3.374	−3.110
	(2.852)	(2.852)	(2.864)	(1.879)	(1.891)	(1.914)
τ_4	−0.231	0.172	−0.211	−2.552	−2.916	−2.645
	(2.852)	(2.852)	(2.864)	(1.878)	(1.890)	(1.914)
τ_5	0.156	0.560	0.182	−2.354	−2.706	−2.431
	(2.852)	(2.851)	(2.864)	(1.878)	(1.890)	(1.913)
τ_6				−2.195	−2.539	−2.261
				(1.878)	(1.889)	(1.913)
τ_7				−1.998	−2.332	−2.050
				(1.877)	(1.889)	(1.913)
τ_8				−1.708	−2.028	−1.742
				(1.877)	(1.889)	(1.913)
τ_9				−1.064	−1.360	−1.068
				(1.878)	(1.890)	(1.914)
Num. obs.	1128	1128	1128	1381	1381	1381
Log Likelihood	−1464.402	−1460.588	−1453.533	−2997.554	−2964.636	−2953.734
AIC	2956.803	2951.176	2941.066	6031.109	5967.272	5949.468

$^*p < 0.05$

Note: Reported coefficients are from ordered logistic regressions (with standard errors in parentheses). Models are restricted to voters. The outcome variable is equal to the number of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data.

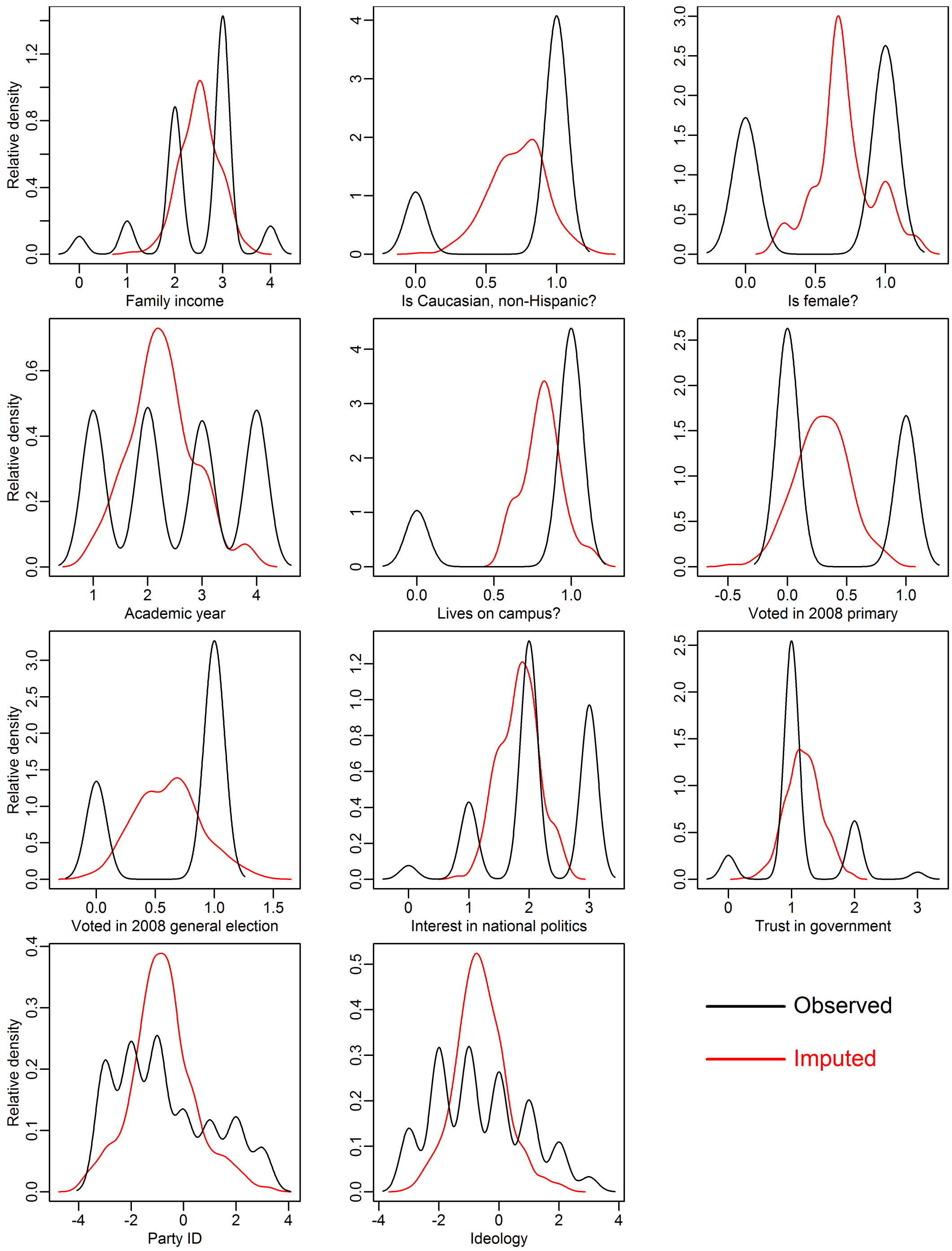
F Details on Williamsburg Multiple Imputation

This appendix discusses the multiple imputation used for the Williamsburg analyses. For the imputations, we use the Amelia II program (Honaker et al., 2011), implemented in R version 3.1.1. We conduct separate sets of five imputations for each outcome variable (turnout in the 2010 municipal election, participation for Foster in 2010, and the 2008 turnout placebo). In each imputation model, we use the outcome variable of interest along with all explanatory variables from the analyses except for partisan strength. We calculate partisan strength after the imputation because it is a transformation of the party ID variable included in the imputation. Turnout in 2010 does not need to be imputed because it comes from the voter file and thus has no missing data. We do not impute missing values for the 2010 Foster participation index because it is the lone variable from the postelection wave and would thus require imputing more observations ($N = 1,586$) than we have observed ($N = 1,004$). Those models are thus restricted to postelection respondents. The 2008-2009 participation index also does not need to be imputed because it was included on the shortened version of the preelection wave of the survey and thus has no missing values.

