Picking People or Pushing Politics:
Selection and Influence on Five Network Criteria

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Abstract:

Typically we do not form our social networks randomly. Yet common experience tells us that those around us can affect us in ways that are both profound and prosaic. In turn, such effects further alter our social networks. Yet this dynamic co-evolution makes it extremely challenging to cleanly test, for example, a proposition as simple and intuitive as the idea that the people with whom we interact help shape our political attitudes and behaviors. New research designs have begun to help us untie the causal knot formed by selection processes iteratively confounding social influence processes. To our knowledge, however, this paper is the first to disaggregate the specific kids of social networks over which political influence might flow. We measured networks representing friendship, respect, time spent together, political talk, and "difficulty getting along" – an aversive network. Among these distinct types of social ties, we find that friendship is the dominant conduit for influence on political attitudes and behaviors.

INTRODUCTION

We are at once creators and captives of our social networks. We actively create our networks, through our choices to attend a conference or have a beer, where to work, where to play, and where to pray. But our networks, in turn, offer particular constraints and opportunities. They offer access to specific resources, points of view, and information. The questions of how our networks emerge and influence us are endemic across the social sciences. Here we are interested in a narrow but important slice of these questions: how politics structures our networks, and, in turn, how our networks structure political discussion in society. This dynamic, we would argue, following Mutz (2002), Mansbridge (1999), and Huckfeldt, Johnson and Sprague (2004), constitutes the very flesh and blood of the body politic: the multitude of little interactions and discussions that collectively represent popular deliberation about the issues of the day. Indeed, the mechanisms and quality of political opinion formation constitute the heart of democracy (Habermas 1996). Therefore, it is important that we understand, for a given set of opportunities to interact with others, the extent to which people associate with those holding views at odds with their own? Do such associations, in turn, have an impact on what people believe?

Our objective is to examine these processes in a microcosm, taking advantage of a natural experiment that occurs in educational settings, where individuals with few pre-existing ties to one another are placed together in a relatively closed, intensely social, yet self-structuring environment for an extended period of time. We collected whole network data from fourteen communities, and examined how political attitudes and interpersonal relationships develop over time at the micro level. These data allow us to address the questions: Throwing a set of individuals with few or no prior relationships into an immersive social setting, what predicts the structure of the emergent network? How does this network, in turn, push and pull the political views of its new members?

Our approach represents a significant methodological advance. One standard critique of studies of network influence is that so-called "network effects" are really just epiphenomenal selection effects due to individuals choosing each other on some sort of individual-level basis, and that there are almost surely omitted factors related to both attitudes and network ties. Our research design, by focusing on the whole network, with longitudinal data collected at the inception of the social system, greatly reduces the power of such a critique. With this design, we can assess and control for individual attitudes before they are plausibly subject to any social influences within the social system. Thus, we can observe and estimate both selection and influence processes distinctly.

SOCIAL SELECTION AND SOCIAL INFLUENCE

Our approach represents a significant advance on the conceptual level. There have been several threads of research on network formation and social influence within political science, sociology, and social psychology. Two key themes run through these literatures: *social selection* (in particular, homophily—the tendency for similar individuals to share ties) and *social influence* (the tendency for individuals who have ties to become more similar). We discuss each below.

Social selection

We tend to be like the people we have ties to (homophily). This is a pattern that has been found at the micro level, the macro level, across time, and across societies. As McPherson, Smith-Lovin & Cook (2001) stated in their review, homophily is one of a handful of law-like patterns in the social sciences. For example, discussion partners are likely to be similar in age, race, religion (Marsden 1987), and, most relevant to the present paper, political preferences (e.g., Huckfeldt and Sprague 1995, Ikeda and Huckfeldt 2001, Donatella et al. 2008). Such a robust pattern almost

certainly is the result many processes. As discussed below, it may be the result of an endogenous process of individuals seeking ties to similar others (Schelling xx), however, it is equally clear that there are structures outside of the control of any single individuals. For example, to the extent that residency is segregated by class, race, ethnicity, and the like, and to the extent that these same factors are powerfully associated with political views, it is likely that individuals with similar political views will be grouped together. To take a simple example, it is simply not possible for a person of modest means to live in Beverly Hills—it is not a choice. With respect to politics, even if politics did not play a direct role in tie formation, our networks might be sharply segregated by political preferences. The existing research therefore strongly supports the hypothesis that in any given population there will be strong tendencies toward homophily:

Hypothesis 1: Individuals tend to have relationships with other individuals with similar political preferences.

In the literature the dissection of homophily into endogenous and exogenous components is surprisingly incomplete, especially with respect to politics. Part of the analytic challenge is that these endogenous and exogenous factors interplay, where certain institutions exist (exogenously) that, in turn, facilitate the selection of similar others. Churches, synagogues, and mosques are at once places for individuals to pray and to find others with similar religious preferences. Politics offers similar (but in the US, far less powerful) institutions—e.g., those who attended Obama house parties in 2008 predictably connected with others who had similar political preferences. There are few examples of research, however, that attempt to control for the opportunity structure and focus analytic attention on the individual-level choices to connect or not connect (for an experimental exception, see Byrne 1971).