Figures F1–F3 show the distributions of the observed and imputed values for each variable. In the figures, the imputed distributions appear quite similar to the observed distributions, except for the dichotomous variables. As Honaker et al. (2011, 17) recommend, we do not constrain these or ordinal variables to integer values, excepting voting in the 2008 general election for the 2008 participation placebo analysis. For that set of imputations, we constrain the variable to equal either 0 or 1 in order to allow for analysis by logistic regression. In addition, for all analyses, we impute academic year as a single variable and use this variable to construct dichotomous indicator variables for individual class years. This transformation is necessary because we do not expect students' academic year to produce linear effects.

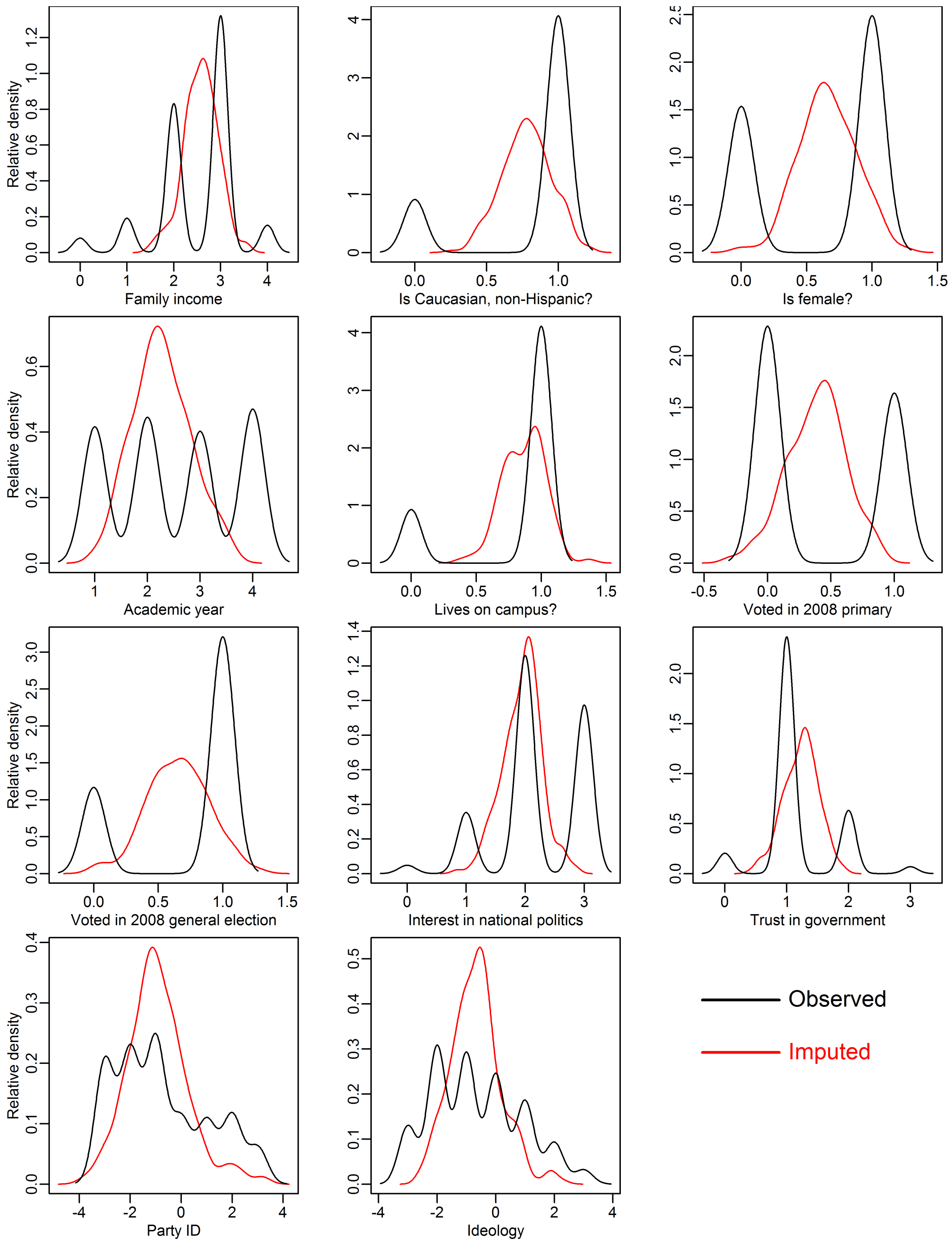
Figures F4–F6 show an overimputation analysis for the imputed variables. In the analysis,

Figure F1: Density plots of imputed variables for the turnout models.