Homophily with respect to politics might emerge out of individual choices a number of reasons. One is informational: similar others offer relevant information (Festinger 1954). For

example, if you are attempting to evaluate which candidate to support in an election, it is likely most useful to consult someone who has similar political preferences on a variety of dimensions. In the nonpolitical realm, this is done in an automated fashion online with respect to a variety of products ("People who bought this book also bought the following books…").

A second potential reason for homophilous preference is self-verification (Swann et al. 2000), the notion that people would prefer to interact with others who are likely to understand them as they understand themselves. This encourages sorting that would reinforce such understanding.

A third potential reason is cognitive balance (e.g., Heider 1958). Ties between individuals that hold dissimilar attitudes (including political views) are experienced as imbalanced. This imbalance causes discomfort. The imbalance may be resolved by dissolving the interpersonal relationship, or by one individual bringing his or her attitude into alignment with the other individual's.[1] Importantly, such processes can operate outside of conscious awareness (Greenwald and Banaji 1995:13). This tendency toward balanced relationships suggests that pairs of individuals who have consistent political orientations are relatively more likely to create and maintain relationships. Both the self verification and the cognitive dissonance explanations of homophily require an additional assumption that political preferences are relatively salient. That is, there are a wide variety of dimensions of similarity and dissimilarity, from music taste to food preferences, from religion to politics. While political scientists might begin with the prior that politics is more relevant to an individual's daily existence than, say, a preference for a sports team, the reality for most people might be quite different.

[1] Note that this literature is cognitive in nature (i.e., about ego's beliefs), and thus does not necessarily imply that if ego is liberal and alter conservative they will not be friends. It suggests that ego might (incorrectly) believe that alter is liberal, allowing the friendship to endure; or that ego might believe alter is conservative, making an enduring friendship less likely; or that ego might classify alter as an exceptional type of conservative more simpatico with liberal beliefs than other conservatives (Heider 1958: 208).

Each of these processes yields hypotheses regarding different types of relationships between two individuals. If the process is purely informational, then it is quite plausible that someone who has dissimilar political preferences has similar musical, food, or literary preferences. In fact, politics, for most people, likely constitutes only a tiny portion of the information exchanged with others. One would therefore expect that if information is the major driver of political homophily, that discussions regarding politics will tend to take place between people with similar political preferences, but that broader relationships (e.g., friendship) might not be homophilous. Alternatively, if cognitive dissonance were a major driver, then one would expect that valenced relationships, such as respect and friendship, would align with similarity of political preferences. And if self verification were important, then one predict that frequency of interaction would be driven by similarity of political preferences.

Social Influence

Our networks, while dynamically evolving, are also simultaneously affecting us. A well-known stream of social psychology and sociology research from the 1940s and 1950s (Newcomb 1943; Lazarsfeld et al. 1948; Festinger et al. 1950; Festinger 1954) explored how our networks affect our attitudes and behaviors. These findings were followed up by research in political science on contextual effects (Berelson 1954; Putnam 1966), as well as a series of studies using egocentric network data (Huckfeldt, Johnson and Sprague 2002 and 2004; Huckfeldt and Sprague 1987 and 1991; Mutz 2006; Klofstad 2007; Lazer et. al. 2008; Lazer et. al. 2010; Lazer et. al. 2011). There is also a parallel, whole-network oriented, research vein in current sociological research, generally focusing on non-political attitudes, e.g., Erickson (1988), Friedkin (1998; 2004), Friedkin and Johnsen (1997), and Marsden and Friedkin (1993). All of these research

streams suggest that there is a tendency for individuals to become more like their discussion partners over time, thus our second hypothesis:

Hypothesis 2: Individuals' political attitudes change in the direction of the political attitudes of those with whom they are socially tied.

The theoretical underpinnings of attitudinal change include cognitive balance (e.g., Frank and Fahrbach 1999), group-persuasion (Mackie and Queller 2000), and elite driven models involving the dynamics of political attention (Zaller 1992). The statement by an individual you know that he/she likes a movie sends you a signal that it is, indeed, a good movie, affecting your own belief about the movie. From a cognitive perspective, the statement by someone whom you like that he/she prefers a presidential candidate that you do not creates a tension that may be resolved by changing your own belief about that candidate. Not only is the friendship between two people endogenous, but so is the attachment between those individuals and their political views. Should a liberal talk to a conservative, they might choose not to become friends (or to sever an existing relationship), or one or both individuals might change their ideological orientation. This dynamic probably unfolds in an uneven, stochastic, fashion. The equilibrium may evolve below the level of conscious adjustment (McConnell et al. 2008). Friendship begets familiarity, and familiarity (may) beget friendship, but what friends find out about each other is driven largely by the vagaries of conversations and events, and politics may not even come up. Presumably, in the absence of talk about politics, social influence on political views is limited or non-existent.[2]

As with social selection, one would expect that the underlying psychological process determines the relational pathways of social influence. If the process were primarily informational, then exposure to particular political viewpoints should be the main driver. If the

[2] We can, but currently do not test this interesting hypothesis. Perhaps we should include this test in a revised version?

process were based on cognitive dissonance, then influence would be driven by valenced ties—such as friendship and respect.

RESEARCH DESIGN

Analytical Challenge

Because social similarity may generate both social ties and similar outcomes, including political attitudes, social similarity may be a source of a spurious causal association between social ties and attitudes.[3] A critical challenge in studying the impact of social networks on political attitudes is dealing with this possible alternative explanation of a positive association between political behavior/attitudes and network configuration.

The problem of measuring social influence (associates affecting individuals) in the presence of selection effects (individuals choosing their associates) has been well-documented in both the sociological (Mouw 2006; Winship and Mare 1992) and the economic (Manski 1993) literatures. A recent review (Soetevent 2006) of efforts in economics to address this problem suggested three categories of strategies: (1) application of certain data collection procedures (e.g., manipulation via natural or laboratory experiments); (2) use of inferential procedures that eliminate selection concerns (e.g., use of instrumental variables); and (3) direct evaluation of the functional form of the selection process (e.g., through a two-stage analysis).

Within political science, Nickerson (2008) offers a rare example of the first type of strategy for studying social contagion. Nickerson conducted an experimental study of the transmission of "get out the vote" messages within two-voter households, by randomly manipulating the message that households received. Half of the households received a get out the

[3] As an example, one empirical investigation into the role of contacts in finding jobs that explicitly explored this potential spurious found that ties among individuals can capture social similarity, which drives similar employment outcomes (Mouw, 2003).

vote message, and the other half a placebo message. The key finding was that, for households that received the get out the vote message, the individual in the household who did not answer the door was more likely to turn out (suggesting social transmission of the behavior). Huckfeldt, Sprague, and colleagues (1987; Huckfeldt, Plutzer and Sprague 1993; Huckfeldt et al. 1995; Huckfeldt, Johnson and Sprague 2002; 2004), follow a quasi-experimental path. They dealt with the co-evolution of attitudes and networks in two ways: (1) by using extensive individual-level control variables; and (2) by treating elections as an exogenous factor raising, for short periods, the salience of political views, thus activating political discussions and social influence processes.

This vein of research finds substantial evidence that people's political preferences become increasingly aligned with those of their contexts as an election nears. Yet, while these findings are compelling, they do not eliminate the possibility that the results are driven by divergent histories (e.g., campaign messages may differ depending on where you sit in the network), or a selection bias from omitted or difficult-to-measure factors such as associational choices (e.g., in Huckfeldt, Sprague and colleagues' work, the reasons why an individual has a particular set of associates).

We seek to advance this research through a longitudinal and more microscopic examination of social influence over time. Longitudinal data allow the examination of whether the previously observed political views of a student's contacts are significantly associated with later changes in that student's own political views. This approach avoids some of the inferential challenges in discerning the difference between homophily and social influence in cross sectional data. However, as Cohen-Cole and Fletcher (2008) highlight in their critique of Christakis and Fowler (2007), unobserved heterogeneity is still a concern with respect to longitudinal data, an issue we analyze in the discussion section in light of our findings (also see response by Fowler and Christakis (2008)).

Our research setting enables us to observe individuals' political views before and after exposure to one another. We can assume that initial political views among new group members are not the result of interactions with the other participants in the study. This assumption allows us to examine whether subsequent interactions among participants contribute to changes in their political views. This has an additional advantage that individuals likely accommodate themselves to differences with others over time. That is, it is plausible that one can observe disagreement in networks that results in neither persuasion nor reduction in communication (Lazer 2001). The advantage of the research design here is that such a process of accommodation will not yet have taken place.

Design and Data

This study builds upon social network methods of assessing interpersonal social influence (Friedkin & Johnsen 2002; Leenders 2002; Robins Pattison & Elliott 2001). Our data were collected from 753 members (including 222 freshmen) of a residential fellowship program that exists at 14 large universities predominantly (xx out of 14) from the Midwest. We collected data in two waves: at the very beginning of the academic year in 2008, and shortly after the election in November. The first wave included a variety of political items, specifically: (1) interest in politics, (2) placement on a left to right scale, (3) party identification (id), (4) presidential vote preference and (5) self assessed probability of voting. The second wave included parallel items (substituting actual voting behavior for items 4 and 5), plus a complete roster network survey on close friendship, talking politics, spending a lot of time with, and who they held in high esteem. The overall response rate from respondents whose first wave and second wave surveys could be matched was 728 out of 753 scholars or 97%. (99% for freshmen, 219 out of 222).

Table 1 offers descriptive statistics on the individual level variables. Looking at the Time 1 and Time 2 means for political views, party ID, and choice for president, we see that the sample leans unsurprisingly to the left, although not dramatically so. The four networks giving rise to these indicators of individual-specific social environments are all significantly correlated with each other (network correlations estimated for significance using the Quadratic Assignment Procedure [QAP, Hubert 1978; Krackhardt 1987]), with correlation coefficients ranging from 0.24 to 0.56. The weakest of these significant correlations is between the "Talks Politics" and the "Esteem" networks. The strongest correlation is between the "Close Friend" and "Spends Time" networks.