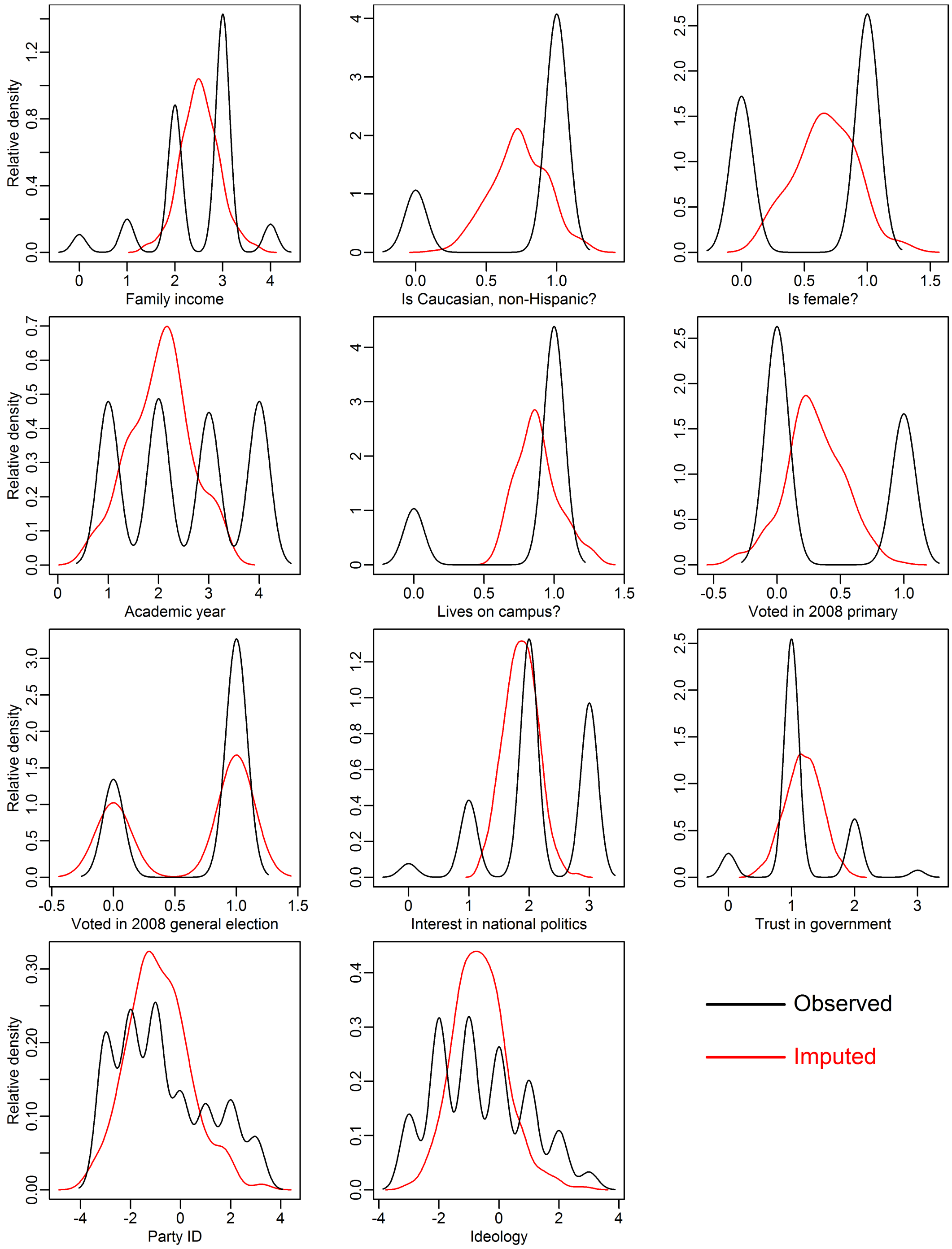
Figures show the distributions of observed (black) and imputed (red) values. Following Honaker et al. (2011, 17), we do not restrict imputations of dichotomous or ordinal variables to integer values.

Figure F2: Density plots of imputed variables for the 2010 participation models.



Figures show the distributions of observed (black) and imputed (red) values. Following Honaker et al. (2011, 17), we do not restrict imputations of dichotomous or ordinal variables to integer values.

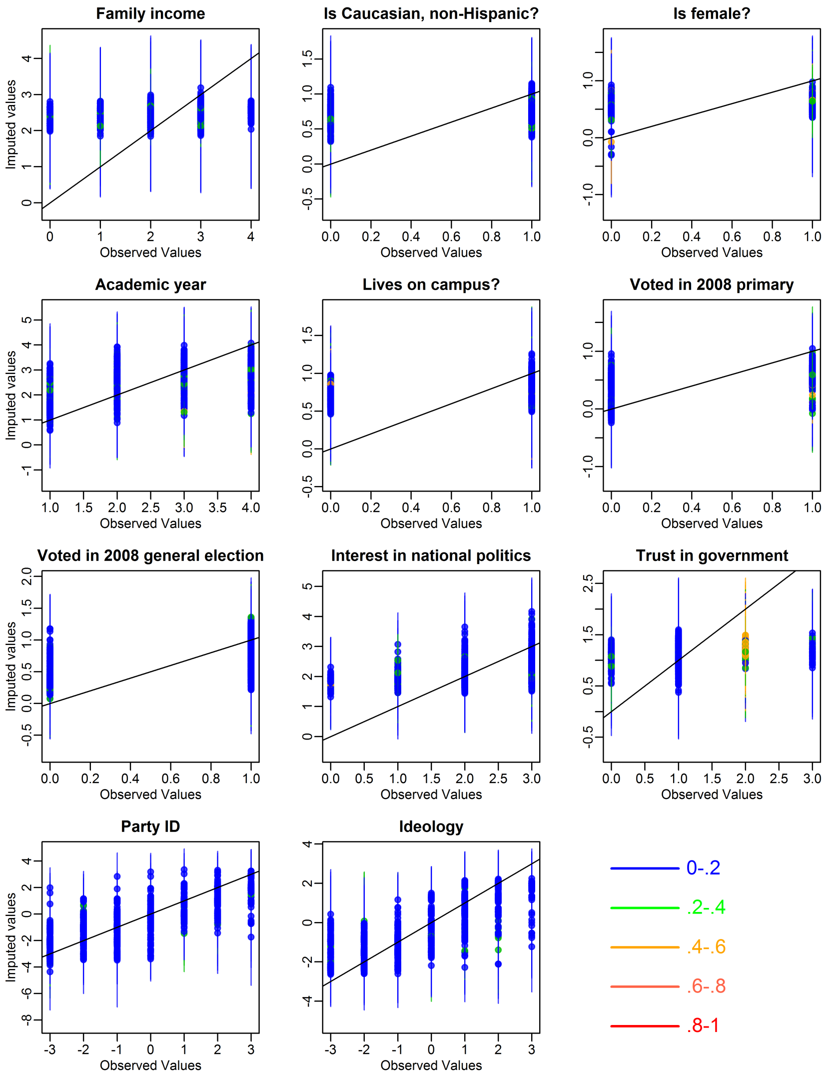
Figure F3: Density plots of imputed variables for the 2008 turnout placebo models.



Figures show the distributions of observed (black) and imputed (red) values. Following Honaker et al. (2011, 17), we do not restrict imputations of dichotomous or ordinal variables to integer values, with the exception of the 2008 turnout variable. We constrain this outcome variable to equal either 0 or 1 to allow for analysis by logistic regression.