[TABLE 1 HERE]

It is worth lingering for a paragraph on the qualities of this population. The population was chosen because it offers a setting in which large numbers of individuals with few prior relationships are thrown together for an extended period of time in an enclosed social system. This offers significant analytic advantages, and there are few parallel natural experiments elsewhere in our society. It was a particularly important population in 2008—young voters from working class backgrounds (because of income limits on eligibility for the fellowship), largely from the Midwest. The choice of population was thus opportunistic, but still quite interesting. The relative homogeneity of the population is analytically necessary, but does pose limitations in terms of external validity. The fact that these are samples from 14 universities ameliorates but does not eliminate the concern. It is plausible, for example, that individuals in college are more likely and willing to talk about politics, and more malleable upon exposure to discussions. Indeed, this would be consistent with the literature on the acquisition of political identity over the lifetime (Jennings and Niemi xx). This would suggest that social selection and influence are particularly

important to study at this life stage, but also that one should be cautious about extrapolating these findings to other populations.

Our analytic focus is on the freshmen. In particular, following Lazer (2001) and Lazer et al. (forthcoming) we anticipate that new entrants into the social system offer a better means with which to detect selection and influence dynamics. As noted above, the key challenge in studying selection and influence is that in cross sectional data the two can look identical. In examining freshmen, we are looking at a group that has few ties to each other or to incumbent students in the program. In studying self contained dormitories, we are examining the dominant, if nonexclusive, part of their social milieu. These dormitories offer the pool from which to draw most of their friends. Refocusing the objective of this paper, the key questions are: to what extent do they choose friends like themselves? And to what extent do they start to look like, politically, the friends they do make?

ANALYSIS

Social Influence

Our setting allows the analysis of two aspects of the social influence processes involving these new students. First, we analyze whether and how these new students are influenced by their alters (both new and old). Second, we analyze whether and how all students are influenced by their new student alters. A key feature of these data is that social ties with the new students form after the Time 1 measures. As a result, for both of these social influence processes, the Time 1 individual outcomes could not have been the result of interactions with the corresponding alters.

Table 2 summarizes the correlations among the individual-level variables used in the regressions estimating social influence. The left portion of Table 2 presents correlations based

only on new student alters, and the right portion based on all student alters. Note that because student's own Time 1 and Time 2 outcomes are measured directly, their correlations are identical in both the right and left portions of Table 2. An initial suggestion of social influence may be seen in Table 2 when student's Time 1 political characteristics are not correlated with those of their associates, but are correlated with the student's Time 2 characteristics. This pattern of correlations is vivid for the choice of president outcome for both the right and left portions of Table 2. As discussed above, this suggestion of influence could also be explained by selection processes. We next test in more detail for evidence of both processes in these data.

[TABLE 2 HERE]

Our analysis tests for whether an individual's Time 2 outcome is associated with the mean Time 1 outcome of their alters. It is important to emphasize that this analytical design is NOT testing for convergence in attitudes. Rather, we test whether a prior-to-exposure characteristic among an individual's alters is associated with that individual's own characteristic measured at a later time. This analytical design obviates concerns about reflection (Manski 1993). We also control for an individual's own Time 1 characteristic to ensure we are testing for influence effects in *changing* an individual's attitude or behavior. Other controls include dummy variables for the particular college site, student year, student sex, race, and religion – the latter three being characteristics previously identified as associated with relationship choices (Marsden 1987).

We test for social influence in two directions (new students influencing all students, and all students influencing new students) for five political outcomes (3 attitudes and 2 behaviors) conducted along the pathways created by four different types of social ties (spending time, esteeming, close friends, and talking politics). The mean T1 values of alters serve as the variables indicating influence.

Table 3 presents the results of these analyses, focusing solely on these indicators of influence. The left portion of Table 3 gives the estimates for the social influence of new scholars on all scholars, and the right portion of Table 3 the influence of all scholars on new scholars. Within each portion, the left column presents the estimates from models of social influence for each particular tie taken in isolation (i.e., each cell of the "in isolation" column came from distinct regression models), and the right column estimates are derived from models including simultaneously the social influence indicators for all four relationship types. Significant and positive coefficients in both the "in isolation" and the "simultaneously" column provide more robust evidence for the presence of social influence.

[TABLE 3 HERE]

Table 3 reveals robust evidence for social influence for one of the political attitude variables (political view – location on a left/right political spectrum), and both of the political behavior variables (voting behavior and choice for president). For the former, social influence directed both from and to new students flows consistently and robustly through the "close friends" relationship and no other. For the political behavior outcomes, social influence flowing through the "close friends" tie is positive and significant for five out of eight tests (as defined by the two behavior variables, the two influence processes, and the two model structures – isolated and simultaneous). Thus when we detect social influence, this influence is most likely to be transmitted via close friendship ties.

When testing for how all students influence new students' choice for president, this influence appears to be conducted by the "talk politics" tie, which otherwise yields surprisingly few significant associations despite the subject of this study. It is possible that this tie is also a conduit for influence on political behavior outcomes.

Although our study design and analytical strategy together addresses many of the critiques levied against other social influence studies, we still need to address selection. If new students chose their close friends (or the people with whom they discuss politics) based on political characteristics, many other non-influence processes could give rise to the findings just presented. We test for such selection effects in the next section.

Social Selection

For those social ties demonstrated as being a likely pathway for social influence, we test for evidence that students formed these ties in part based on similarities in political characteristics. We perform this analysis using a social network analysis method called exponential random graph modeling (*ergm,* also known as "p*"). Because this analytical method tests for associations with the presence of network ties, and the social networks are site-specific, our analysis is limited to the seven largest of the fourteen sites studied. Although influence may be estimated in models including observations from all 14 sites, network formation must be tested separately by site.

We use exponential random graph models to investigate whether similarities along any of our five characteristics of interest influence the generation of the T2 ties. Our model includes similarity terms to test for homophily for each of the five political variables(usually using the absolute value of the difference in values for a dyad). For categorical variables (i.e., choice for president), a matching variable is used that takes on the value 1 when the choices for president of the two members of a dyad agree (i.e., either both for Obama or both for someone other than Obama), and the value 0 otherwise (i.e., one for Obama and one not). For such matching variables, a positive coefficient indicates homophily. That is, a positive and significant coefficient indicates that agreement on that variable makes a tie more likely. For ordinal variables (e.g., position on a 7-point Left/Right political spectrum), we use the absolute value of the difference of the two measures from a dyad. For these distance variables, a *negative* coefficient indicates homophily. That is, the smaller the difference between two individuals on that variable, the more likely the two individuals form a tie.

In addition to variables testing for political homophily in tie formation, our p* models also include terms for other forms of homophily expected to affect tie formation (i.e., class year, sex, race and religion). Finally, the p* models include individual-specific dummy variables to control

for all individual-level characteristics, whether observed or unobserved. Table 4 presents the estimation results (individual dummies excluded) for the two ties suggested to be pathways of influence ("close friend" and "talk politics") across the seven largest of the fourteen sites.

[TABLE 4]

The upper panel of Table 4 presents the results testing for homophily in "close friend" formation among the seven largest sites, while the lower panel presents the results for the "talks politics" relationship. The two panels reveal a common story. While we find robust evidence for homophily with respect to class year and sex (all but 2 of the 28 estimates for homophily in these two variables were strongly significant), we find little to no homophily with respect to any of the political characteristics. Although some of the political variables show more than one significant finding across the seven sites, these cases either include marginally significant estimates or also include a contradictory finding of heterophily – when greater differences make tie formation *more* likely. The lack of political homophily in the formation of "close friend" ties is surprising, but the similar absence in the formation of "talk politics" ties is shocking.

DISCUSSION

Our findings included two notable surprises. First is the lack of evidence for homophily on political characteristics not just in the formation of friendship networks, but strikingly in the formation of political discussion networks. The second surprise is the social influence on political outcomes appear to flow through friendship ties to a much greater extent that through political discussion ties. Although these two findings were surprises, they help to robustly elucidate the operation of social influence processes with respect to politics. Had there been political homophily in tie formation, our social influence findings would have been suspect. The lack of political homophily strengthens our findings as causal evidence of social influence.

Second, the importance of affective friendship ties in influence processes is consistent not only with previous findings (Lazer et al. forthcoming), but also with the cognitive dissonance model and balance theory reviewed above. Dissonance or imbalance is largely resolved through changes of attitudes rather than relationships, and imbalance is most keenly felt for affective ties.

It is worth emphasizing that our test for social influence as designed is quite ambitious. Most notably, only two months pass between the two measures of the political outcomes. This study is based in part on the hope that such a short window is sufficient to not only produce some changes in political attitudes and behavior at the individual level, but to produce changes with systematic and detectable associations with social relationships. Second, we limit our testing of social influence to the "linear-in-means" assumption (Hoxby and Weingarth 2005). That is, we assume that social influence will be detectable using the mean view of alters when influence may be structured in many other ways (e.g., dependent upon the uniformity or variation among alters' characteristics). Because of these stringent restrictions, the absence of significant findings of influence could result even when social influence is present, but either playing out over a longer period of time or structured in a way other than linear-in-means.

Because of this stringency, and because our findings for social influence on political views replicates a previous finding (Lazer et al. forthcoming), we are confident in the validity of our findings of influence. Because our research setting included fourteen different sites, it is very likely that our findings generalize beyond our study population. Buttressing our claim of greater generalizability is the fact that we sought and identified political influence in social settings where members overall had very little interest in politics (see Table 1). To an extent not previously achieved in any study, we have revealed the pathways of true social influence affecting political attitudes and behaviors.