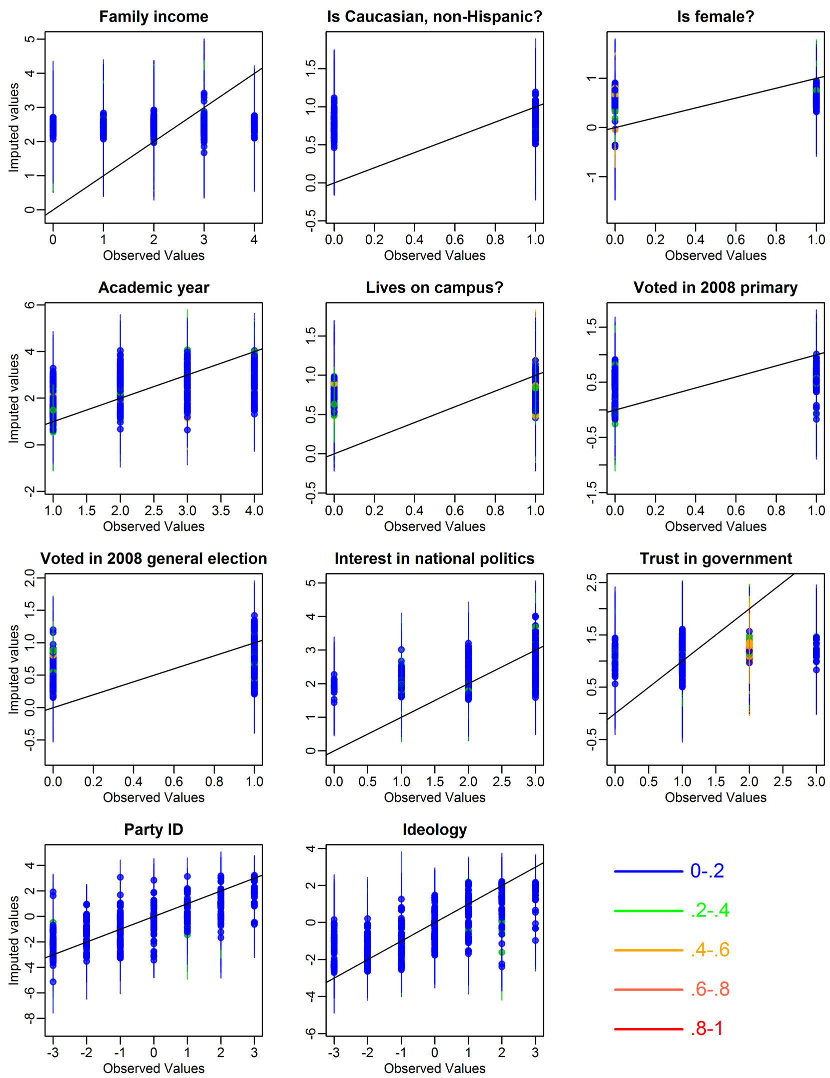
each observed value in the data is iteratively treated as if it was missing. A large number of imputations are then run and the figures compare the observed values to the imputed values (Honaker et al., 2011, 29–33). The figures suggest that the imputation models perform well for all variables across almost all values.

Figure F4: The Imputation Model would Consistently Recover Observed Values from the Turnout Models had they been Missing.



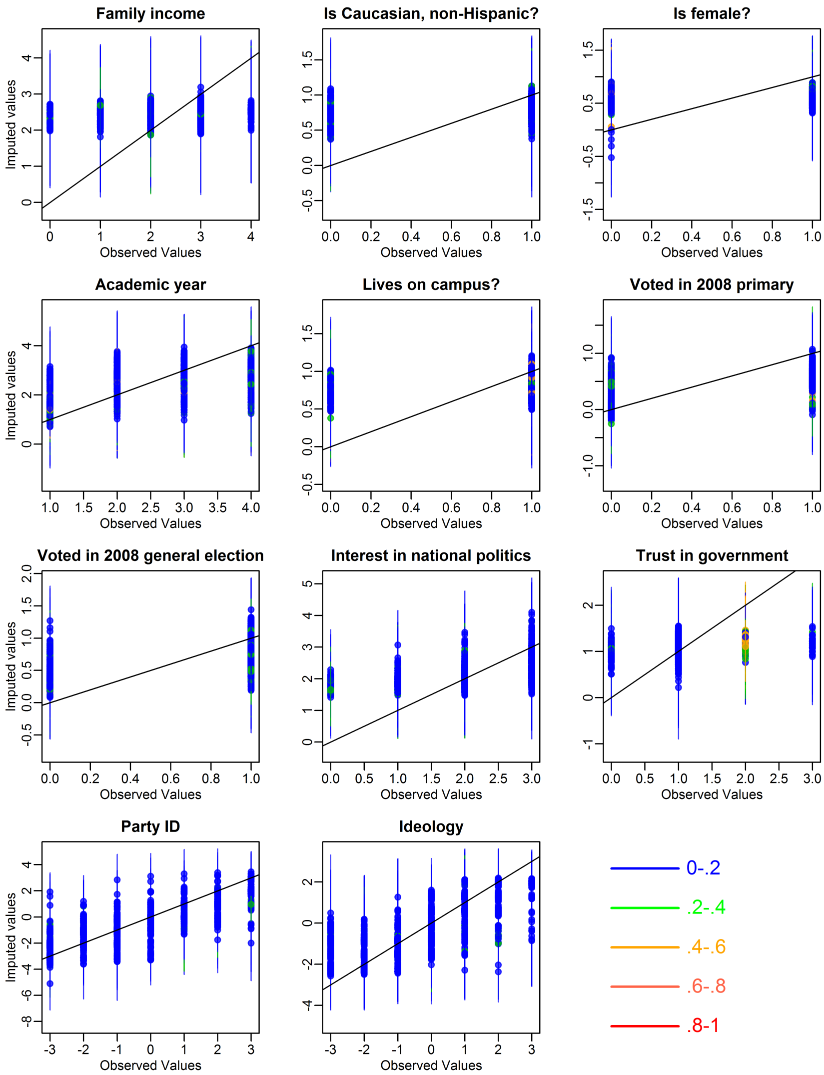
Figures show how well the imputation model recovers observed values if they were instead missing. Dots show mean imputed values of the variable (Y) given the observed values (X). Vertical lines indicate 90% confidence intervals of where the imputed values would fall if the observed data were missing at that value. With a perfect imputation model, all dots would fall on the diagonal line where $y = x$. When the confidence intervals fail to overlap this line, it indicates a poor model fit at that value of the variable (Honaker et al., 2011, 29–33). The colors of the confidence interval indicate the proportion of covariates missing for that imputation, as indicated in the key (lower values are based on more data and are thus expected to be better). Here, the figures suggest a good fit for all variables across almost all values, except when `family income` $= 0$, `interest in national politics` $= 0$, or `trust in government` $= 3$.