Table 1: Summary statistics for ego and ego's alters for the five outcome variables, using all alters and restricted to new scholar alters

	N	Mean	SD	N	Mean	SD
Political View *(1=Extremely Left … 7=Extremely Right)*						
T2 Outcome	729	3.84	1.53			
T1 Outcome	715	3.83	1.51	New Scholar Alters Only		
Mean T1 Outcome of "Spending Time" alters	674	3.85	0.62	539	3.68	0.91
Mean T1 Outcome of "Esteemed" alters	661	3.97	0.63	485	3.82	0.99
Mean T1 Outcome of "Close Friend" alters	658	3.87	0.70	429	3.78	1.05
Mean T1 Outcome of "Talk Politics" alters	533	3.91	1.04	280	3.80	1.30
Party ID *(-3=Strong Republican … 3=Strong Democrat)*						
T2 Outcome	731	0.32	2.17			
T1 Outcome	714	0.26	2.05	New Scholar Alters Only		
Mean T1 Outcome of "Spending Time" alters	675	0.25	0.87	539	0.51	1.35
Mean T1 Outcome of "Esteemed" alters	661	0.13	0.86	484	0.32	1.38
Mean T1 Outcome of "Close Friend" alters	658	0.23	0.97	429	0.44	1.47
Mean T1 Outcome of "Talk Politics" alters	534	0.18	1.40	279	0.30	1.67
Political (Dis-)Interest *(0=Very interested … 3=Not at all interested)*						
T2 Outcome	738	2.02	0.86			
T1 Outcome	721	2.13	0.86	New Scholar Alters Only		
Mean T1 Outcome of "Spending Time" alters	676	2.15	0.30	539	2.18	0.56
Mean T1 Outcome of "Esteemed" alters	661	2.08	0.30	485	2.21	0.57
Mean T1 Outcome of "Close Friend" alters	659	2.16	0.38	429	2.20	0.60
Mean T1 Outcome of "Talk Politics" alters	534	1.86	0.50	281	1.96	0.66
Voting Behavior *(1=Will definitely not vote … 5=Will definitely vote)*						
T2 Outcome *(1=voted, 0=did not vote)*	737	0.72	0.45			
T1 Outcome	715	4.22	1.03	New Scholar Alters Only		
Mean T1 Outcome of "Spending Time" alters	676	4.17	0.41	539	4.26	0.61
Mean T1 Outcome of "Esteemed" alters	661	4.32	0.37	485	4.32	0.56
Mean T1 Outcome of "Close Friend" alters	659	4.20	0.48	428	4.27	0.67
Mean T1 Outcome of "Talk Politics" alters	534	4.36	0.58	276	4.35	0.69
Voting for Obama *(1=An Obama vote, 0 otherwise)*						
T2 Outcome	494	0.67	0.47			
T1 Outcome	631	0.57	0.50	New Scholar Alters Only		
Mean T1 Outcome of "Spending Time" alters	679	0.46	0.20	539	0.55	0.33
Mean T1 Outcome of "Esteemed" alters	664	0.45	0.18	485	0.54	0.33
Mean T1 Outcome of "Close Friend" alters	662	0.45	0.21	429	0.54	0.37
Mean T1 Outcome of "Talk Politics" alters	535	0.46	0.29	281	0.53	0.40

Table 2: Correlations among the regression variables

	New Scholar Alters					**All Scholar Alters**				
	T2 Out-come	T1 Out-come	Spend Time	Esteem	Close Friends	T2 Out-come	T1 Out-come	Spend Time	Esteem	Close Friends
Political View										
T1 View	0.73***					0.73***				
Spend Time	0	0.04				0.21***	0.21***			
Esteem	0.04	0.03	0.61***			0.11**	0.11**	0.48***		
Close Friend	0.09+	0.09+	0.71***	0.6***		0.25***	0.2***	0.61***	0.44***	
Talk Politics	0.02	0.02	0.64***	0.62***	0.66***	0.17***	0.12**	0.47***	0.36***	0.43***
Party ID										
T1 Party ID	0.84***					0.84***				
Spend Time	0.04	0.08+				0.19***	0.19***			
Esteem	0.1*	0.1*	0.64***			0.12**	0.11**	0.47***		
Close Friend	0.14**	0.14**	0.77***	0.67***		0.23***	0.18***	0.66***	0.47***	
Talk Politics	0.1+	0.07	0.71***	0.67***	0.74***	0.23***	0.2***	0.48***	0.41***	0.47***
Political Interest										
T1 Interest	0.69***					0.69***				
Spend Time	0.06	0.04				-0.02	0.03			
Esteem	0	-0.01	0.53***			0.04	0.03	0.32***		
Close Friend	0.01	0.02	0.7***	0.5***		0.04	0.09*	0.59***	0.34***	
Talk Politics	-0.01	0.05	0.5***	0.43***	0.66***	0.04	0.11*	0.36***	0.22***	0.38***
Voting Behavior										
T1 Voting	0.46***					0.46***				
Spend Time	0.02	0				0.14***	0.1*			
Esteem	-0.04	-0.04	0.4***			0.15***	0.04	0.38***		
Close Friend	0.03	-0.02	0.66***	0.47***		0.16***	0.04	0.62***	0.44***	
Talk Politics	0.01	0	0.59***	0.47***	0.67***	0.11**	0.08+	0.45***	0.34***	0.48***
Choice for President										
T1 Choice	0.63***					0.63***				
Spend Time	0.02	0				0.16***	0.09*			
Esteem	0.16**	0.01	0.61***			0.14**	0.07+	0.32***		
Close Friend	0.19**	0.04	0.7***	0.62***		0.2***	0.08+	0.54***	0.41***	
Talk Politics	0.15*	0.04	0.63***	0.6***	0.68***	0.23***	0.1*	0.4***	0.27***	0.39***

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$

Table 3: Testing for Social influence. Regressing ego's Time 2 outcome on the mean Time 1 outcome(s) among ego's alters, and controlling for ego's Time 1 outcome, site and demographic characteristics (not shown). Standard errors given in parentheses.