Figure F5: The Imputation Model would Consistently Recover Observed Values from the Participation Models had they been Missing.



Figures show how well the imputation model recovers observed values if they were instead missing. Dots show mean imputed values of the variable (Y) given the observed values (X). Vertical lines indicate 90% confidence intervals of where the imputed values would fall if the observed data were missing at that value. With a perfect imputation model, all dots would fall on the diagonal line where $y = x$. When the confidence intervals fail to overlap this line, it indicates a poor model fit at that value of the variable (Honaker et al., 2011, 29–33). The colors of the confidence interval indicate the proportion of covariates missing for that imputation, as indicated in the key (lower values are based on more data and are thus expected to be better). Here, the figures suggest a good fit for all variables across almost all values, except when `family income` $= 0$, `interest in national politics` $= 0$, or `trust in government` $= 3$.

Figure F6: The Imputation Model would Consistently Recover Observed Values from the Placebo Models had they been Missing.



Figures show how well the imputation model recovers observed values if they were instead missing. Dots show mean imputed values of the variable (Y) given the observed values (X). Vertical lines indicate 90% confidence intervals of where the imputed values would fall if the observed data were missing at that value. With a perfect imputation model, all dots would fall on the diagonal line where $y = x$. When the confidence intervals fail to overlap this line, it indicates a poor model fit at that value of the variable (Honaker et al., 2011, 29–33). The colors of the confidence interval indicate the proportion of covariates missing for that imputation, as indicated in the key (lower values are based on more data and are thus expected to be better). Here, the figures suggest a good fit for all variables across almost all values, except when `family income` $= 0$, `interest in national politics` $= 0$, or `trust in government` $= 3$.

G Placebo Analysis

Sekhon (2009, 501) argues that all observational analyses should employ placebo tests as robustness checks:

> In an observational placebo test, one attempts to find a stratum of data and an outcome for which the treatment effect is known with similar certainty. Then one tests to see if the observational method one is using is able to recover the result that is known a priori. In this fashion, one simultaneously checks both the selection-on-observables assumption and the estimator.

As an example of a placebo, he focuses on Gerber and Green's (2000) study of the effectiveness of get-out-the-vote (GOTV) messages delivered over the telephone. In this case, we know a priori that telephone GOTV messages should have no effect on turnout prior to receiving the message. Yet in their data, those who received the GOTV message were more likely to have voted in past elections than were those in the control group, even after accounting for other observable differences between these groups. This finding suggests that some confounds remain uncontrolled, biasing comparisons of turnout in the election following the GOTV message.

In our case, we have data for an analogous placebo test. While our theory suggests that social proximity to the elite should encourage turnout in the 2010 municipal election, it should have no effect on turnout in the 2008 election, which occurred two years before Foster ran for office and before many of the 2010 students arrived at William & Mary. Therefore, Table G1 replicates Turnout Model 3 presented in Table 3, but this time uses self-reported turnout in the 2008 election as the outcome measure (we therefore must omit it as an explanatory variable).[31]

If the coefficient on social proximity remains large, it contradicts our interpretation of the

[31] We do not have access to statewide voter files and thus cannot use validated turnout.

results, suggesting instead that people more proximate to the elite are more participatory for reasons other than their social proximity. As Table G1 demonstrates, however, the coefficient is almost zero, lending support to our approach. Setting other variables to their medians, the model predicts those who are at the mean proximity to the elite (Z score = 0) will have a .20 probability of voting in the 2008 general election. The model predicts someone one standard deviation closer to the elite socially will have only a .007 higher probability of voting (95% CI [-.01, .03]).

This null result may artificially arise because many freshmen and some sophomores were not yet eligible to vote in 2008. Omitting freshmen and rerunning the imputation process and model, this estimated difference in probabilities is only .006 (95% CI [-.01, .02]). Omitting freshmen and sophomores, the difference is .009 (95% CI [-.001, .02]). Across these three specifications, the lack of a substantively significant effect anywhere within the 95% confidence interval provides strong evidence of a negligible effect (Rainey, 2014).

Table G1: Estimates from a Model Predicting an Individual's Self-reported Turnout in the 2008 General Election Using her Social Proximity to the Elite and Other Variables (Based on the Local Election in 2010 Williamsburg, VA)

Outcome Variable: Did respondent report voting in 2008 general election?		
	Estimate	SE
Intercept	−3.89	(0.47)∗
Family income	0.18	(0.08)∗
Is Caucasian, non-Hispanic?	0.76	(0.15)∗
Is female?	0.18	(0.14)
Is sophomore?	2.72	(0.21)∗
Is junior?	3.20	(0.20)∗
Is senior?	3.41	(0.21)∗
Lives on campus?	0.33	(0.18)
Voted in 2008 primary	2.99	(0.32)∗
Number of campaign activities, 2008-2009	0.07	(0.04)
Interest in national politics	0.29	(0.10)∗
Trust in government	−0.14	(0.22)
Partisan strength	0.07	(0.07)
Social proximity to the elite (Z score)	0.05	(0.09)
Network centrality (Z score)	0.06	(0.16)
N	2590	
Log Likelihood	-862.59	
AIC	1755.19	

* indicates $p < .05$. Estimates based on five imputations. The omitted reference category for academic year is freshman. The 2008 election occurred two years prior to the survey and thus social proximity to Foster should have little impact on 2008 turnout.

H Sensitivity Analysis

This appendix implements sensitivity analysis, originally developed by VanderWeele (2011), to explore how robust our estimates are to bias emerging from sources such as the environments and interests people share with their associates. The analysis assumes there is some binary omitted variable U, which can be thought of as either a shared environmental influence, shared interest, or some combination of these factors. We then observe how the coefficients associated with our social proximity measures change under varying assumptions about the effect of U on our outcome variable of interest, Y, and the distribution of U across the range of our explanatory variable of interest.

Take for example, Table H1, which shows the sensitivity analysis for the effect of elite proximity on turnout in Alexandria, originally reported in Table 1, Model 3. In Table H1, we assume that U has a strong positive association with elite proximity. Specifically, we assume $U = 1$ for 30% of individuals for whom elite proximity $= m$ and 70% of individuals for whom elite proximity $= m + 1$, where m is some value of elite proximity. For example, since elite proximity is standardized with mean $= 0$ and SD $= 1$, if $m = 0$ we are assuming that $U = 1$ for 30% of individuals with the mean level of elite proximity and 70% of individuals for whom elite proximity is one standard deviation above the mean. In practice, the value of m does not matter because the effects are expressed as odds ratios which are invariant to the specific value of the explanatory variable (Long, 1997, 81). We can then explore how the effect of elite proximity on turnout changes as γ, the effect of U on Y, increases. Since γ is expressed as an odds ratio, when $\gamma = 1$, there is no bias and we obtain the estimated effect from Table 1 ($exp(\hat{\beta}) = exp(\sim 0.56) = 1.74$). As the table shows, our estimated effect attenuates as γ increases, but we would not conclude that the effect of social proximity is entirely spurious unless $\gamma > 5$. In other words, it would take very strong bias to explain away these results; people for whom $U = 1$ would have to be five times more likely to vote than people for whom $U = 0$. To put this magnitude into perspective, the effect of the omitted variable would need to be more than twice as strong as the estimated effect of home ownership.

Table H1: Estimated Odds Ratio for Effect of Social Proximity to Elites on Turnout, Depending on Magnitude of Bias, γ (Based on Statewide Election in 1859 Alexandria)

			γ		
Explanatory variable	1	2	3	4	5
Social proximity to elites (Z score)	1.74	1.33	1.16	1.07	1.01

Cell entries represent the effect of the explanatory variable on turnout, expressed as an odds ratio. γ represents the magnitude of the bias, expressed as an odds ratio.

Table H2 corrects the elite proximity estimate from the Newport turnout model displayed in Table 1, Model 3. It shows that an omitted variable or set of variables would need to produce an effect with an odds ratio greater than 9 to explain away this elite proximity effect.

Table H2: Estimated Odds Ratio for Effect of Social Proximity to Elites on Turnout, Depending on Magnitude of Bias, γ (Based on Local Election in 1874 Newport, KY)

			γ		
Explanatory variable	1	3	5	7	9
Social proximity to elites (Z score)	2.05	1.36	1.19	1.10	1.05

Cell entries represent the effect of the explanatory variable on turnout, expressed as an odds ratio. γ represents the magnitude of the bias, expressed as an odds ratio.

Table H3 corrects the estimates of social proximity effects on vote choice in Alexandria from Table 2, Model 3. Unlike the previous sensitivity analyses, which focus on logistic regressions, the models in Table 2 are linear regressions. For these analyses, we assume it is 40 percentage points less common for the omitted variable $U = 1$ among individuals with social proximity $= m$ than for individuals with social proximity $= m + 1$, where m is some value of social proximity. In these tables, γ represents a β coefficient summarizing the effect of the omitted variable U on Y. For the correction of the social proximity to minority elites estimate, which is negative in the original model, we multiply $\gamma \times -1$ because positive γ values would magnify rather than attenuate the social influence estimate. Table H3 shows that both estimates are robust to strong bias. The beta coefficient of the omitted variable would need to exceed 0.5 to explain away either of these social influence effects. In other words, its effect would need to produce more than a 50 percentage-point change in the proportion of offices in the election that individuals chose majority party candidates.

Table H3: Estimated Beta Coefficients for Effects of Social Proximity to Majority and Minority Party Elites on Vote Choice, Depending on Magnitude of Bias, γ (Based on Statewide Election in 1859 Alexandria)

			γ				
Explanatory variable	0	0.10	0.20	0.30	0.40	0.50	0.60
Social proximity to majority party elites (Z score)	0.23	0.19	0.15	0.11	0.07	0.03	−0.01
Social proximity to minority party elites (Z score)	−0.30	−0.26	−0.22	−0.18	−0.14	−0.10	−0.06

Cell entries represent the effect of the explanatory variable on the proportion of votes cast for the majority party (The Opposition Party), expressed as a beta coefficient. γ represents the magnitude of the bias, expressed as a beta coefficient.

Table H4 corrects the Democratic proximity and Republican proximity estimates from Table 2, Newport Model 3. The table shows that the omitted variable would again need to exceed 0.5 to explain away either of these social influence effects. This potential effect would need to exceed greatly even the estimated effect of race in post-war Kentucky—all else equal, African Americans voted for Republicans only 37 percentage points (95% CI [.19, .55]) more than whites according to the estimate in Table 2.

Table H4: Estimated Beta Coefficients for Effects of Social Proximity to Majority and Minority Party Elites on Vote Choice, Depending on Magnitude of Bias, γ (Based on Local Election in 1874 Newport, KY)

			γ			
Explanatory variable	0	0.10	0.20	0.30	0.40	0.50
Social proximity to majority party elites (Z score)	0.30	0.26	0.22	0.18	0.14	0.10
Social proximity to minority party elites (Z score)	−0.20	−0.16	−0.12	−0.08	−0.04	−0.004

Cell entries represent the effect of the explanatory variable on the proportion of votes cast for the majority party (The Democratic Party), expressed as a beta coefficient. γ represents the magnitude of the bias, expressed as a beta coefficient.

Table H5 shows sensitivity analysis for the estimated effects of proximity to the elite on turnout in Williamsburg (originally reported in Table 3, Turnout Model 3) and Table H6 shows this analysis for participation (originally reported in Table 3, Campaign Activities Model 3). The turnout model is a logistic regression and the participation model is a negative binomial regression. Therefore, γ in Tables H5 and H6 represents an odds ratio and we again assume $U = 1$ for 30% of individuals for whom proximity to Foster $= m$ and 70% of individuals for whom proximity $= m + 1$, where m is some value of proximity. In the analyses shown in Table 3, we include the typical controls for voting and thus we should expect less omitted variable bias than in the nineteenth century estimates. Thus, confidence in the estimates should not require as high a threshold for γ. Nonetheless, Tables H5 and H6 show that the estimates are robust to omitted variables with odds ratios greater than three.