	New scholars' influence on All scholars				**All scholars' influence on New scholars**			
Outcome & Tie Type	Estimated in Isolation		Estimated Simultaneously[a]		Estimated in Isolation		Estimated Simultaneously[a]	
Political View (ordered logit)								
Spend Time Together	-0.022	*(0.116)*	-0.542	*(0.338)*	0.368	*(0.327)*	0.114	*(0.538)*
Esteem	-0.07	*(0.113)*	-0.36	*(0.251)*	**0.528***	***(0.314)***	-0.153	*(0.392)*
Close Friend	**0.155+**	***(0.112)***	**0.376+**	***(0.251)***	**0.736****	***(0.277)***	**0.735***	***(0.389)***
Talk Politics	0.031	*(0.104)*	**0.361***	***(0.172)***	0.145	*(0.196)*	0.016	*(0.232)*
Party ID (ordered logit)								
Spend Time Together	-0.079	*(0.080)*	-0.179	*(0.252)*	-0.197	*(0.257)*	-0.05	*(0.424)*
Esteem	0.047	*(0.085)*	0.145	*(0.213)*	0.069	*(0.235)*	-0.185	*(0.291)*
Close Friend	0.058	*(0.080)*	0.074	*(0.216)*	0.052	*(0.193)*	-0.163	*(0.299)*
Talk Politics	0.056	*(0.085)*	0.173	*(0.157)*	0.148	*(0.153)*	0.214	*(0.181)*
Political Interest (ordered logit)								
Spend Time Together	**0.264+**	***(0.192)***	0.325	*(0.541)*	0.032	*(0.623)*	0.562	*(1.067)*
Esteem	0.009	*(0.206)*	0.038	*(0.452)*	0.227	*(0.613)*	0.767	*(0.860)*
Close Friend	-0.004	*(0.185)*	-0.676	*(0.493)*	-0.106	*(0.414)*	-0.67	*(0.648)*
Talk Politics	-0.094	*(0.214)*	0.17	*(0.354)*	-0.123	*(0.375)*	-0.176	*(0.423)*
Voting Behavior (logit)								
Spend Time Together	**0.482***	***(0.271)***	0.51	*(0.750)*	0.467	*(0.876)*	-2.796	*(1.562)*
Esteem	-0.4	*(0.316)*	-0.823	*(0.700)*	N/A		N/A	
Close Friend	**0.436***	***(0.230)***	0.725	*(0.641)*	**1.054***	***(0.571)***	**1.818***	***(0.804)***
Talk Politics	-0.001	*(0.280)*	-0.494	*(0.591)*	-0.546	*(0.541)*	-0.518	*(0.632)*
Voting for Obama (logit)[b]								
Spend Time Together	0.445	*(0.766)*	-1.72	*(2.602)*	0.282	*(2.077)*	-7.998	*(5.134)*
Esteem	**1.575***	***(0.790)***	0.931	*(1.785)*	0.093	*(1.960)*	3.717	*(3.538)*
Close Friend	**2.164****	***(0.798)***	**2.691+**	***(1.802)***	2.296	*(1.973)*	3.954	*(3.683)*
Talk Politics	0.85	*(0.748)*	0.082	*(1.397)*	**2.08+**	***(1.453)***	**3.359***	***(1.919)***

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$; All tests are one-tailed, testing for positive social influence.

All regressions include controls for T1 outcomes and site dummy variables. Unless otherwise noted, all regressions also include dummy variables controlling for race, religion and sex.

[a] We used Variance Inflated Factors (VIF) to check for concerns about collinearity. In all cases, the maximum VIF was below the commonly-used threshold of 10 (e.g., Myers 1990: 369).

[b] To allow for convergence, these regressions do not contain dummies for religion or sex. A regression including these dummies but not any social influence variables (available upon request) showed neither religion nor sex to be significantly associated with the outcome.

Table 4: Testing for evidence of homophily in CLOSE FRIEND tie formation among political attitude and behavior indicators for the seven largest sites. All indicators were measured at T1. All are p* models with individual-level dummies (not shown) to control for all individual-level differences. Standard errors given in parentheses.

Site N:	**97**	**53**	**62**	**65**	**55**	**69**	**60**	Results consistent with:	
Constant	-3.11***	-0.06	-1.62**	-3.87***	-0.53	-7.79***	-4.99***	Homo-phily	Homo-phily
	(0.58)	*(136)*	*(0.57)*	*(0.80)*	*(0.65)*	*(1.68)*	*(1.05)*		
Matched Choice for President	0.01	0.31+	0.12	0.22+	0.14	0.08	-0.23	2	0
	(0.11)	*(0.17)*	*(0.14)*	*(0.12)*	*(0.16)*	*(0.13)*	*(0.17)*		
Difference in Intent to Vote	-0.03	-0.07	0.07	-0.04	0.07	0.06	-0.09	0	0
	(0.05)	*(0.07)*	*(0.06)*	*(0.07)*	*(0.07)*	*(0.06)*	*(0.10)*		
Difference in Political View	-0.03	-0.1	-0.17**	0.05	-0.12+	-0.01	-0.02	2	0
	(0.05)	*(0.06)*	*(0.06)*	*(0.05)*	*(0.07)*	*(0.05)*	*(0.06)*		
Difference in Political Interest	-0.12+	-0.04	-0.12	0	0.03	-0.03	-0.02	1	0
	(0.07)	*(0.10)*	*(0.08)*	*(0.09)*	*(0.09)*	*(0.06)*	*(0.10)*		
Difference in Party Identification	0	0.04	-0.07+	0	-0.05	-0.04	0.01	1	0
	(0.03)	(0.04)	(0.04)	(0.03)	(0.05)	(0.05)	(0.05)		
Matched Cohort Year	2.05***	1.54***	1.35***	0.88***	0.91***	0.86***	1.74***	7	0
	(0.09)	*(0.13)*	*(0.11)*	*(0.11)*	*(0.13)*	*(0.10)*	*(0.12)*		
Matched Sex	0.92***	1.23***	1.12***	0.9***	0.5*	1.48***	1.96***	7	0
	(0.10)	*(0.18)*	*(0.11)*	*(0.16)*	*(0.20)*	*(0.16)*	*(0.20)*		
Matched Racial Category	1.13***	-4.8	1.04***	-0.41	0.22	0.5	0.73	2	0
	(0.20)	*(136)*	*(0.17)*	*(0.39)*	*(0.36)*	*(0.80)*	*(0.46)*		
Matched Religious Category	0.09	0.61**	0.21	0.12	-0.11	-0.11	0.12	1	0
	(0.14)	*(0.20)*	*(0.23)*	*(0.15)*	*(0.16)*	*(0.12)*	*(0.15)*		

Similar testing for evidence of homophily in TALK POLITICS tie formation.

Site N:	**97**	**53**	**62**	**65**	**55**	**69**	**60**	Results consistent with:	
Constant	-5.44***	2.62	-2.06**	-7.75***	-5.72***	-5.25***	9.86	Homo-phily	Hetero-phily
	(1.06)	*(224)*	*(0.72)*	*(1.57)*	*(1.39)*	*(0.36)*	*(472)*		
Matched Choice for President	0.13	0	0.03	0.1	0.29	-0.14	0.1	0	0
	(0.16)	*(0.25)*	*(0.19)*	*(0.17)*	*(0.27)*	*(0.16)*	*(0.26)*		
Difference in Intent to Vote	-0.01	0.13	0.05	-0.13	-0.16+	-0.05	0.45*	1	1
	(0.07)	*(0.10)*	*(0.09)*	*(0.10)*	*(0.09)*	*(0.08)*	*(0.20)*		
Difference in Political View	-0.08	0.02	-0.1	0.1	-0.08	0.01	0.04	0	0
	(0.06)	*(0.08)*	*(0.08)*	*(0.07)*	*(0.11)*	*(0.06)*	*(0.10)*		
Difference in Political Interest	-0.25**	0.3*	-0.26*	0.09	-0.04	0.04	0	2	1
	(0.10)	*(0.12)*	*(0.11)*	*(0.12)*	*(0.14)*	*(0.08)*	*(0.15)*		
Difference in Party Identification	0.04	0.03	-0.09+	0.02	-0.01	-0.12*	0.05	2	0
	(0.05)	*(0.06)*	*(0.05)*	*(0.05)*	*(0.07)*	*(0.06)*	*(0.07)*		
Matched Cohort Year	1.63***	1.23***	0.97***	0.95***	1.29***	0.67***	1.23***	7	0
	(0.12)	*(0.17)*	*(0.15)*	*(0.14)*	*(0.20)*	*(0.12)*	*(0.17)*		
Matched Sex	0.93***	0.57	1.04***	1.19***	0.43	1.79***	1.7***	5	0
	(0.13)	*(0.42)*	*(0.15)*	*(0.24)*	*(0.34)*	*(0.24)*	*(0.30)*		
Matched Racial Category	0.66**	5.18	0.98***	-0.12	-0.76	0.16	3.57	2	0
	(0.25)	*(224)*	*(0.23)*	*(0.47)*	*(0.83)*	*(0.56)*	*(472)*		
Matched Religious Category	0.18	0.76**	-0.21	0.25	-0.17	-0.19	0.32	1	0
	(0.18)	*(0.25)*	*(0.31)*	*(0.19)*	*(0.24)*	*(0.16)*	*(0.22)*		

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; All tests are two-tailed.

Appendix

Site	N	% New Scholars	Religion (724 responses)	
1	36	44%	Baptist	3%
2	97	28%	Protestant	15%
3	51	31%	Roman Catholic	57%
4	61	30%	Other Christian	9%
5	37	32%	Jewish	2%
6	63	27%	Other Non-Christian	2%
7	53	34%	None	12%
8	49	31%		
9	37	32%	**Racial Identification (725 responses)**	
10	43	33%	White	87%
11	31	32%	Black	4%
12	69	26%	Hispanic	5%
13	43	23%	Asian	2%
14	58	28%	Other	2%
Total	728	30%	**Female**	21%

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