Table H5: Estimated Odds Ratio for Effect of Social Proximity to the Elite on Turnout, Depending on Magnitude of Bias, γ (Based on the Local Election in 2010 Williamsburg, VA)

			γ			
Explanatory variable	1	1.50	2	2.50	3	3.50
Social proximity to the Elite (Z score)	1.52	1.29	1.16	1.07	1.01	0.97

Cell entries represent the effect of the explanatory variable on turnout, expressed as an odds ratio. γ represents the magnitude of the bias, expressed as an odds ratio.

Table H6: Estimated Odds Ratio for Effect of Social Proximity to the Elite on the Number of Campaign Activities an Individual Will Complete in Support of the Elite, Depending on Magnitude of Bias, γ (Based on the Local Election in 2010 Williamsburg, VA)

			γ				
Explanatory variable	1	1.50	2	2.50	3	3.50	4
Social proximity to the Elite (Z score)	1.60	1.37	1.23	1.14	1.07	1.02	0.98

Cell entries represent the effect of the explanatory variable on the number of campaign activities an individual will complete in support of the elite, expressed as an odds ratio. γ represents the magnitude of the bias, expressed as an odds ratio.

I Additional Geography Controls

Scholars have long been aware of the tendency for individuals to prefer candidates from geographically proximate locations–a tendency Key (1949) dubs “friends-and-neighbors” voting. By Key’s definition, all candidates are local in the municipal elections under study. An extension of this logic would suggest voters should prefer candidates who reside on their block over the candidates’ less proximate opponents. In this section, we demonstrate that our social proximity measures improve model fit beyond this simpler geography-based measure of citizens’ connections to elites.

Table I1 replicates the turnout models from Table 1, adding an explanatory variable counting the number of elites living on the individual’s block. Table I2 replicates the vote choice models from Table 2, adding variables counting alternately the number of majority and minority party elites on the block. The tables present two models for each city: one omitting and one including the social network measures. In each table, the coefficients associated with social proximity remain statistically significant and similar in magnitude to those presented in the main text. In the note below each table, we show that including our social network measures provides a statistically significant improvement in model fit.

Table I1: Reestimating the Table 1 Turnout Models with controls for the number of elites on an individual's block.

Outcome Variable:	Did citizen turnout to vote?			
	Alexandria		Newport	
	(1)	(2)	(1)	(2)
Household wealth (thousands of dollars)	−0.011*	−0.010*	−0.001	−0.002
	(0.004)	(0.004)	(0.003)	(0.003)
ln(Household wealth)	0.063*	0.044*	−0.072*	−0.067*
	(0.021)	(0.022)	(0.015)	(0.015)
Mid-status occupation	0.687*	0.287*	0.144	0.191
	(0.103)	(0.123)	(0.082)	(0.104)
High-status occupation	0.864*	0.581*	0.240	0.403*
	(0.186)	(0.194)	(0.189)	(0.201)
Owns home?	0.765*	0.781*	1.639*	1.578*
	(0.150)	(0.152)	(0.097)	(0.099)
Age (years)	−0.091*	−0.099*	−0.005	−0.007
	(0.020)	(0.021)	(0.015)	(0.015)
ln(Age)	4.380*	4.719*	−0.135	0.010
	(0.809)	(0.817)	(0.524)	(0.537)
Is church member?	0.881*	0.575*	—	—
	(0.106)	(0.126)	—	—
Is African American?	—	—	1.421*	1.294*
	—	—	(0.425)	(0.427)
Is U.S. born?	0.723*	0.546*	0.124	0.210*
	(0.119)	(0.124)	(0.086)	(0.088)
Number of elites on block	0.011	−0.147	0.168	0.036
	(0.167)	(0.169)	(0.197)	(0.198)
Network centrality (Z score)	—	−0.239*	—	−0.007
	—	(0.041)	—	(0.035)
Social proximity to elites (Z score)	—	0.576*	—	0.713*
	—	(0.128)	—	(0.137)
Intercept	−13.505*	−14.187*	−0.580	−1.364
	(2.148)	(2.168)	(1.323)	(1.357)
N	2216	2216	3416	3416
Log Likelihood	−1338.752	−1317.386	−2121.092	−2098.867
AIC	2699.504	2660.772	4264.184	4223.734

$^{*}p < 0.05$

Note: Reported coefficients are from logistic regressions (with standard errors in parentheses). Models are restricted to eligible voters (In Alexandria, white males at least 21 years of age; in Newport, males at least 21 years of age). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. In each city, a likelihood ratio test suggests that Model 2—which includes the social network measures—provides a better fit than does Model 1 (In Alexandria, $\chi^2(DF = 2) = 42.7$; p < .001. In Newport, $\chi^2(DF = 2) = 44.4$; p < .001).

Table I2: Reestimating the Table 2 Vote Choice Models with controls for the number of elites on an individual's block.

Outcome Variable:	Support for majority party			
	Alexandria		Newport	
	(1)	(2)	(1)	(2)
Household wealth (thousands of dollars)	0.002	0.002	−0.002	−0.002
	(0.001)	(0.001)	(0.002)	(0.002)
ln(Household wealth)	0.001	−0.004	−0.001	0.002
	(0.006)	(0.006)	(0.004)	(0.004)
Mid-status occupation	0.041	0.011	−0.074*	0.040
	(0.031)	(0.035)	(0.022)	(0.027)
High-status occupation	0.029	0.004	−0.038	0.083
	(0.045)	(0.047)	(0.050)	(0.050)
Owns home?	0.040	0.046	−0.056*	−0.048
	(0.036)	(0.036)	(0.027)	(0.027)
Age (years)	0.002	0.002	0.006	0.008
	(0.006)	(0.006)	(0.004)	(0.004)
ln(Age)	−0.065	−0.064	−0.194	−0.284
	(0.243)	(0.242)	(0.158)	(0.153)
Is church member?	0.061*	0.094*	—	—
	(0.027)	(0.034)	—	—
Is African American?	—	—	−0.276*	−0.368*
	—	—	(0.092)	(0.090)
Is U.S. born?	0.222*	0.197*	−0.057*	−0.028
	(0.036)	(0.038)	(0.024)	(0.023)
Number of majority party elites on block	0.086	0.071	0.091	0.030
	(0.062)	(0.062)	(0.107)	(0.104)
Number of minority party elites on block	−0.133	−0.097	−0.121*	−0.088
	(0.093)	(0.093)	(0.060)	(0.059)
Network centrality (Z score)	—	−0.008	—	0.055*
	—	(0.014)	—	(0.009)
Social proximity to majority party elites (Z score)	—	0.212*	—	0.276*
	—	(0.072)	—	(0.069)
Social proximity to minority party elites (Z score)	—	−0.291*	—	−0.179*
	—	(0.073)	—	(0.071)
Intercept	0.499	0.570	1.076*	1.146*
	(0.653)	(0.649)	(0.402)	(0.391)
N	1128	1128	1381	1381
R^2	0.053	0.071	0.033	0.097
Adj. R^2	0.044	0.059	0.025	0.088
RMSE	0.431	0.428	0.367	0.355

$^*p < 0.05$

Note: Reported coefficients are from ordinary least squares regressions (with standard errors in parentheses). Models are restricted to voters. The outcome variable is equal to the proportion of votes cast for the majority party in the city (The Opposition Party in Alexandria; The Democratic Party in Newport). The omitted reference category for occupational status includes low-status occupations, the unemployed, and those lacking occupational data. In each city, an F-test suggests that Model 2—which includes the social network measures—provides a better fit than does Model 1 (In Alexandria, $F(DF = 3, 1113) = 3.9$; p $< .001$. In Newport, $F(DF = 3, 1366) = 12.2$; $p < .001$).

J References for Online Appendices

References

Allen, Howard W. and Kay Warren Allen. 1981. Vote Fraud and Data Validity. In *Analyzing Electoral History: A Guide to the Study of American Voter Behavior*, ed. Jerome Clubb, William Flanigan and Nancy Zingale. Sage Publications pp. 153–193.

Bensel, Richard Franklin. 2004. *The American Ballot Box in the Mid-Nineteenth Century*. New York: Cambridge University Press.

Bourke, Paul and Donald A. DeBats. 1995. *Washington County: Politics and Community in Antebellum America*. Baltimore: Johns Hopkins University Press.

Bourke, Paul F. and Donald A. DeBats. 1977. "Identifiable Voting in Nineteenth-Century America: Toward a Comparison of Britain and the United States Before the Secret Ballot." *Perspectives in American History* 11:259–88.

Bourke, Paul F. and Donald A. DeBats. 1987. "The Structures of Political Involvement in the Nineteenth Century: A Frontier Case." *Perspectives in American History* 3:207–238.

Burnham, Walter Dean. 1965. "The Changing Shape of the American Political Universe." *American Political Science Review* 59:7–28.

Burnham, Walter Dean. 1974. "Theory and Voting Research: Some Reflections on Converse's "Change in the American Electorate"." *American Political Science Review* 68(03):1002–1023.

Burnham, Walter Dean. 2007. "Triumphs and Travails in the Study of American Voting Participation Rates, 1788-2006." *Journal of The Historical Society* 7(4):505–519.

Converse, Philip E. 1972. Change in the American Electorate. In *The Human Meaning of Social Change*, ed. Angus Campbell and Philip E. Converse. New York: Russell Sage Foundation pp. 263–337.

DeBats, Donald A. 2008. "A Tale of Two Cities: Using Tax Records to Develop GIS Files for Mapping and Understanding Nineteenth-Century U.S. Cities." *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 41(1):17–38.

DeBats, Donald A. and Mark Lethbridge. 2005. "GIS and the City: Nineteenth-Century Residential Patterns." *Historical Geograph* 33:78–98.

Emery, George. 2012. *Elections in Oxford County, 1837-1875: A Case Study of Democracy in Canada West and Early Ontario*. University of Toronto Press.

Fredman, Lionel E. 1968. *The Australian Ballot: The Story of an American Reform*. East Lansing, MI: Michigan State Univ Pr.

Gerber, Alan S. and Donald P. Green. 2000. "The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout: A Field Experiment." *The American Political Science Review* 94(3):653–663.

Hauser, Robert M. 1982. "Occupational Status in the Nineteenth and Twentieth Centuries." *Historical Methods: A Journal of Quantitative and Interdisciplinary History* 15(3):111–126.

Heckman, James A. 1979. "Sample Selection Bias as a Specification Error." *Econometrica* 47(1):153–161.

Holt, Michael F. 2001. "Rude Republic: Americans and Their Politics in the Nineteenth Century (review)." *Civil War History* 47(2):164–167.

Honaker, James, Gary King, Matthew Blackwell and others. 2011. "Amelia II: A program for missing data." *Journal of Statistical Software* 45(7):1–47.

Katz, Michael B. 1975. *The People of Hamilton, Canada West: Family and Class in a Mid-Nineteenth-Century City*. Cambridge, MA: Harvard University Press.

Key, V. O. 1949. *Southern Politics in State and Nation*. New York: A. Knopf.

Leifeld, Philip. 2013. "texreg: Conversion of Statistical Model Output in R to \LaTeX and HTML Tables." *Journal of Statistical Software* 55(8):1–24.

Lessoff, Alan and James J. Connolly. 2013. "From Political Insult to Political Theory: The Boss, the Machine, and the Pluralist City." *Journal of Policy History* 25(02):139–172.

Long, J. Scott. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage.

Rainey, Carlisle. 2014. "Arguing for a Negligible Effect." *American Journal of Political Science* .

Sekhon, Jasjeet S. 2009. "Opiates for the Matches: Matching Methods for Causal Inference." *Annual Review of Political Science* 12(1):487–508.

Silbey, Joel. 1994. *The American Political Nation: 1838 - 1893*. Stanford University Press.

Thernstrom, Stephan. 2009. *Poverty and Progress: Social Mobility in a Nineteenth Century City*. Harvard University Press.

VanderWeele, Tyler J. 2011. "Sensitivity Analysis for Contagion Effects in Social Networks." *Sociological Methods & Research* 40(2):240–255.

Wasserman, Stanley and Katherine Faust. 1994. *Social Network Analysis: Methods and Applications*. Cambridge University Press.